



**Conversation as an Ecology of learning:**  
An analysis of asynchronous discussions within  
an online professional community working to  
develop a democratic practice in education

Pascale Mompoin-Gaillard

Dissertation submitted in partial fulfilment of a Ph.D. degree



**UNIVERSITY OF ICELAND**  
**SCHOOL OF EDUCATION**



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Conversation as an Ecology of learning. An analysis of asynchronous discussions within an online professional community working to develop a democratic practice in education

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## **Abstract**

Teachers learn important things together through talking. Conversation-based continued professional development (CPD) for teachers has been insufficiently researched. In the context of current policy and practice - that remains top-down and controlling in terms of educators' autonomy and self-direction - more agile and transformative means of professional learning are key.

The research is a case study aiming to investigate the characteristics of the participation of education professionals (teachers, teacher educators, school heads...) from 50 European countries in an online professional learning community (OPLC) developed under the umbrella of Council of Europe's Pestalozzi Programme (PP). The study is also interested in how online asynchronous conversation can be a sustainable mode of CPD helpful for the creation of democratic spaces for learning. It directs attention to the nature of the conversation, taking place in the online interaction, the details of which turn out to be of crucial importance. The study is based on activities and data, neither of which was planned or collected for research purposes. The data is composed of the transcripts of participants postings between 2012 and 2017, and the interactions that are contained in the dialogic space that is the PP platform. Therefore, the design of the study deals with the complexity and scope of the context and data, that brings in the international, intercultural composition of participants who arrive with different histories and perhaps engrained assumptions and norms; the professional development context that is unusual; the online set up that is also particular due to the conversational nature of its activities; and lastly the complexity of the issue of democracy in education which may not fit so easily in the school curricula, or the culture of school, or institution and their education aims. To address this complexity, the framework of ecology was chosen to cater to the many parts of the context and the relationships these entertain to form the environment of the OPLC. The framework of ecology and its analysis may inform on what affordances are observed for an OPLC to reach its full transformative potential for participating educators. It is helpful to consider these and to conceptualize conversation as an ecology of learning that is conducive to engagement in online professional learning and development.

Transcripts of asynchronous discussion threads were analyzed, through thematic analysis and statistical treatment, to capture the structure and affordances of conversation-based online professional learning communities that foster the establishment of an ecology of learning that is conducive to the development of democratic practices in educational settings. To answer this overall concern, three main research questions were identified and chosen to form the core of the investigation. The first question concerns the features of the collaboration to identify elements that support – or impede – co-construction of knowledge among participants. The second research question focuses on the discernible factors and conditions that foster participants’ motivation to engage and uses Self-Determination Theory (SDT) as a basis to investigate the data. The third research question is centered on participants’ mental models of what constitutes a democratic teaching practice, and how educators’ engagement in the conversation may support transformative action in the classroom.

The results highlight enabling behaviors that help regulate pace, cohesion, topical persistence, strong ties, and congeniality in the conversation to enhance the potential for meaning making and co-construction of knowledge. Two moderator-presences, ‘teaching presence’ and ‘peer presence’, were found, thus the study enhances previous research on online presences (RQ1). Furthermore, eight factors were found to contribute to participants’ motivation to engage and remain active in the conversation, specifically: self-confidence in one’s practice, persistence towards attaining goals, sprightliness, inclusion, ethos, control, accountability, and curiosity. The SDT positing the need for competence, relatedness and autonomy was completed with a fourth need that is curiosity (RQ2). Finally, discursive alignments and tensions were found, that provoke a cognitive dissonance having the effect of helping participants to agree on objectives and seek ways to achieve more democracy in educational environments, which are not fundamentally democratic. As educators develop democratic dimensions, an ‘activist presence’ was found to be a response to these tensions (RQ3). Finally, concerning the overall question of affordances, the studied ecology, and the responses to the RQs suggest a development leading to the establishment of five structures in the OPLC. An ethos structure, an affect and identity structure, a communication structure, and a power structure are revealed as shaping the relations between members. All participate in forming an ensemble of affordances of conversation based OPLCs fostering an ecology of learning for the development of democratic practices in educational settings.



## Abstract in Icelandic

### Samræða í ljósi vistfræði náms:

Greining á samræðu á netinu, sem ekki er samstillt í tíma, í samfélagi fagfólks sem leitast við að þróa lýðræðisleg ferli í skólastarfi

Samræða kennara getur verið mjög lærdómsrík. Samt sem áður er ekki digur sá sjóður rannsókna sem beinist að starfsþróun og samræðu á vettvangi menntunar. Nútíma stefnumótun í menntun hættir til að vera stýrt að ofan og vantar fyrir bragðið ákveðinn sveigjanleika og sjálfræði sem laðar fram mikilvægar breytingar í starfinu og gefur faglegu námi kennara dýpri merkingu.

Þessi rannsókn er tilviksrannsókn sem beinist að athugun á því sem einkennir þátttöku fagfólks í menntageiranum (sem eru einkum kennarar, skólastjórar og kennaramenntendur) frá fimmtíu Evrópulöndum í rafrænu lærdómssamfélagi sem var þróað á vegum Pestalozzi starfsþróunarverkefnis Evrópuráðsins.

Mikilvægt áhersluatriði var að kanna hvernig samræða á netinu sem ekki er samstillt í tíma getur verið varanleg leið í starfsþróun á vettvangi fagfólksins. Sérstaklega þar sem markmiðið var að styðja við lýðræðislegt fyrirkomulag slíkrar menntunar. Í rannsókninni er sjónum beint eðli samræðunnar sem fer fram á netinu og bent er á fjölmörg einstök atriði sem þar skipta máli.

Gögnin sem rannsóknin byggir á eru skrifleg samskipti fagfólks innan menntakerfa á svæði Pestalozzi starfsþróunarverkefnisins sem fram fóru á árunum 2012–2017. Hvorki val þátttakenda, útfærsla samskiptanna né gögnin voru skipulögð með rannsókn í huga. Skipulag rannsóknarinnar sjálfrar þarf því að taka tillit til fjölmargra flækja. Þær tengjast ekki síst fjölþjóða samsetningu þátttakenda og þeirri margmenningu sem í henni felst. Þeir höfðu afar ólíkan bakgrunn og ólíkar hugmyndir um viðmið og gildi. Starfsþróunarumhverfið var að ýmsu leyti framandi, m.a. vegna þess hve mikil áhersla var lögð á samræðuþáttinn á netinu. Við þetta bættist viðfangsefni námsins, þ.e. ýmsar hliðar lýðræðis í skólastarfi sem féll iðulega hvorki inn í það námsefni sem skólarnir glímdu við, né inn í menningu

skólanna, eða annara stofnana, né almennt inn í höfuðmarkmið þeirra menntunar sem margir þátttakenda fengust við.

Til þess að glíma við þetta flækjustig var hugmyndin um vistfræði menntunar notuð til þess að ná utan um ólíka þætti aðstæðna og tengsla á milli þeirra í rafrænu lærdómssamfélagi. Sá rammi og jafnframt greining sem vistræðihugtakið leggur til, bendir til ólíkra möguleika sem hið rafræna netsamfélag býður þáttakendum upp á. Það er því rökstutt að gagnlegt sé að greina samræðu sem beinist að þeirri flóknu starfsþróun sem um ræðir frá sjónarhorni vistfræði menntunar.

Texti ofangreindra samræðna var þemagreindur og ákveðinni tölfræðilegri athugun beitt til þess að fá hugmynd um uppbyggingu hans og þá möguleika sem rafrænt samfélag, sem beinist að starfsþróun, felur í sér. Í þessu tilviki beindist samræðan að mótun og þróun lýðræðislegra hugmynda í skólastarfi.

Til þess að svara þessari áskorun voru þrjár rannsóknarspurningar mótaðar og eru þær kjarni rannsóknarinnar. Fyrsta spurningin spyr um einkenni samstarfsins og leitast við að bera kennsl á þá þætti samvinnu þátttakenda sem styðja, eða hindra mótun sameiginlegrar þekkingar. Næsta spurning beinist að aðstæðum, í ljósi sjálfsákvörðunakenningar (SDT), sem laða þátttakendur til þátttöku. Þriðja spurningin beinir sjónum að hugmyndum þátttakenda um þeirra upplifun af lýðræðislegum kennsluháttum og menntun og hvernig framlag þeirra í umræðunni geti stutt við umbætur í kennslustofunni að þessu leyti.

Niðurstöðurnar sýna hvað það er í samskiptunum sem stýrir hraða, samheldni, tryggð við umræðuefnið, tengsl þátttakenda og þægilegu viðmóti í samskiptunum sem allt stuðlar jafnframt að skilningi og mótun frekari þekkingar hjá hópnum. Það mátti auk þess sjá tvenns konar áhrif þeirra sem stýrðu umræðunni, annars vegar það sem kalla mætti kennaraáhrif og hins vegar áhrif sem eiga frekar skylt við jafningjaáhrif (RSP1).

Átta þætti mátti greina sem stuðla að áhuga þátttakenda til virkrar þátttöku í þeirri samræðu sem boðið var upp á og skipta máli til að halda henni áfram (sjá Töflu 18). Þeir eru, sjálfstraust í faglegu starfi, ásetningur að ná settu markmiði, lifandi áhugi á verkefningu, ásetningur um að virða sjónarmið annarra og hafa jafnræði í samræðu, svipuð gildi og siðferði þátttakenda, tilfinning fyrir að hafa stjórn á aðstæðum, ábyrgð á þátttöku öxluð og forvitni um efni verkefnisins. Innviðir sjálfsákvörðunarkenningarinnar komu fram, þ.e. þörfin fyrir hæfni, tengsl og sjálfræði, en nauðsynlegt var að bæta við þættinum forvitni (RSP2).

Hugrænt misræmi birtist í samstöðu annars vegar og togstreitu hins vegar þegar þátttakendur glímdu við markmið sem stefndu að auknu lýðræði í skólastarfi sem var fyrir, í grundvallaratriðum, ólýðræðislegt. Í glímu við þá togstreitu sem fram kom mátti greina að þátttakendur sýndu merki um aktífisma (RSP3).

Þegar skyggst er heildrænt eftir þeim möguleikum sem fólust í skipulagi Pestalozzi- starfsþróunarverkefnisins í ljósi þeirrar umgjarðar sem vistfræði menntunar leggur til ásamt svörum við rannsóknarspurningunum, þá eru dregnir fram í dagsljósið fimm þættir (sjá t.d. Mynd 31), eða kerfi sem saman mynda ákveðna heild. Þau eru nefnd gildiskerfi (sem snýst um að huga að megin markmiðum hins sameiginlega verkefnis), ímyndarkerfi (þar sem viðkomandi þróa faglega ímynd sína), samskiptakerfi (þar sem þátttakendur þróa samskipti í leit að sameiginlegum skilningi), netkerfi (þar sem þátttakendur stilla strengi til að virða og notfæra sér samskiptin) og valdakerfi (þar sem leitað er jafnvægis á milli stýringar og jafnræðis). Þessir þættir ofnir saman mynda hið margslungna vistkerfi menntunar sem er gagnlegt til þess að lýsa starfsþróun í netheimum og það sem þeir bjóða upp á þegar fengist er við þróun lýðræðislegra starfshátta og hugmynda í skólastarfi.



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## List of abbreviations

AfL: Assessment for learning	
CL: Cooperative Learning	
CMC: Computer supported communications	
CoP: Community of practice	
CPD: Continuing professional development	
CSCL: Computer supported collaborative learning	
HR: Human Rights	
MDT: Moderated discussion thread	
NGO: Non-Governmental organizations	
NL: Networked Learning	
NLO: National liaison officers	
OECD: Organization for Economic Co-operation and Development	
OPLC: Online professional learning community	
PLC: Professional learning communities	
PLD: Professional learning and development	
PP: Pestalozzi Programme of the Council of Europe	
RQ: Research questions	
SDT: Self-Determination Theory	
SNA: Social network analysis	
TASKs: Transversal attitudes, skills, and knowledge and understanding	

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# 1 Introduction: Aim, purpose, and design of the research

## 1.1 Aim and purpose of the research

The research explores developing forms of continuing professional development (CPD) for educators by investigating the characteristics of the participation of education professionals from 50 European countries in an online platform and community of practice (CoP) (Lave, 1991; Lave & Wenger, 1991) developed under the umbrella of the Council of Europe Pestalozzi Programme (PP) for teacher development. Because the community of practice is online and belongs to a teacher development program, the author has chosen to name it an online professional learning community (OPLC). The interaction between the participants in the community is an ongoing conversation at which the research spotlight is directed. Thus, the principal aim is to understand the ingredients of *conversational CPD* that takes place between in-service teachers having a diverse cultural background but sharing the common aim of being able to promote various aspects of democratic principles and understandings within European schools. The research's overall concern is to describe and understand the *affordances of conversation-based online professional learning communities that foster the establishment of an ecology of learning that is conducive to the development of democratic practices in educational settings*.

The literature review showed that conversation-based continued professional development for teachers has been insufficiently researched. The interaction that characterizes the activity in the OPLC is identified as *a conversation*, which is often seen as the most important part of a good educational practice and its nature is the focus of the present study. Teachers within the OPLC seem to be able to learn successfully through *conversation* (Bakhtin, 1981, 1986, 2010; Gadamer, 2001; Laurillard, 2002; Pask, 1976; Sharples, Taylor, & Vavoula, 2016) with peers and moderators, in a distributed environment (Hildreth, Kimble, & Wright, 2000) - the members of the community are interacting across time and distance; they are not co-located - and international context. Thus, a study of the on-line interaction may fruitfully contribute to the understanding of the ingredients of the ongoing conversation and how these may show the benefits the

participants appear to gain from the activity. Such study will also show what motivates participants to engage initially with the community and perhaps also to sustain their engagement. Furthermore, such aims support a better understanding of how a particular networked activity, in which professionals take part, contributes to their learning.

In the context of current policy and practice - that often seems to remain top-down and controlling in terms of educators' autonomy and self-direction, and namely in the nature of practitioners' choice for continued participation in CPD - more agile means of peer-learning are interesting to research. It is our interest to engage educators in a process of lifelong learning and to support their commitment and capacity towards improvement of practice and openness to transformation. Following Korthagen's (2017) findings, that to a large degree, teacher learning takes place unconsciously and involves cognitive, emotional and motivational dimensions, the present study sets out to critically describe these dimensions, and the qualities and properties of practitioners' engagement with regard to the *affordances of OPLCs*, and namely how it should be used and for what benefits. Asynchronous web-based discussion platforms may "assist shared reflection and problem-solving for teachers to discuss their teaching" (McPhee, 2015, p. 107) *when the conditions are there to favor participants' engagement* (thesis author's emphasis). Affordance is here defined as the relational properties, emerging from the interactions between different elements of the system, that support and constrain learners' experience (C. Jones & de Laat, 2016).

The study had to deal with the complexity and scope of the context and data, that mixes such diverse issues as: the international, intercultural composition of participants who arrive with different histories and perhaps engrained assumptions and norms; the professional development context that is unhabitual; the online set up that is also particular due to the conversational nature of its activities; and lastly the complexity of the issue of democracy in education which may not fit so easily in the school curricula, or the culture of school, or institution and their education aims. To address this complexity, the framework of ecology (Crook, 2000a; Jackson, 2013; Siemens, 2007) was chosen to cater to the many parts of the system and the relationships these entertain to form the environment of the OPLC. The *ecology* of the communicative situation is sustained both by context, and by the social interaction opportunities it offers (Fahy, Crawford, & Ally, 2001; C. Jones & de Laat, 2016; Ridley & Avery, 1979). Therefore, an ecology of learning is seen as the space in which an individual's, or a group's learning occurs. Within this ecology, an ensemble



of factors interacted to sustain participants' engagement viewed as a motivated activity (Crook, 2000a) and discursive elements supported dialogical learning (Bakhtin, 1981, 2010).

## 1.2 The problem

The context is unique in that the PP proposed a very special model of professional learning and development (PLD) (Fullan & Hargreaves, 2016), since it came from a strong values base, whereas most other "official" training is greatly oriented towards performativity in the managerial use of the idea of accountability (Biesta, 2004). Favoring educators' empowerment, the PP invites participants to engage on a voluntary basis, and their participation is not externally sanctioned by assessment, grades, diplomas, or any certification; thus, there is *a low level of control and high autonomy for educators to engage*.

This is especially interesting in the context of current policy and practice of teacher education that remains controlling, a context in which teacher education suffers from cuts in resources (Zeichner, 2006) and in which demands on teacher competences are increasing and rapidly changing (Jónasson, 2013). Disputing forces of accountability, and professional standardization in a neo-liberal society, exert pressure on teachers to conform their learning goals with school and district interests (Fenwick, 2003). Commonly, continuing professional development has pressures at national and school levels.

These arise from demands for increased quality and the need to implement the [UK] National Curriculum as well as the impact of public reporting and inspection in education. On the other hand there are needs of individual teachers who may wish to act as far as possible as autonomous professionals (Craft, 2000, p. 5).

In the review of literature, the author will show that most of the existing studies of CPD concern online collaboration in highly structured environments such as online courses, online professional development involving diplomas, certification, exams, and grades. This is a context in which participation is sanctioned or rewarded and thus in which achievement is driven in part by these. In such contexts, the contribution of students is not based on self-paced interaction but should follow a controlled process lead by a teacher. Similarly, the reviewed studies that focus on online training for professional development most often

corresponded to contexts of highly controlled and paced contexts, in which non-compliance is sanctioned and achievement is rewarded by a diploma or other certification.

By contrast, this study relates to a very different context characterized by three major features.

1. The context is exempt from strong constraints such as accountability, standards, and procedures.
2. Participation is entirely voluntary, in which no accreditation or institutional reward for achievement is given to participants and therefore participation relies on educators' personal intentions and responsibility.
3. Interaction is informal, open-ended, self-paced, and autonomous.

Given this threefold departure from the norm, it is of considerable theoretical and practical interest to understand the way this "voluntary conversational professional development" operates and may succeed. Therefore, the study fills a gap in research, to study teachers' *voluntary* engagement in professional development discussions in online environments.

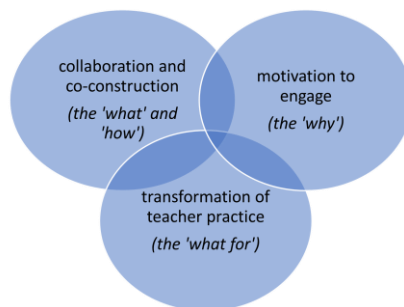
The author has not encountered other moderated professional communities, offered for teachers that are entirely devoted to the development of competences for a democratic culture. Although the integration of democratic concerns such as the development of students' critical thinking and participation in decision-making, is gaining traction in the field, means to support teachers to deal with these and other controversial issues while practicing inclusive education, social justice, and equity in their practice, are not widespread. The current political and societal trends in Europe, and across the globe, seem to question and perhaps doubt the democratic values of our societies. This situation poses a challenge to educational institutions and educational research to place attention on the learning of a democratic culture. How is democracy learned? What type of teaching should education focus on to sustain democracy?

Hartnett et al. (2014) point out that there is little research about how groups, and individuals in groups, can be supported to engage in, sustain, and productively regulate collaborative processes (Hartnett, St. George, & Dron, 2014). Socially shared regulation frames the activity of meaning making, including: kinds of shared content, exchange flow, and awareness

of learning process (Järvelä et al., 2014). Thus, OPLCs are huge opportunities to advance research on these issues and to gather rich data on teacher discourse and representations or mental models, assumptions, beliefs and personal as well as academic theories, to address educators readiness for change (Biesta, Priestley, & Robinson, 2017; Harris, 2010) . This allows for quantitative and qualitative research into these concerns, that are so important to transformative professional learning and development, and perhaps as well the retention of teachers in the profession (Fullan, 2006; Fullan & Hargreaves, 2016).

### 1.3 Research overview and components of the study

To answer these concerns, the study analyses three research questions (RQs), moving from: the activity between participants (“the what”) and its relation to the depth of collaboration and co-construction (“the how”), to the highlighted factors that motivate them to engage (“the why”). It also inquiries about the benefits participants take home from their engagement and in particular what this means for teacher practice in the classroom (“the what for”), (see Figure 1).



**Figure 1 The three significant areas of the study: the “what?” and “how?”, the “why?”, and the “what for?”**

These issues are situated within a wider debate on online learning, on transformative CPD, and on education for democracy. The following three research questions emanate from the current theoretical debate as well as from the context of the research. They are cited here to orient the reader through the complexity of the research but will be developed within a theoretical approach in Chapter 4.

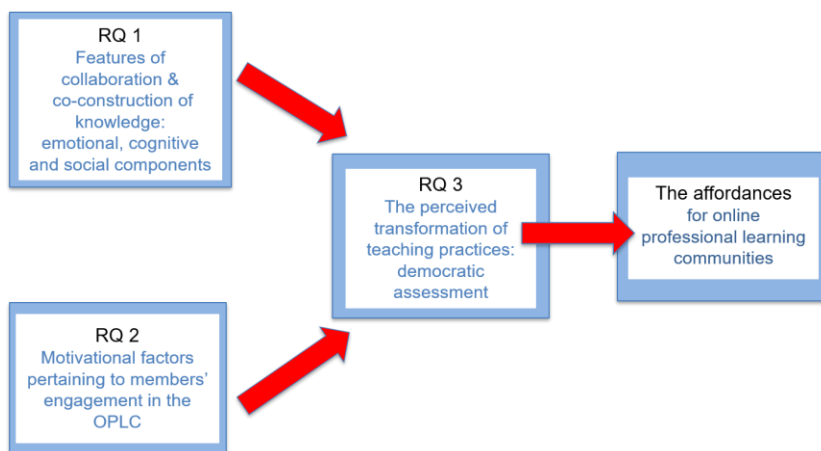
## Research questions (RQs)

RQ1 *What are the features of the activity between participants and their relation to the depth of co-construction of knowledge for professionals?*

RQ2 *What factors interact to motivate participants to engage in the conversation for their professional development?*

RQ3 *What are the benefits participants take home from their engagement in the conversation in relation to the perceived transformation of teacher practice in the classroom?*

Figure 2 shows the three main research questions, which were identified and chosen to form the core of the investigation along the three areas shown in Figure 1. The first question concerns the features of the collaboration to identify elements that support – or impede – co-construction of knowledge among participants. The second research question focuses on the discernible factors and conditions that foster participants’ motivation to engage and uses Self-Determination Theory (SDT) as a basis to investigate the data. The third research question is centered on the dialogic activity between educators around education for democracy and the research investigates how educators’ engagement in the conversation may support transformative action in the classroom and the *co-construction of new practices*, taking the example of democratic practice in assessment.



**Figure 2** The overall design of the research: three RQs to research and identify affordances for online professional learning communities

## 1.4 Structure of the thesis

After a description of the context (Chapter 2), and a first inquiry on the OPLC's position within a map of types of CPD and a demonstration that a community of practice was formed, an explicit point is made about the specificity of the data at hand and the implication this has had on the overall work (Chapter 3).

The thesis is then organized around the RQs. Current theoretical debates relative to the aim and purpose of the research are highlighted (Chapter 4), and previous studies are harnessed towards methodological choices. The method describes the complex multiphase approach to the investigation of the data (Chapter 5); the scope and limitations of the study are also treated in this chapter.

Both the Findings and Implications (Chapter 6) and the Discussion of results (Chapter 7) are organized around the three main RQ and their sub-questions, while the discussion brings together the answer to the overall concern of the research which is the issue of *the affordances of conversation-based online professional learning communities and the 5 structures that were found to support the effectiveness of the OPLC*. The theoretical implications (Chapter 8) are then discussed and opens new perspectives for further research. The Conclusion (Chapter 9) offers the reader a comprehensive reflection around the aims of the research.

## 1.5 Significance of the study

Consequently, the work will redress gaps in theory and practice in circumstances where teacher development is likely to increasingly involve digital learning. Theorists will find insights relative to the framework of ecology to apprehend such complex contexts as OLPCs. The research will also offer insights on the relational properties emerging from online interactions, involving affordances of diverse objects such as technology, resources, cultural and historical artefacts, actors, and their behaviors, thoughts, and ideas.

As well, researchers will get insight on ways to deal with such data, the type of analysis and method to grapple with existing data (that was not generated for the purpose of study). The methodology employed is novel and contributes to the many approaches to analyzing online asynchronous discussions. It is worthy to advance on research using *secondary analysis of existing data* especially in a sphere – digital conversation – in which the amount of data gathered and stored gets larger every day, at great speed.

Also, practitioners, teacher educators and teachers in formal and non-formal education sectors, will find that the research findings may provide insights for designing online learning relative to education for democracy, as well as possibly interest them in engaging in OPLCs in general.

The work may be of interest to software designers since most teachers are not savvy enough about online learning to be able to articulate their needs effectively (Salmon, 2000). Also, the technical design of online spaces affords and constrains the interaction between different elements (actors, ideas, and resources) therefore software design for e-learning is a crucial development in the field of education.

Finally, policymakers and academic leadership, stakeholders concerned with the planning of eLearning, and who consider investing in online conversation and collaboration as a means of PLD, will gain insights into a systemic view of the elements involved in the design of e-learning. Furthermore, the possibility to offer professional development to teachers and other educators, using online tools, is of particular importance for several more reasons on which the significance of this study also rests:

- Teachers can enhance their opportunities for learning using computer assisted learning tools: an online setup can involve teachers in bringing their *real-life activities* into the professional development plan.
- OPLCs offer flexibility and convenience to teachers (Crawford, 2002; Hartnett, 2010), and the asynchronous discussions allow teachers to participate in their own time, when it is most convenient for them.
- OPLCs offer more opportunities to teachers, in rural areas, who may have less access to professional development on democratic practices and human rights. This is of course tributary to teachers' access to Internet.
- Such learning and experience can support teachers, who are under pressure to integrate ICT and computer supported collaborative learning in their teaching, to innovate.
- The conversation offered in the discussion threads allows teachers to engage with peers and facilitators in a social manner and part of this study is to investigate whether this element of socialization plays a role in teachers' motivation to engage (Fahy, Crawford, & Ally, 2001; Hartnett, 2010; Henri, 1992; Preece, 2001). It potentially also offers teachers a wider framework of reference from which to draw ideas, thus widening their exposure to multiperspectivity.

- The situation with the global pandemic of 2020-2021, and the ensuing closures of school and higher education institutions, has demonstrated how online learning has the potential to become pervasive and inescapable in the coming years.

It seems that such an online arrangement of the genre being developed by the Pestalozzi Programme is a most sustainable mode of operation for developing the content and skills in question. As pointed out above, the OPLC relates to context that is unusual: the participation is exempt from external sanctions: the participation is entirely voluntary and no accreditation or reward for achievement is given to participants. Therefore, it fills a gap in research but also supports the author's argument that conversation in *more informal settings* can be an important device for teacher education. Teachers who undertake professional development undertake a wider array of teaching practices and are more likely to co-operate with other teachers (Organisation for Economic Co-operation and Development, 2009). If the association between exploring new practices and professional development have been shown to be linked (ibid.) it is less clear what the association between motivation and engagement in peer collaboration and trying new practices could be.

## **1.6 The researcher's professional journey frames the research**

Democracy is for me a passion that is very much integrated in my personal identity and experience. As the child of a political refugee, at a very young age I was already immersed, through my family and its social circles, in a world where dictatorship and political violence was a truth to behold. For example, at four years old I already knew what the term "dictator" meant and could express what kind of leaders were Francois Duvalier (alias "Papa Doc", 1907-1971) and his son Jean-Claude Duvalier ("Bébé Doc", 1951-2014), both "president for life" and Haitian dictators, in vivid and expressive ways. Following in the footsteps of my father, an officer of the Human rights Division of the United Nations, I became as an adult, an active professional in the field of human rights and democracy, and rule of law.

My interest in professional development, reflective practice, and socio-constructivist and connectivist approaches, stems from my many years of professional practice as pedagogical consultant and director of studies for adult learning in diverse settings in Europe and the United States. Initially educated in the fields of social psychology, anthropology and sociology, my work in diverse settings (NGOs, Higher Education Institutions, Ministries of

Education, International organizations such as Council of Europe, UNESCO, European Commission) with adults, first in lifelong learning programs and then in teacher education programs, has been an enriching experience that has built my conviction that reflective practices are an essential aspect to nurture if one is to consider improvement in education systems and their purposeful delivery. My long-standing activity in action research has also strengthened my belief that peers as “critical friends” play a crucial role in developing knowledge, skills and attitudes that sustain a disposition for inquiry and an agentic capacity in professional and personal contexts.

A turning point was my experience of 12 years, leading teams and researching as pedagogical consultant for the Council of Europe’s Pestalozzi Programme, the organization’s flagship program for education professionals. During this collaboration, I started realizing the enormous potential of such arrangements for professional development in general, and for educators particularly. The activities I conducted in my position as pedagogical consultant and lead moderator in the studied program were specifically aimed to invite participants to become critically reflective about their positions in society and the possibility for them to engage in social transformation.

I therefore proposed to the program heads to design an online platform to gradually build a network by keeping alumni of the program in the loop and involved in continued reflection. This is how, from 100 teachers and teacher educators, the platform developed into a thriving community of over 2000 practitioners today. I started researching CoPs (Lave & Wenger, 1991; Wenger, 1998), which considerably modified and re-oriented my work as pedagogical consultant of the PP and lead moderator of the Pestalozzi platform and community: I started implementing a new style of leadership and hosting. This contributed to a transformation of the community that became more centered on reflective practices, critical friendship, action research and self-awareness. The questions of *common purpose, shared culture and language, professional identities, values and congruence between values and practice* came to the forefront of my practice as pedagogical consultant and moderator of the online professional learning community.

Considering my past, and my involvement in the program, it is therefore important to examine my position within the research. Although this is not a participatory research, the researcher is involved in the researched program. It is important to highlight that my decision to engage in research on the topic of this community, and namely the PhD project, came *after* the



sponsor of the community (The Council of Europe) ended the program. Therefore, there were no “competing agendas” where my research objectives and perspectives would have possibly been at odds with participants’ objectives, wishes, orientations. Nonetheless, the data that the research is based on is the activity in an intense community of practice and some part of the analyzed data was data that I produced, between 2012 and 2017, when actively involved as lead moderator. Furthermore, the second researcher and coder involved in the analysis of the data of this research Gudrun Ragnarsdóttir (whose role is described in the Methods chapter), was also a participant, trainer and moderator in the Pestalozzi community.

This proximity presents advantages and also challenges. Advantages are there in terms of knowledge of the setting, the history and context, access to the actors and the data, knowledge of the actors’ activity in the network. Challenges are possible interpretative bias. However, such challenge is always the case in any research project, wherever a window of interest opened by the researcher guides the investigation. Nevertheless, I fully acknowledged the need to pay specific attention to possible such subjectivity and took some precautions in that direction: multiple coders, co-authoring, cross checking with stakeholders of the OPLC.



## 2 Context and background

This chapter describes the program, its participants, its pathways, and its institutional, international, pluri-lingual aspects. Here, the author aims to describe the workings of the OPLC before moving forward. This description aims to help the reader's imagination of the space and place that the study is dealing with and render the reading more concrete and the research more "real". It has been a repeated experience of the researcher to observe how difficult it is to imagine the Pestalozzi Programme space because it is unusual; for example, one commenter of the study labeled the OPLC as something "weird". These experiences ultimately lead the researcher to carefully describe the OPLC in detail at the start of the thesis.

International trends on educational policies are shaped by the processes of globalization (Organisation for Economic Co-operation and Development, 2016), in a constant dynamic interaction of global ideas about school practices and local school systems. Nations continue to independently control their school systems while being influenced by this superstructure of global education processes (Spring, 2009). Within this global educational superstructure, and the current globalized teacher education context (Lee & Brett, 2015), the following institutions and intergovernmental organizations emerged as relevant stakeholders: World Bank, Organization for Economic Co-operation and Development – OECD, World Trade Organization – WTO, United Nations, UNESCO, European Commission and Council of Europe. This *educational superstructure* is characterized by global flows of ideas, institutions and people enabling the development of global networks (Spring, *ibid.*). It is supported by communication and information technologies that offer easy exchange of information and ideas about education, its policy and practice (Mompoin-Gaillard & Rajić, 2014). Such globalized ideas, and their associated policies, have become influenced in the wider international context by a neoliberal agenda centered on performativity and a managerial understanding of accountability. The PP questioned this position and aimed to offer another framework as a response to these neoliberal leanings.

The individuals engaged in the OPLC will be referred to as "*participants*" and "*members*". Although these terms are used rather interchangeably, the term "participant" will be more oriented toward analyses pertaining to

specific interactions and activity on the online platform, whereas the term “member” will more specifically refer to membership in the community, to evoke belonging and membership to a group.

## **2.1 The Pestalozzi Programme for the development of education professionals**

In 1949, the Council of Europe (CoE) was founded, by 10 countries, to develop throughout Europe peace, human rights and democratic principles (Council of Europe, 2016). The CoE today considers itself as “the continent’s leading human rights organization” (Council of Europe, 2020b). It includes 47 member states, 27 of which are members of the European Union. All CoE member states are signatories of the European Convention on Human Rights. The primary aim of the Council of Europe today is to create a common democratic and legal area throughout the whole of the continent, ensuring respect for its fundamental values: human rights, democracy, and the rule of law. These efforts are implemented within different areas such as political, legal, social, media, and educational arenas.

### **2.1.1 What is the Pestalozzi Programme?**

Under the umbrella of Council of Europe, a program originally called the “Teacher Bursary Scheme”, has been known since 2005 as the “Pestalozzi Programme” (PP), after the educationalist and writer, Johann Heinrich Pestalozzi (1746-1827). It was developed in 2005 as a training and capacity building program for education professionals, until the end of 2017. The PP was conceived as a means of recognizing the importance of education and teacher education in supporting, trainers, teachers, and other educational actors in their role as professionals in the heterogeneous and multicultural societies in which we live. Through the opportunities it provided to bring teachers together to work collaboratively on projects of shared thematic and pedagogic interest, it contributed to a strengthening of personal and professional relationships across the continent. As well, it aimed towards an increased awareness of the key role of education in promoting respect of human rights (HR), democracy and rule of law. Building as it did on the long tradition of teacher training bursaries at the Council of Europe, it was developed to respond to the challenges highlighted within the Third Summit of Heads of State and Government of 2005, that called for a concerted effort by the Council of Europe to ensure that its values enter into the practice of education and to support member states in the move from education policy to education practice in line with these values. They

emphasized the key role of teacher education in this process and from then on, the PP was designed as a bottom-up approach that gave responsibility to educators for living democracy in the classroom.

The PP is thus based on the intention to empower education professionals to contribute to constructing a more humane, inclusive Europe, i.e., to develop democratic participation, respect for diversity and enhanced social cohesion (Council of Europe, 2016). It used different approaches to achieve its goals offering training to education professionals to become multipliers, and it:

- developed the necessary “transversal attitudes, skills and knowledge for sustainable democratic societies”,
- promoted and modelled appropriate and effective pedagogy, e.g., developing competences for democratic culture by supporting students’ critical thinking, dealing with controversial issues, practicing inclusive education, equity,
- initiated, followed up and monitored a cascading process on the national level,
- networked education professionals – as a key profession – across Europe into a community of practice. (Pestalozzi Programme, 2017).

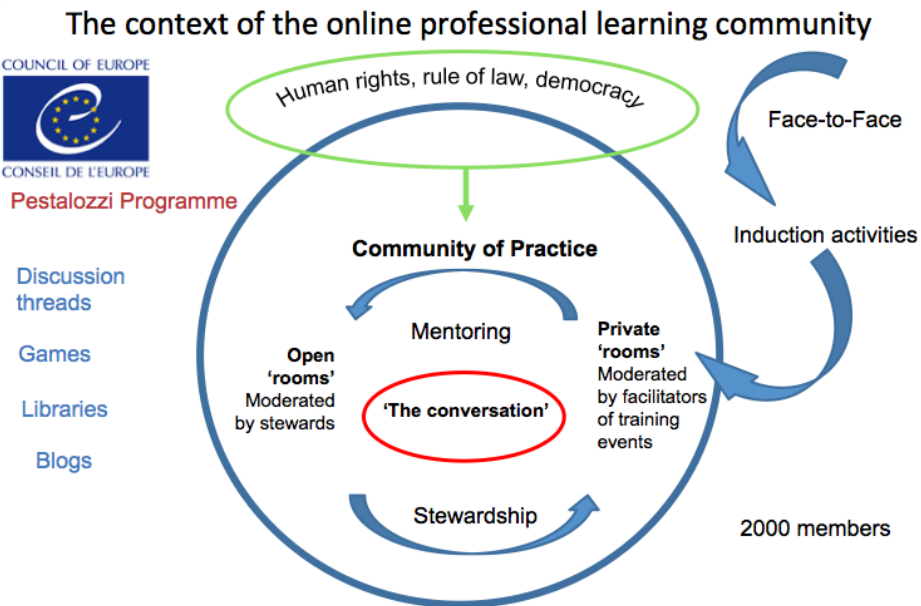
### **2.1.2 Who gets in the program?**

Because all participants in the program are representing their national context and are professionals having capacity to implement pedagogical approaches in their schools and higher education institutions, they each bring in the program their local education contexts. Participant profiles are diverse: a variety of actors are at play, such as teachers, academics, teacher educators, school heads, Ministry of Education staff, Non-Governmental Organizations (NGOs). Their ministry or other liaison institution selects participants who are then registered by the program’s administrative body. This is an important point as it may influence the type of actors who get in the program: perhaps more informed persons or persons closest to the official liaison institutions may be favored for selection. The PP trained some 12 to 1500 educators per year. Participants’ expectations at entry are collected and a survey produced in 2015 reveals several motives such as the desire to meet colleagues from other countries, desire to learn more about HR and education for democracy, hope to gain new insights and innovative methodologies to use in daily practice of teaching. More about the

participants of the OPLC and the challenges they meet as they encounter transnational ideas about education, is provided in section 2.4.

### 2.1.3 What is the pathway to the OPLC?

There is a single pathway of entry into the Pestalozzi OPLC (Figure 3). Participants enter when they join stand-alone or modular training and are subsequently invited to participate in the community. The program’s process and pathway *lead from face-to-face training and induction* into the online community to *online-only activity*. Thus, the PP provides a blended-learning setting but this only partially: the online component can be considered as e-learning on an online stand-alone platform. Although the face-to-face aspect remains important and perhaps shapes, in part, the ecology of the OPLC, the study does not aim to say much about the influence of the face-to-face component. This is a possible limitation of the study, although it is mitigated by the fact that most participants engaging in the conversation, in the unrestricted space of the platform, have never met face to face, since they did not necessarily attend the same CoE events.



**Figure 3 The context of the online professional learning community (OPLC): the single pathway to the OPLC**

Participants first collaborate in their “private rooms” (each training is allocated a restricted space). Each of these private/restricted spaces can be considered as small CoPs of twenty to forty participants. There, professionals develop their specialist competences on singular thematic areas (prevention of violence, prevention of discrimination, sexuality education, intercultural education, history education, media literacy, competence-based approaches to HR and democracy, etc.) and are then invited to step out of their small CoP to enter the wider CoP and may join in “open rooms”, open to all members of the community (2000+ members). Throughout the face-to-face training, they are supported by the team of facilitators, who act as coaches on the platform; then if they (the people we have data on – those who participate in the conversation) continue to participate after the training, they are supported by the team of ten contracted moderators called “stewards”. Moderators play a crucial role that is investigated closely in this research. They perform tasks such as welcoming newcomers, editing summaries and posting prompts, asking questions, giving tasks, and developing strategies to engage members in the conversation, generally fulfilling a role to ensure inclusion and to make sure all participants get feedback on their activity.

From this point on, participants have the agency to create the spaces that they deem useful for the development of their practice (blog, pages, videos or images, discussion fora and rooms or groups). This is how, for example, starting 2013, especially active participants created and moderated “country rooms” - called “Cascading rooms” and *Pestalozzi Corners* (in Belgium, Bulgaria, Croatia, Cyprus, Germany, Greece, Hungary, Iceland, Italy, Netherlands, and Spain) with the intention to pursue the program goals in their country. Finally, such active members created “language rooms” (French, Greek, German) to gather participants from different countries, but working in the same language.

Finally, the PP is a gathering of members from 47 European countries with different language proficiency in the lingua franca (English). This diversity of participants indicates the *international and intercultural context* of the present research (see section 2.4.2 and 2.4.3). Participants work in diverse education systems and enjoy dissimilar histories and experiences of democracy. Also, language proficiency is an issue that is very present in the online conversation of the program’s OPLC, with varying possible effects: for one, the plurilingual context creates increased chances of misunderstanding in an environment that uses English as a *lingua franca*; but also, these plurilingual characteristics may push participants to *explain meanings* more clearly for mutual comprehension of ideas and concepts. In

either case they constitute a challenge that the researcher has had to deal with continuously.

## **2.2 The C in OPLC: are we in the presence of a community?**

How is the Pestalozzi OPLC a community? Dillenbourg et al. (2003) warned to use the term parsimoniously. Communities are not fixed entities but a dynamic process (Dillenbourg et al., 2003; Preece, Maloney-Krichmar, & Abras, 2003). An online environment does not constitute in itself a community: one might consider the term a “label of quality” relative to the group activities, specifically characterizing intense connected interactions (Dillenbourg et al., *ibid.*).

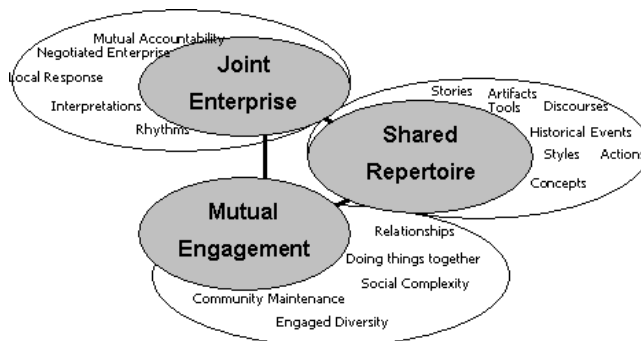
The term community of practice (CoP) has long ago surpassed its original idea of apprenticeship model where soft knowledge is transferred through situated learning (Lave, 1991). Diverse characterizations of such communities are recognized: task-based communities of learning, practice-based (Riel & Polin, 2004), and knowledge-based communities of learning (Barab, Makinster, & Scheckler, 2004) for example. The OPLC is a geographically distributed community that is non-context based (Crawford, 2002) shared by different stakeholders (teachers, head teachers, principals, university staff, NGO staff, National Liaison Officers, and other education professionals). In traditional educational situations, all learners are required to learn the same thing at the same time:

Communities of practice have the following components that distinguish them from traditional organizations and learning situations: different levels of expertise that are simultaneously present in the community of practice; fluid peripheral to centre movement that symbolizes the progression from being a novice to an expert; and completely authentic tasks and communication (C. M. Johnson, 2001).

The Pestalozzi OPLC seeks to provide opportunities for collaboration through community building, knowledge construction, learning (by doing and telling) and learning together. But more importantly it is a *values-based community*. Depending on the role played by the individual as a member of the wider team, learning within a community can be either a positive and proactive or a passive experience, where the collective wisdom of dominant members of the group shapes other individuals’ understanding of the community and its roles (Kennedy, 2005), its norms and values.



The sections below, organized around the key components of CoPs (Wenger, 1998) as shown in the diagram (Figure 4), describes how the offerings of the OPLC are situated in the map.



**Figure 4 Key components of communities of practice from Wenger, 1998, p.73**

### 2.2.1 Joint enterprise, shared repertoire, mutual engagement

The Pestalozzi community federates goodwill around a joint enterprise that is a *shared vision of what the purpose of education should be*. Teachers state their intention to transform practices from a traditional stance to learner-centered approaches to nurture a democratic environment. The CoE stresses that while today's education systems tend to focus on 1) the maintenance of a broad knowledge-base (the CoE defines knowledge here as pertaining to the content of curricula) and 2) the preparation of young people for the labor market, today educators have an important role to play today to change this vision of education and consider that education also caters to two additional objectives: 3) the preparation of young people to become active democratic citizens in our societies and 4) the personal development of the individual (Council of Europe, 2020a). They strive to find responses to the challenges posed today to our democracies by phenomena such as discrimination, violence, and violation of human rights. Democratic governance of schools, education for democratic citizenship and intercultural competence are at the center of the issues that are part of the everyday conversations that teachers hold on the platform.

**Shared repertoire** - Members of the OPLC, in the process of learning with their peers, in their distributed workplace, negotiate meanings about what their joint enterprise is. They share, through the platform, stories of their practice, of what happens in the classroom when they try out new methods and design new lesson plans. In the process of sharing their stories, participants, members of the community, start developing a

common body of concepts, knowledge, and *lore*. A common language developed also with a shared “lexicon”, that is not merely a jargon but rather a “repertoire” (Wenger, 1998), which helps negotiate meaning across languages and understandings.

In the process of learning with their peers, participants negotiate meanings about what their joint enterprise is. Teachers are thinking about learning and teaching while engaged in specific actions in actual contexts. At the heart of the community is the co-developing of answers to issues of educational practice by discussing, exploring, and developing workable solutions together with practitioners and other partners.

The first characteristic of practice as the source of coherence of a community is the mutual engagement of participants. Practice does not exist in the abstract. It exists because people are engaged in actions whose meanings, they negotiate with one another. (Wenger, 1998).

A particular focus of this research will be to investigate situations when participants try out new methods in their teaching by “transforming the training into informed and competent actions through their practice” (Mompoin-Gaillard & Rajić, 2014).

### **2.2.2 Community life cycle**

Further characteristics of communities of practice also apply to the OPLC. Every community has a natural lifecycle and communities appear to have common patterns of affiliation. Haythornthwaite, Kazmer, Robins and Shoemaker (2000) state the following stages of community development: initial bonding, early membership, and late membership. In the initial bonding, newcomers join the OPLC when they are either recruited by one of the local dissemination groups (this is a minority) or they arrive through the channel of the Council of Europe application process, when they apply to a face-to-face training event or course. When a newcomer arrives, (s)he meets coaches and peers in a closed room and performs inductive activities (games such as treasure hunts, creative self-presentation activities, etc.). From the beginning and during the early membership, the new member will also have access to the open rooms of the platform, but observation shows that in most cases, it is only in a second step that *certain* members will latch on to the concept of the OPLC and perceive a benefit, for themselves, to participate in the open spaces.

For the first months of their participation members will mostly interact, face-to-face and online, in a context of blended learning, with other practitioners who have applied to a training session and thus share common concerns or interest for a theme. The members who arrive in the OPLC through a co-located event (where they meet their peer “in the flesh”) tend to share a common identity amongst themselves within the wider community. Although it is not the object of this research, the author assumes that the face-to-face encounters help the evolution of the community to be quicker and stronger (Hildreth et al., 2000).

Finally, in the phase of late membership members join different rooms and start opening their own discussions on topics of interest. Thus, they get involved in design and creation of the space, taking ownership of the ideas and issues present in the CoP, contributing to knowledge production by taking on different roles of moderators, critical friends, or participants in different discussions.

When a member joins, (s)he is part of *the periphery*. However, peripheral roles play an important part in the CoP “by developing and using skills that require collaboration and mixing different types of expertise” (C. M. Johnson, 2001). As (s)he engages in the courses and online activities and completes the course (s)he has then a choice to move to *the core* of the community by starting to share resources and stories of “doing teaching”, or to remain in the periphery either as covert company (Haythornthwaite, Andrews, Fransman, & Meyers, 2016) or by leaving the community altogether. It is worth noting that most members never delete their account, but this is not a show of their fidelity, there are no ways of measuring the frequency with which members visit the platform except by counting anonymous views. Successful communities can sustain themselves over multiple generations of members without becoming brittle. As communities continue to exist over time, embracing new members, switching roles, creating tools and expanding activities, they are in fact learning from their experience (Riel & Polin, 2004).

Considering all the points made, the OPLC stands well within the criteria to define it as a community.

### **2.3 The OPLC as a technical space**

The Pestalozzi OPLC is hosted by the social media platform [www.Ning.com](http://www.Ning.com). The author distinguishes the OPLC from other platforms that are “devoted to learning’ such as [www.moodle.org](http://www.moodle.org) or MOOCs, because it has the definite function of *a social network platform* (resembling for example Facebook)

and not a course integration type platform that is usually highly constrained, less social, and sometimes even invasive when the user's every move is tracked and recorded, as a means of control, and hence of domination (Payne, 2005), of power-over the learner. As in all online social media, the Ning platform has a design that shapes the interaction that can take place in that given space. In other words, a platform is the technical support for what a community does or can do. It includes the main activities that are promoted, and the spaces, which need to be created and in which the activities can take place. These aspects are translated into technological features, which in turn are determined by the technical base adopted for the community.

### **2.3.1 The platform as a “physical space”: difficulties in navigation**

The Ning platform was coded, designed and tailored to better fit the needs of the OPLC: the core content was organized in specialized groups or “rooms”. The label “room” was used to embrace the on-going metaphor of a building used for the design of the platform. Rooms are linked to projects of the Pestalozzi Programme. Participants in activities of the Pestalozzi Programme are invited to become members of the OPLC through an induction process already described (in section 2.1.3), in rooms that are accessed on invitation only and deal with a specific set of ideas and members in order to successfully achieve the trainings/projects goals. Thus, each closed room constitutes a small community of practice in its right (20 to 30 persons), and one could qualify them as “*nested CoPs*” within the wider CoP that we name OPLC.

After two years, changes on the platform were made and “*open rooms*” were created to insure further communication, collaboration and professional learning. Open rooms (public spaces, available to all participants) exist for the benefit of the community at large. The present research focuses on the conversation happening in these open spaces since there is little interaction between closed and open rooms, and the closed room focus mainly on training.

Between 2010 and 2015, four open rooms were accessible to every member without invitation, where discussions and exchanges of interest to the whole community took place: in line with the metaphor of “the building”.

- Reception – for welcoming, guiding, and orienting new and experienced members through different actions; including announcements and updating members on recent developments.

- Coffee Shop – for informal discussions, social bonding, and exchanges beyond the purely professional.
- Professional Development Room – for moderated discussions on topics of professional interest.
- Cascading Room – for exchange of information and mutual support regarding the dissemination and cascading on the local, regional, and national levels. A moderator or another active member of the OPLC may open such rooms and then is designated as group administrator. Each person responsible for a group of members supports the activities and actions of the members of the group.

After one year the team of moderators conducted a feedback survey. Members voiced that they were “getting lost” on the platform, that the amount of activity was increasing, and things were getting harder to find and follow. As a result, the team made the decision to maintain only two public rooms and closed the Reception and Cascading rooms.

### **2.3.2 Technical spaces and features: affordances and constraints**

Although the study mainly focuses on the discussion threads, the author acknowledges that *the ensemble of features constitutes the conversation*. The Ning platform offers further technical tools to create an integrated web of appropriate spaces and adapted features: we already presented the “rooms” but there are also:

- comment walls where all postings are just piled on top of each other, and allow for unthreaded conversation (no structuring of the exchanges are possible, as opposed to fora);
- libraries of textual, image and video content: each posting (photo, video, document) comes with its own forum;
- blogs, pages, each with a forum;
- member profile page with a forum;
- internal email for private messaging;
- and a chat function that was quite active and featured very light communication with short messages, composed mostly of greetings, celebrating achievements, birthday wishes, etc. (Noteworthy is that the platform advertised birthdays daily and prominently).

Fora are available in most spaces: each page comes with a forum featuring discussion threads.

Particularly *missing technical functions* on Ning.com were *tagging* participants and *liking* comments (only a whole discussion thread could be liked). This is particularly important to state because such function would have a great deal of impact on the social interaction and the community's conversation: for example, liking and tagging are easily conducive to bandwagon behavior and outcomes such as cliquishness (Dron & Anderson, 2014; Granovetter, 1973; Ren, Kraut, & Kiesler, 2007), that may result in reduced collaboration (D. W. Johnson & Johnson, 2009a).

## **2.4 The OPLC's human space**

### **2.4.1 Participants' profiles**

The participants have different professional experiences and expertise within the field of education; they are teachers, teacher educators, policymakers, and NGO staff (Table 1) who work at different school levels, all from kindergarten to higher education, and the vast majority practice in Europe. Participants in the OPLC are all alumni who have followed the Council of Europe Pestalozzi Programme Modules for Trainer Training, Summer Schools, and/or the workshops and national events (if the organizers so wish). Participants of these events meet face to face once or twice. For this reason, some participants – but not all - have met in person in smaller groups. Therefore, some of them know each other and others have never met.

Also, national liaison officers (NLO) operate as links to government authorities (Ministries of Education, Ministries of Foreign Affairs, pedagogical institutes, etc.) and meet face-to-face every 18 months. A few participants are involved in other PP activities such as research and development projects; they are invited to attend one or two ad-hoc face-to-face meetings. Finally, participants in local (national or regional) groups dedicated to the dissemination and cascading of the PP meet within their local education contexts. During PP international/local workshops, groups may gather a mix of national and international participants.

Participants share the particularity of having all been sensitized to the issues of human rights, social justice, and democracy in education. Participants have been inducted into the online platform thought activities offered during the training sessions. They have been educated in methodologies that enhance student participation and democratic culture in education: student centered approaches, cooperative learning, changing posture from teaching to learning, formative assessment and assessment

for learning, emancipatory action research, prevention of violence and discrimination, intercultural competences and multiperspectivity. They therefore arrive to the conversation in the OPLC with *a frame of reference that has been nurtured through their participation in the program*, even if they may still struggle with some of the ideas.

**Table 1 : Types of participants enrolling in the Pestalozzi Programme (PP)**

	<b>Participants in the international training activities and courses</b>	<b>National liaison officers (NLO)</b>	<b>Participants in local, national or regional training activities</b>
Who	Teachers, teacher educators, school leaders, NGO staff	Staff of Ministries of Education, Ministries of Foreign Affairs, pedagogical institutes	Teachers, teacher educators, school leaders, NGO staff
When	Meet once or twice for 4 to 9 days	Meet for 1,5-day periodic meetings (18 months)	Meet for 0,5 to 2 days
How	Appointed in some countries, Self-registering in others	Appointed	Self-registering, Re-accreditation scheme, Voluntary participation in cascading events
What	All residential, both one-off training (four to ten days), and long-term modules for action research (18 months)	Administrative meetings, and strategic planning	Rarely residential, mostly one-off training Long-term in the case of voluntary cascading

Notably, some participants have been involved in projects with the program that focus on each person’s individual responsibility towards the creation of democratic environments with many activities centered on the development of competences for democracy, defined as a set of attitudes, skills and knowledge (TASKs) for students and teachers (Huber & Mompoin-Gaillard, 2010; Mompoin-Gaillard & Lázár 2015, 2018). These

themes are further developed in Chapter 4, section 4.5. Therefore, PP participants are not your usual “run of the mill” teachers and educators: they have developed an awareness of individual values, attitudes, dispositions and behaviors that enhance - or impede - the nurturing of a democratic culture in a learning environment.

## **2.4.2 Intercultural and plurilingual circumstances of the OPLC**

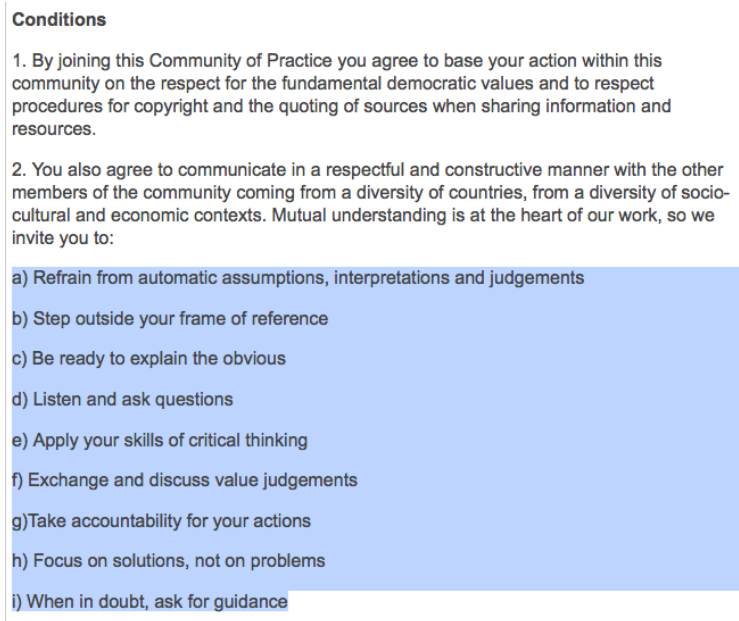
Participants work in diverse education systems and enjoy dissimilar histories and experiences of democracy. For example, Eastern-Europeans experienced enormous changes in their education systems after the fall of the Berlin wall and were engaged in widespread reforms namely about curriculum and teacher education, (more than pedagogy). At times, within the face-to-face training, dynamics of power have clearly played out between Western-European and Eastern European participants, with the latter seeing the former as more “advanced”. Possibly this resonates in some way with the corollary bias of participants from the more “established” nations, but this is never made explicit in the conversation on the platform.

Communication is led in English. Even though participants have expressive writing skills in English, it is a second or third foreign language for most. Therefore, it is at times challenging for participants to explain ideas clearly, and it is very easy to misunderstand each other. Such situations were apprehended by moderators, and for this is reason a charter of online communication was proposed and made visible to all members of the community, stipulating “nine rules of communication” to ease the collaboration as presented in Figure 5. These communication guidelines may also contribute to the creation of a community *microculture*, and this is further developed in the next section.

Nevertheless, varying language proficiency has several possible effects: for one, the plurilingual context creates, as mentioned above, increased chances of misunderstanding in an environment that uses English as a *lingua franca*. This issue is discussed amongst moderators, in the “staff room” (room on the platform dedicated to moderator-teams:

X. is often difficult to understand because she makes complicate sentences [sic] that are beyond her English language skills, instead of sticking to short straightforward sentences. (Personal communication, 2015)





**Figure 5 Screenshot of an extract of the charter**

Nevertheless, these plurilingual characteristics of the community may push participants to *explain meanings* more clearly for mutual comprehension of ideas and concepts. In either case language constitutes a challenge that the researcher has had to deal with continuously.

### **2.4.3 Microcultures**

As previously established, different spaces on the platform can be referred to as *nested CoPs*: smaller closed groups working on specific themes and specialist content (for example, Democracy and history education, or inclusion and language diversity, or sexuality education in relation to human rights...). It is interesting to note that each of these CoPs harbored a shared culture that was created through the daily interaction under the stewardship of moderators. Some evidence of this is participants' expressions of regret when the moderator-team decided to close two rooms to enable easier access to content (see 4.2). Participants expressed that they liked these rooms, they had gotten to know each other, knew their interests, and had their ways of doing things, knew what to expect. When thrown out of their rooms and invited to new ones they had to readapt, make new friends, find new habits, understand rules, and

traditions. Eventually they had to mourn the loss of the *micro-culture* that they had collectively created for themselves. Possibly power struggles were also nearby, with some participants (and moderators) consequently losing any leadership roles that they might have established in their own nested CoPs (see section 2.3.1).

Along with each nested CoP's micro-culture, we observe that the charter (figure 5) proposes guidelines and rules of communications that *become a backbone for a whole community micro-culture and establishes an expectation of intercultural communicative competence* (stepping outside of one's frame of reference, being aware of our own bias and assumptions, etc.), as well as a framework for a *democratic culture* (critical thinking, individual accountability, etc.). The concept of micro-culture is further developed in the Conceptual and Analytical Framework, in Chapter 4.

#### **2.4.4 An "extended" human space**

Participants are present on the platform and through their discourse they bring other presences in the humans that they write about colleagues, students, school heads, and very often parents of students. This creates an extended human space in which the social actors of their school and/or higher education institution participate vicariously in the conversation. The author will come back to this point at a later stage when considering discussion points. As explained in Chapter 4, this range of elements is an operative consideration for determining the optimal conceptual framework for the study, apt to negotiate *the investigation of such a complex context with its social, psychological, technical, political singularities*.

### **2.5 Theoretical underpinning of the Pestalozzi Programme: What is education for democracy? What is a democratic culture?**

Dewey, Rogers, Pestalozzi, Rousseau, Illich, and Freire were the most referenced thinkers in the PP, in which emancipation and freedom of thought were main concerns. Learners generate knowledge *from their experiences* and many scholars, educationalists share this view. First, according to the program's namesake, the "teacher of the heart", Johan H. Pestalozzi, the focus was on ideas of experience-based and child-centered education constructed around a holistic pedagogy focusing on the development of the intellectual, affective, and active ("the head, the heart and the hand"); that is, every faculty of the learner is addressed. Pestalozzi's (1894) theory postulates that every child could, without

exception, attain the highest level of education and development, if this child is viewed as a whole and given the freedom and the independence he or she needs to develop.

Leclerc, citing Rousseau, proposes to let a learner "... not learn science, but invent it. If you ever replace reason by authority in his mind, he will no longer reason; he will become nothing but a plaything for others' opinions. (Émile ou de l'éducation, Book III, p. 173)" (Leclercq, 2011, p. 63). Thus, developing critical thinking and creativity are ingredients of pedagogies for education for democracy. With varying approaches reflecting various foci amongst the many aspects of teaching and learning, Paulo Freire (1970), highlighted the political function of pedagogy and, thus doing, qualified the term pedagogy with adjectives such as critical, conflict, liberatory and gender, etc. Piaget's (1963) notion of accommodation was stressed as important since going beyond assimilation of knowledge to transform one's mental model plays a significant part in creating the conditions of participation in democratic culture. Also, Vygotsky's (1934) notion of proximal development was part of the program's theoretical scaffold, underlining that children also learn socially, going from the social to the individual through collaboration and cooperation (see also the discussion on cooperative learning, in this section) and emotional development.

Practices replacing transmission of factual knowledge were promoted in the PP's training events, replacing it by the construction of knowledge that is discussed and invariably challenged. Moving from individual learning to group research, which is itself backed up by individual research and reflection, and offering complex, motivating learning situations, and dialogical approaches to learning, are examples of such practices.

A set of competence-based tools were proposed as a foundation for education for democracy. A *complex competence-based model* for learners and teachers, the "Transversal attitudes skills and knowledge for democracy - TASKs for democracy" (Mompoin-Gaillard & Lázár, 2015, 2018), served as part of the pedagogical framework. It was used to describe the expected learning outcomes of activities regarded with different "entry points" such as citizenship education, human rights education, language education and also other school subjects (Lázár, 2015b). The indicators of the model, or components of competences, and observable behaviors demonstrating competence for democracy, were further translated into the components all education professionals, whatever subject they might specialize in, need to develop in themselves and contribute to developing in learners. Recognizing that change in "education comes sluggishly, and that

the process of curricular development is one that customarily mirrors societal change” (Mompoin-Gaillard, 2015a), that it will take time for schools to change the content of teaching and the methods employed to teach youngsters, the program imagined devices to “piggy back” on the existing curricular structures. The rationale behind the strategy was that teachers should not be led to think that they cannot act while we anticipate substantial changes in education policy or curricular reform.

Other theories complete the Pestalozzi Programme framework, with cross-curricular and transdisciplinary approaches, hidden curriculum, evaluation and assessment for learning, whole school perspectives, seen as each having potential to support the development of education for democracy. Among these, the concept of Cooperative Learning (CL), its theory and principles (D. W. Johnson & Johnson, 2011; R. T. Johnson & Johnson, 1999; Kagan, 1989), permeated the PP approach to learning *through* democracy. Chosen for the preventive potential it has in practice, the 4 principles of CL are considered entry points to democratic practice:

- equal access or every learner to participation,
- simultaneous interaction where the teacher is not the center,
- positive interdependence between learners instead of competition,
- personal responsibility, and individual accountability.

When teachers integrate learners’ diverse abilities, discrimination and inequity are eliminated or reduced and access to learning and achievement is equally attainable for all learners. Thus, CL is a powerful contribution to the prevention of discrimination in education and, in the long run, to democracy in an inclusive society (Arató, 2015; Aronson, 2000; Barrett, De Bivar Black, Byram, Gudmundson, et al., 2018).

## **2.6 CPD models within which the Pestalozzi Programme fits**

This section is interested in outlining what kind of CPD this research is about. It presents CPD models and places the PP within a map of CPD to specify *what kind of CPD this research is about and which it is not concerned with*. Fullan’s (2006; 2016) argument, when applying change theory to the “proliferating’ professional learning communities” (PLCs) (Fullan, 2006, p. 6) is that they have potential for quality CPD, but that the “theory of action underpinning PLCs is not deeply enough specified by those adopting PLCs” (ibid.), and so risk falling short of getting expected results. This guides us to delve into the question of models of CPD that may bring elements towards such a theoretical point of view. Before moving forward, it is useful to

consider the PP and place it on a map of typologies CPD programs. The author therefore relates different CPD models with the PP characteristics.

### **2.6.1 Transformative, community, action research.**

The PP recognizes the need to develop and foster both collaborative professional *learning* - understood as the acquisition of content, data, tools and methods - and professional and personal *development*, understood as growth in the areas of values awareness, mindfulness, enjoyment, commitment and building of positive and stable identity (Fullan & Hargreaves, 2016). The distinction places as much importance on teachers' need to develop their competences and practice and, on their willingness to do so consciously by considering the values that they may embody – or not – within these practices. In this respect, it is considered a transformative model of CPD. This is exemplified in this participant's experience of the PP: following her participation in the programme, she published an action research relating to how she developed a course on the prevention of racism and covert discrimination for pre-service teachers in her university:

Moreover, the collaborative method demonstrates, in this and in other studies (Huber & Mompoin-Gaillard, 2011), the potential capacity to empower teachers with both cognitive and affective learning contexts that might lead to conative changes in students' democratic citizenship. (Langseth, 2015).

Kennedy (2005) suggests a classification of CPD models on a *continuum of practitioner empowerment* (see Figure 6). This ranges from the traditional, expert-centered, knowledge focused and contextually void training model that places its purpose in providing new skills for teachers to enable them to deliver the curriculum to students, to transformative models that are teacher-centered and provide means to support sustainable educational change through the development of deliberate professionalism. The author's analysis suggests that the PP sits at the intersection of several models. The program is very far from, and is critical of (Huber & Mompoin-Gaillard, 2011; Huber, Mompoin-Gaillard, Besson, & Rohmann, 2014) models that demonstrate a fixed and limiting perception of teacher agency and autonomy.

Model of CPD	Purpose of model
The training model The award-bearing model The deficit model The cascade model	Transmission
The standards-based model The coaching/mentoring model The community of practice model	Transitional
The action research model The transformative model	Transformative

**Figure 6: Kennedy ‘s “Spectrum of CPD models” from Kennedy, 2005, p. 248**

Such models disregard issues of power and whose agenda is being served, by the practitioner seen as one who is merely a gear in the “education delivery system” (Carr & Kemmis, 1986). These are the models at the top of Kennedy’s categorization (Figure 6), i.e., standards-based models, that belittle the notion of teaching as a complex, context-specific, political and moral endeavor; or deficit models that operate on the perceived deficit in teachers again not taking into account the context of teachers’ practice and the power struggle at hand; or award-bearing models that rely on competition and training models that purport a solely skills-based, technocratic view of teaching. Korthagen (2017), coins for these models the term “teacher professional development 1.0”.

What is important for this study is the correspondence of the PP to what Kennedy labels a “transformative model” (or “poststructuralist approach”) to CPD, defined as a combination of the more “autonomy supporting” models, such as:

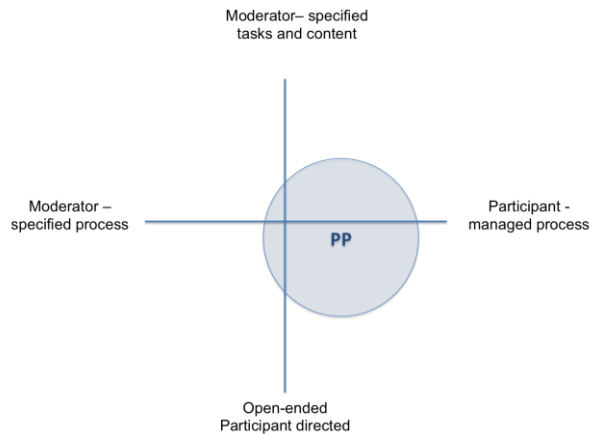
- a *cascading model* since participants, who partake in the international CPD events, are then put into the position to disseminate the work within their national and local context and create specific locally based groups on the Pestalozzi platform (see section 2.1.3 for more details) to sustain cascading, organizing meetings and training in member states.
- a *mentoring model* that purports clinical supervision and a somewhat hierarchical relationship, as occurs also on the platform, in closed, invitational spaces, which are not the spaces this study focuses on (see data set and purposeful sampling in section 5.2). This research focuses on the more *collegiate setting of mentoring*

where horizontal relationships of peers engaged in dialogue, is the base of collaboration.

- an *action research model* in many ways: first because participants evaluate the changes they make in their classroom activities, the action research model is very present in the PP. A detailed account of the program's approach to action research was provided in a review of the activity including teachers' reports of their personal action research (Bognar & Mompoin-Gaillard, 2017). The emancipatory aspect of the conducted action research lies in the fact that participants question not only their practice but also become conscious of the underlying values, assumption and limiting beliefs that guide their action. Such activity is akin to double-loop learning (Argyris, 1976; Argyris & Schön, 1995) - and may thrust them into being *living contradictions* (Mc Niff & Whitehead, 2006, 2010) when their practices do not allow them to "live their values". The method is deemed highly suitable in the PP context as it allows investigating democratic values and practices, in the context of a democratic environment (the PP community).

Evidently, these multi-fold descriptions of the PP are aligned with Kennedy's view, that transformative models are more a combination of aspects, processes, and conditions of the other models than a model in itself. Other frameworks can be helpful in characterizing this *combinational type of CPD* on which this study focuses. Although Coomey and Stephenson's (2001) framework is not centered on the question of CPD, their pedagogical model helps us position the PP in terms of *locus of control* (Figure 7).

The framework suggests that current experience of online learning falls within four paradigms: 1) Teacher-controlled, specific learning activities; 2) Teacher-controlled, open-ended, or strategic learning; 3) Learner-managed specific learning activities; and 4) Learner-managed, open-ended, or strategic learning. These four possible pedagogical perspectives result from the combination of two variables, content and learning processes, as applied to two principal actors, teacher and student. They are helpful for framing questions about the PP, where the actors are moderator/facilitator and participants, all of which acting as learners.



**Figure 7 Placing the PP model of CPD within Coomey and Stephenson’s (2001) model of four pedagogical paradigms.**

Because both moderators and participants may propose discussions and tasks, the PP model falls within an *intersectional cloud* in the quadrant with the main locus of control being in the hands of participants. The activities may be proposed by moderators with considerable learner discretion on how to engage with them. Thus, participants have control of how they work towards and achieve the set goals and the tasks. Personal goals ('reasons for being there') are as important as specific learning outcomes. There may be finishing times set by moderators, but in most cases participants find their way to the end point with much freedom of choice (Coomey & Stephenson, 2001). Further supporting this analysis is the fact that, historically, the PP (hired) moderators were given different labels reflecting their different roles: steward, facilitator, coach, but never “instructor” or “trainer”. The final choice was to name them “stewards” to welcome and recognize a type of *host leadership*, trusting invitation to engage with freedom as the best option for moderator action.

### **2.6.2 Conversational, less than formal, low stakes? Where does networked professional learning and development stand?**

As explained in section 2.2, the PP can most aptly be described as a ‘non-context based and professional’ learning environment (Crawford, 2002). Vaessen, Van Den Beemt, and De Laat (2014) emphasize the need to develop hybrid forms of learning where both formal and informal learning activities are recognized and promoted. By “formal” the author refers to learning experiences that are previously organized and sequenced with



expected outcomes; and by “informal” is intended not pre-structured, and open-ended experiences. Although participants talk about their school, the pressures they experience and the practices they deploy, the talk remains at “low stakes” because it is disconnected from their direct professional context. This distance is enough that practitioners may create a space that is safe enough for them to vent, to wonder and wander into deeper understandings of what they are doing with students, and with colleagues. Both formal and informal learning processes are part of the everyday experiences of teachers, even if such continuous processes of workplace and networked learning sometimes fail to be recognized as professional development. As such, informal learning processes are often overlooked by policymakers, and education leadership and thus they do not receive suitable attention.

Vaessen et al. (2014) advocate for networks resulting from informal relationships as an important aspect of CPD. Such informal networks, help teachers to tackle the increasing complexity of their work:

Research shows that most of what professionals learn is learnt informally (Cross, 2007), which highlights the need for professional autonomy and personal creativity in problem-solving and professional development. Furthermore, research shows the need to understand the role and impact of informal social networks on teacher professional development (Villegas-Reimers, 2003; Darling-Hammond et al., 2009; Boud & Hager, 2012; Hargreaves & Fullan, 2012). (Vaessen et al., 2014, p. 57)

CPD in the OPLC is conversational, and the group is characterized by high peer interaction, guided but not often constrained by moderators’ interventions, with no other set goals than those that the involved individuals bring about in the discussion. Conversational CPD implies a process that is not so much organized or structured in terms of objectives, time or learning support, but rather intentionally flexible and in line with participants needs and possibilities.

Nevertheless, the author is cautious to dampen the characterization of the PP as low stakes, with regard to the emotional intensity that is at times observed in the data and the potential for identity forming processes it offers, as demonstrated in this quote from a participant:

My secret is this: The moment I stepped into Pestalozzi Community, I started regaining hope and energy to go on,

between people that are sharing same values (Noemi, sample 2).

If stakes are low in relation to the professional real-life context (I can talk about my colleagues and school head without them knowing about it), it may be that stakes can increase when the conversation compels difficult knowledge and uncomfortable circumstances. Such circumstances may be created as participants access learning beyond their zones of comfort.

### **2.6.3 Learning as meaning-making, building community and identity**

The learning takes place among peer educators through experiences, through self-directed learning and through reflective and critical friendships. The knowledge thus created is always “knowledge in the making” and is never accepted as an end-product. There is a shift to capacity-based models, where “insight tends to come from many people working in different settings, rather than a few Einsteins” (St.Clair, 2008, p. 23).

A remaining question could be whether and to what extent the OPLC would be considered as a *community of enquiry*, based on “partnerships between teachers, academics, organizations, and which can involve both the context, and the knowledge required for real and sustainable educational change” (Kennedy, 2005, p. 246). Such communities take “enquiry” “as opposed to merely “practice” as their uniting characteristic, thereby asserting a much more proactive and conscious approach than is necessarily the case in communities of practice” (p. 246). Although this description corresponds to the OPLC’s circumstances, the author chooses to rely on the concept of CoP to describe the OPLC because it is a more widely used concept.

Participants’ awareness of the existence of the community is crucial to their internalization of the learning (Kennedy, 2005) that is being nurtured within participation in the OPLC. The OPLC seeks to develop a community model for supporting learning and promotes learner engagement with members in educational settings in Europe and elsewhere. Participants voice their feeling of belonging and identity:

I would describe it as a very strong and rich experience that empowers the linguistic and cultural competencies. It provides opportunities to learn from different people, and is based on

the same principles, which I personally support and try to live and work by in my daily life. (Personal communication, Teacher and PHD student, Croatia, PP Survey 2015).

This member expresses what Wenger (1998) calls the “negotiation of meaning” in CoPs: practice is about meaning as an experience of everyday life. There is no guarantee for this negotiation to be harmonious and the author does not intend to imply that the communication in the community is always smooth.

#### **2.6.4 Summary**

This chapter has described the PP in detail to help the reader imagine the space, the people and the community and the platform it evolved in. Furthermore, the PP has been situated within the landscape of CPD provisions and its *transformational, open-ended, and peer-to-peer* oriented nature has been clarified. The PP engages participants in learner-centered, pro-motive interaction to foster connection and a sense of belonging.



### **3 Challenges with data: addressing complexity and grounding the research.**

This chapter addresses the issue of how the researcher dealt with the complexity inherent in the data and context.

#### **3.1 “Data data everywhere”: using existing data is a contemporary choice**

The work is a large-scale case study, the case being the PP community and the interactions it contains. The study is based on activities and data, neither of which was planned or collected for research purposes. The data is composed of the transcripts of participants postings and the interactions that are contained in the dialogic space that is the PP platform. The researcher followed an iterative process, using theoretical material to construct a methodology for the observation of interactions, patterns, and dynamics in the data, by means of weaving inductive and theoretical work, all of which is explained in detail in the Methods chapter (Chapter 5).

The study involves the analysis of conversations that have taken place on the platform of the OPLC between 2012 and 2017. It is the author’s position that it is worthy to advance on research using *analysis of existing data* (Makady, de Boer, Hillege, Klungel, & Goettsch, 2017), especially in a sphere – digital conversation – in which the amount of data gathered and stored gets larger every day, at an exponential speed with enormous potential that research communities need to harness. “Data data everywhere” writes David W. Schaffer in his method of quantitative ethnography:

Now, though, we live among the towering mounds of data that accumulates as we move through life in the digital age. [...] Eric Schmidt, Chairman of Google’s parent company, Alphabet, estimates the world records as much information *in 2 days* as was created from the beginning of written records 400.000 years ago through 2003. (Shaffer, 2017, pp. 4-5).

By using the current data on the platform, the author can only make interpretations about the active members and not the passive participants. Therefore, the extensive background information on the program and participants and the completeness of the existing data set, is important. It provides a variety of information that was useful for the analysis. But as

concerns the design of the research, it was driven by the data itself. The researcher did not decide beforehand what the emphasis would be, nor what the best data for the research questions was. In fact, the research questions and the conceptual framework were to a large extent determined by the available data corpus (Audran & Simonian, 2009; Doolan et al., 2017; Heaton, 2004; Johnston, 2017; Mitchell, 2015). The choice of using existing data lacks no interest vs. other data-generating approaches, such as surveys or interviews. Especially concerning research in online settings, it appears that online users may give subjective descriptions of their experience of learning online that are at odds with objective elements of their engagement, i.e. what is observed in their actual behavior - see for example Crawford (2002). Participants at times cannot self-report on “why they do things”, if they are unaware of their actions and motivations, or unwilling to share them openly.

### **3.2 Onto-Epistemological grounding**

The epistemological perspective which underpins the research is based in social constructivist (Vygotsky, 1985) learning, networked and open learning theory (Siemens, 2007; C. Jones & de Laat, 2016), and the “radical pedagogies and humanistic educational ideas from the likes of Dewey, Freire, Giroux and Rogers” (McConnell, Hodgson, & Dirckinck-Holmfeld, 2012). In section 1.6, the author has explained her ontological position within the research. She has set out conditions of her life and experience that may influence the production of knowledge gained from the investigation of the OPLC. Here, the author wishes to delve into both epistemological and ontological approaches in relation to each other. Thus, evoking the two-way traffic that exists between epistemology and ontology (Ejnavarzala, 2019), the author endorses the view that “social reality should not be restricted to merely the human social world, but we should also include the non-human and non-social reality” (op. cit., p.98). That is to say that there is a recognition of the fact that anything happening in the OPLC, and in its observation, is to be viewed as an interacting ensemble of elements that include humans, technology, actors, ideas, resources, artifacts, contexts and inter-contexts, *and the observer*. The ecological approach caters to this particular situation, and the interplay of an onto-epistemology, the interpretivist approach including intimate familiarity with the setting and topic, and the realities of the data and context.

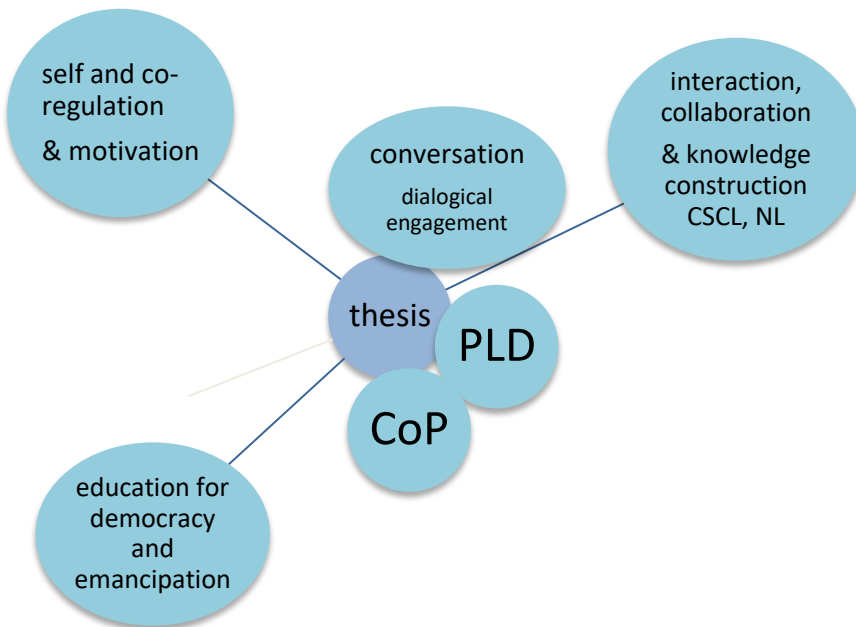
All the elements interrelate and compose the complexity and the scope of the context and data. To address this complexity, the author has been

inclined to adopt a holist, systemic perspective and acknowledge the variety of issues pertaining to the study of the PP platform and its affordances for professional learning. This choice has for example warranted the preference to engage with a breadth of theoretical perspectives and ideas, to explore the current debate on the issues of transformative PLD, education for democracy, online collaboration, and learning.

This route offers advantages and disadvantages. In terms of advantages, it deals with two matters. Firstly, it permits to view and study the relationships within the OPLC seen as a system, not only naming the parts of the system but also analyzing and interpreting the relationships between these parts. Secondly, part of the conceptual framework is harnessed towards the construction of a method for the research which acknowledges this complexity. Thus, there is an effort made to weave several approaches, where each benefit from being connected to the others. At the same time the author acknowledges that this choice of scope brings with it issues, which must be addressed. This includes, firstly, the necessity of staying at a level that is somewhat more superficial than what one finds in studies that focus on a specific theoretical and epistemological frame. Secondly, that *the theoretical perspectives remain epistemologically compatible*. To address these issues, the author first defends the advantage of this eclectic approach to address complexity and the system, or ecological view of the OPLC, while acknowledging the considerable challenges it entails. Secondly, the nature of the data, that is inter-relational, justifies the choice of theories, which mostly belong to socio-constructivist perspectives, with a view that learning is the product of social interactions and that individual human utterances exist in relation to other utterances and are to be considered in context (Bakhtin, 1981, 1986).

These choices both justify and substantiate a decision to have a wide angle, a generalist point of view that the author is convinced is a contribution to the field, since most online environments, as they continue to develop in terms of interactions, ideas, technology and artefacts, are extremely dense, intricate, multifaceted contexts that benefit from being seen in their complexity. Taking into consideration all the elements presented above, one can observe that exploring the ecology of learning of online communities warrants what Haythornwaite calls "*multi-fold theoretical approaches*" (2016). Research perspectives on learning in online environments "are now rapidly expanding to consider further influences, such as how context, values, design choices, adoption patterns, communication and collaboration patterns, (...) affect use, with an

increasing interest in how these affect learning opportunities and practices” (p. 5). Figure 8 visually represents where the current debate is mainly situated as regards to the aim and questions of the thesis, and namely its ecological perspective.



**Figure 8 The different parts of the work in relation to the theoretical areas encompassed in the study’s ecological perspective.**

Thus, concept of ecology (Crook, 2000a; Jackson, 2013; Siemens, 2007) was chosen to cater to the many parts of the context and the relationships these entertain to form the environment of the OPLC. Within this ecology, an ensemble of factors interact to sustain participants’ engagement viewed as a motivated activity (Crook, 2000a). Therefore, the study of the *conversation as an ecology of learning* for this particular case study lies at the crossroads of several theoretical areas; to convey the transcript’s communicative richness, to allow it to be fully revealed, reliance on several theoretical constructs and fields was necessary:

- professional learning and development (PLD) and continued professional development (CPD) in education based on a pedagogical rationale for distributing the professional education over an extended period and fairly continuously (Fullan & Hargreaves, 2016; Jónasson, 2013; Korthagen, 2017) while engaging



educators on the level of values and beliefs (Biesta et al., 2017; Harris, 2010; Huber & Mompoin-Gaillard, 2011).

- Education for democracy (Dewey, 1938; Parker Follett, 1924; Pestalozzi, 1894), with its acceptance within the Pestalozzi Programme (Huber et al., 2014; Mompoin-Gaillard, 2015b; Mompoin-Gaillard & Lazàr, 2018) and liberating education (Freire, 1972; Piaget, 1963; Rogers, 1969; Vygotsky, 1985).
- Features of online collaboration such as “computer supported collaborative learning” (CSCL) (Dillenbourg, 2002; Häkkinen, Arvaja, & Mäkitalo, 2004; Järvelä & Renninger, 2014; Kreijns et al., 2013; Strijbos, Martens, & Jochems, 2004) networked learning (Haythornthwaite & De Laat, 2012; C. Jones & de Laat, 2016) and “computer supported communications” (CMC) and virtual “Communities of practice” (CoP) (Audran & Simonian, 2009; Charlier & Daele, 2006).
- Conversation and text-based communicative activity (Bakhtin, 1981, 1986, 2010; Gadamer, 2001; Laurillard, 2002; Lee & Brett, 2015; Pask, 1976; Sharples, Taylor, & Vavoula, 2016).
- Depth of knowledge construction amongst learners (Gunawardena, 1997; Lockhorst et al., 2010; Newman, Webb, & Cochrane, 1995; Zhu, 2006), and online activity that supports the ability to instigate and sustain, critical thinking in a community of learners (deNoyelles et al., 2014; Garrison, Anderson, & Archer, 2001; Järvelä, Malmberg, et al., 2016; Järvelä & Renninger, 2014; Rourke et al., 1999).
- Theories of flow, and engagement as a motivated activity (Crook, 2000a; Csikszentmihalyi, 1990; Deci & Ryan, 1985; Järvelä & Renninger, 2014) and self- and co-regulation (Hadwin et al., 2011; Järvelä, Kirschner, et al., 2016; Panadero & Järvelä, 2015).

### 3.3 The framework of ecology

The author adopts a holistic approach to transcript analysis where the context of interaction is observed within the context of the conversation. The *entire gestalt* (Gunawardena, 1997, p. 407) or the *ecology* (Crook, 2000) of a communicative situation is in view. Social networks contain and are sustained both by context, and by the social interaction opportunities they offer (Fahy, Crawford, & Ally, 2001; C. Jones & de Laat, 2016; Ridley & Avery, 1979). There happened to be a number of such worthwhile frameworks that shed a light on these facets of the study, from “learning ecology” (Crook, 2000; Jackson, 2013; Siemens, 2007) and learning as

conversation (Gadamer, 2001; Pask, 1976), to connectivity (Siemens, 2007), and co-intentional (Freire, 2005) or “lifewide” (Jackson, 2013) theories of learning.

With other members of the Lifewide Education community, Jackson explores the dimension of learning ecology and considers it “an essential part of ‘knowing how to learn’” (Jackson, 2013, p. 1). Both Jackson (2013) and Crook (2000) have taken up the ecological framework, finding it suitable for the study of human interactions, with people and their environment, doing-learning-achieving and creating new knowledge. Crook (2000) stresses the importance of processes of meaning-making as they take place online through a variety of activities such as producing and maintaining artefacts, text, images, discourse, and practices. The framework of ecology serves to investigate the issue of “design circumstances in which the productivity of joint engagement can be optimized” (p. 161). Siemens (2007, p. 63) defined a “learning ecology” as “the space in which learning occurs”, distinguishing between “spaces of learning” - moving from classroom to ecologies - and “structures of learning” - moving from hierarchical, content to networked content’.

The OPLC is characterized by elements that are central to the ecological framework, following Siemens’ classification (op. cit., 62-3):

- Adaptive, dynamic, and responsive: the conversation adapts to the needs of the actors.
- Chaotic: diversity of actors, the dynamics of a European international intercultural context.
- Self-organizing and individually directed: the conversation occurs through the ongoing interactions.
- Alive: the conversation features continual newness.
- Diverse: with multiple and possibly conflictual viewpoints.
- Informal: the conversation offers a space of minimal control, autonomy, and freedom to engage on one’s own terms, in which learning is a bi- product of engaging with others in experiences or tasks.
- Emergent: the space itself is ever evolving and participants are more or less conscious of their learning while they are engaged in activities where learning is not the primary stated objective.

Because the activity cannot be separated from the interconnected environment and actors, the study considers a variety of elements of the conversation typically involving *cognitive* but also the *emotional* and *social*

and *cultural/ethical processes of meaning-making*, that bring participants to engage and remain active. These processes are often intertwined with each other in a way that is not reducible to any one level only.” (Häkkinen, 2013, p. 547) and therefore must be analyzed in connection with each other.

The ecological perspective proposed in this research sits with a perhaps eclectic conceptual framework and approach to analysis whereby efforts are made to bridge diverse elements of research. It lets the researcher ask different questions, looking at how people work, integrate experiences and knowledge across boundaries (Haythornthwaite, 2015). The activity in the OPLC occurs within interconnected elements: the actors and their respective institutional-political and social contexts, ideas embedded in narratives, resources as well as the technical environment, all shape the interaction by the affordances and constraints they arrange. Thus, the study, considering such variety of elements of the conversation, proceeds to define an *ecological perspective to understand how education professionals engage and learn in the OPLC, by identifying emergent characteristics associated with learning through conversation, and by noticing the environment or space holding the exchanges.*

While seeking after more operational methodological accounts for capturing e.g., the processes of collaborative learning or community-building, we should bear in our minds that the analysis of collaborative interaction cannot be isolated from the context in which it is embedded. Crook (2000) has also called for the importance of analyzing *narrative structures* instead of isolated speech acts. (Häkkinen, Järvelä, & Mäkitalo, 2003, p. 396)

Therefore individual utterances should be studied within the context and situation made of activities, systems of tasks, artefacts, interactions, jargon and definitions, social practices, microcultures, roles etc. that are “absorbed into the groups knowing” (Stahl, 2003, p. 67). Ecology is chosen out of the recognition that everything is connected to everything else and challenges the idea that learning-to-teach can be investigated by studying unconnected bits. This option echoes Wideen, Mayer-Smith, & Moon’s (1998) theory concerning teacher education. The authors consider how progress in research, that will support improved practice, occurs when an ecological approach to the learning-to-teach process is taken. Wideen (ibid) deems that the idea parallels Capra’s (1996) notion of creating a new

ecological synthesis in science, and that Capra's proposal has applications to the reconceptualization of teacher education. Key to Capra's ecological synthesis is the concept of "systems thinking," that focuses on the interrelations amongst organisms, objects, and particles and their contexts, stressing that no separate parts exist in any system. What one normally calls parts in a system are merely patterns in "an inseparable web of relationships" (Capra, 1996, p. 37). Wideen et al. contend that this theory is helpful and namely that:

...as we become aware of different levels of complexity, new properties and insights emerge. These ideas are deemed directly applicable to the realm of teacher education, where research is finally acknowledging and beginning to unravel the complexities of the learning-to-teach equation (Wideen et al., 1998, p. 168).

For this research, the author has chosen to use the term *ecology of learning* as representing the space in which an individual's, or a group's learning occurs. *An ecology of learning is constituted both by the physical (technological) and social space in which a person learns and the interconnections and relations between the elements that comprise it*, such as: the technological settings, actors and their behaviors, thoughts and ideas, the artefacts, resources, processes and sets of contexts, cultural and historical, the and the interactions that provide individuals with opportunities and resources for learning, development, and achievement.

## 4 Literature review: a conceptual and analytical framework

As presented in Chapter 3, the conceptual framework for the study offers an *epistemological breadth* that is warranted by the nature of the data at hand and the aim of the research, which is to understand the ingredients of *conversational CPD* that takes place between in-service teachers having a diverse cultural background but sharing the common aim of being able to promote various aspects of *democratic principles and understandings within European schools*. The structure of the framework is crafted in line with the different theoretical areas encompassed in the study's ecological perspective, as presented in section 3.2, and visualized in Figure 8. This conceptual framework is important for situating the study. The author aims here to demonstrate the importance of the study by defining the main ideas and the network of relationships between them; and also, to ground the study in the relevant knowledge bases that lay the foundation for the importance of the problem statement and research questions. A summary at the end of the section brings the parts together in an integrated theoretical framework summarized in Figure 9 at the end of the chapter. This figure is an extension of Figure 8 (theoretical areas encompassed in the study's ecological perspective), including this time the subsequent three RQs of the study. In this section, the author will endeavor to demonstrate that the advantages of this approach outweigh its weaknesses.

This framework gives the ingredients to analyze the complex features of the conversation and its ecology, which is somewhat new, since it sits neither in formal nor the informal/non-formal education setting but lies somewhere in between. The nature of the data, its variety and complexity justify the use of theoretical conceptions, extracted from the literature that may open up different and important ways to consider the research questions that the author develops further in this chapter. There is a strong rationale for selecting a diversity of concepts and theoretical models that are deemed relevant to the research's full spectrum and the complexity it tackles. The study brings in many facets that are not traditional – such as semi-formal and informal education arrangements, online discursive activity, using existing data, for example - and the researcher therefore was looking for a background in which to discuss these ideas and the research questions.

#### **4.1 Professional learning and development engaging educators on the level of values and beliefs.**

In this section, the debate around the types of teacher education that harbor transformative potential is the main concern. It is interested in the elements of CPD that favor deeper modes of professional development through content, process and through more programmatic issues such as longitudinal approaches.

As mentioned in Chapter 2, the Pestalozzi Programme recognizes the need to foster collaborative professional learning (understood as the acquisition of content, data, tools and methods) and professional and personal development (understood as growth in the areas of values awareness, mindfulness, enjoyment, commitment and building of positive and stable identity), both together so called Professional Learning and Development (PLD) (Fullan & Hargreaves, 2016). Many authors point to the benefit of professional learning and development (PLD) and continued professional development (CPD) models in education that are based on a pedagogical rationale for distributing the professional education over an extended period and fairly continuously (Fullan & Hargreaves, 2016; Jónasson, 2013; Korthagen, 2017) while engaging educators on the level of values and beliefs (Biesta et al., 2017; Harris, 2010; Huber & Mompoin-Gaillard, 2011).

In section 2., it was evidenced that the multi-fold descriptions of the PP were aligned with Kennedy's view, that the transformative model is more a combination of aspects, processes, and conditions of the other models than a model in itself. Korthagen (2017) coins the terms "professional development 1.0" to characterize traditional CPD models structured around theory to practice. He argues that the shift to "professional development 2.0" models structured around practice to theory represents an advancement by bringing teacher learning closer to the actual practice of teaching. The author advocates the passage to "professional development 3.0" in which not only theory and practice are considered but as well the teachers' thinking, feelings, desires, ideals (what inspires them), and identities are recognized. He establishes learning communities of teachers as a means to achieve 3.0-class CPD.

... such an approach builds on the concerns and gestalts of the teacher, and not on a pre-conceived idea of what this teacher should learn. This may also be an explanation of the positive outcomes of communities of learners in which teachers

collaborate, as scholars studying teacher change emphasize (see, e.g. Fullan, 2007; Whitehead & Fitzgerald, 2007). (Korthagen, 2017, p. 400).

For now, in order to situate the type of PLD in which the study is interested, through the case of the PP, what is useful is the notion of *professional development 3.0* (Korthagen, 2017). The importance of integrating teacher thinking, feeling, belonging, and behaving is of particular interest when beholding the research's second and third question that study motivation to engage and the relation between participants' engagement and transformation of practice. Harris (2010), citing Boyle, White and Boyle argues that most forms of professional development "appear insufficient to foster learning which fundamentally alters what teachers teach or how they teach." (2004, p. 47), and points to the challenge to identify the features of training that are shown to be effective in bringing about change.

Listening closely to the ways in which teachers "richly contextualize their professional identities ... sheds light on how the dynamic of recognition shapes the range of possible meanings for teacher professional identity' (Cohen, 2010, p. 480). Conflicting views about what is good pedagogy results in teachers having to manage multiple and sometime conflicting pedagogical beliefs, for example: beliefs developed at home, in primary and secondary education, during the teacher education program as a student, and beliefs adopted while doing teaching-practice at school (Akkerman & Meijer, 2011).

Charlier & Daele (2006) and Daele (2013) underline some dimensions of CPD as a situated, often *unplanned and continuous process* that is oriented towards a goal that requires the individual responsibility of the teacher to engage. They, confirm Korthagen's (1993) view when they underline that the boundaries between personal and professional development is often murky and that processes involving identity formation are at play through dialogue and friendly confrontation with colleagues. These characteristics point to the usefulness and adequacy of their participation in communities of learners through collaborative work. Such communities are to be studied in context, considering *the ideologies that underlie the discourses*. They often provide the safety to bring in one's "real concerns and feelings, which are grounded in everyday practices" (Korthagen (1993) as cited by Daele (2013, p. 29). Daele (ibid) continues to mention possible affordances of such communities: if the community functions well, genuine attention will be given to these affective and motivational aspects in the person. Only

then can effective learning take place. A community forges and transmits a culture (or microculture, see section 2.4.2, 2.4.3, and 4.5). The members co-construct professional identities. Far from CPD models based on the image of the teacher as a "lone wolf", Charlier and Daele (ibid.) echo Day (1999), Huberman (1995) and Engström (1994) who question the validity of this stereotypical image of the teacher. Rather, they move to models viewed as a process in which the teacher is engaged in multiple relationships and interactions. Models based on interaction with peers "in and through action" (Schön, 1987), in and out of school, emerging in association with innovation and change processes become relevant when teachers are able to "reconsider, renew and increase their engagement as agents of change" (Charlier & Daele, 2006, p. 92; Day, 1999). These professional communities are characterized by the intensity of the relationships and the values that underlie those relationships.

Such continuous engagement in professional relationships thus favors the preparation of individuals as change agents and therefore constitutes a response to teachers' resistance to change, an area that the Pestalozzi Programme has researched (Huber & Mompoin-Gaillard, 2011): in their publication on the theoretical underpinning of the program, Harris and Lázár (2011) recognize the importance of teachers' beliefs in their capability to effect change, which in turn may hinge on aspects such as: "the strength of their personal philosophy towards teaching, ... personal theories or gestalts"; their perceived status in school shaping how they evaluate "whether they are in a position to effect change, and whether the school climate is supportive of change". Citing previous research, Harris and Lázár point to two forces that impede change in education and may shed a light on teachers' resistance to change: *erosion*, when new patterns erode over time as they are "washed out" by the tide of old patterns (Zeichner & Tabachnick, 1981), and *inertia*, when forces of habit are stronger than the forces of transformation (Jónasson, 2016; Virta, 2002). The authors argue that teachers teach as they have been taught especially when they have often been good students in traditional schools and successful in teacher-driven instruction, and therefore unwilling to change their beliefs.

Working with teachers of any subject to bring about desirable change in their practice is therefore a very complicated matter and requires careful encouragement. ... [to] help them see any tensions between what they espouse and what they actually do in practice. At the same time, there is a need to pay



attention to the context in which the training occurs and what tensions this may create. (Harris & Lázár, 2011, p. 102)

By addressing these areas, it should be possible to work with teachers, at all stages in their careers to invite them to re-evaluate their values, beliefs, and assumptions, and support them in developing the self-confidence and desire for change which in turn should help move them towards a different, more agentic, position. This study is interested in such questions and particularly, how might continuing engagement in OPLCs help alleviate such difficulties by supplying the careful and continuous encouragement it takes to face issues of complexity, erosion, and inertia?

## **4.2 Dialogical approaches to teacher PLD**

Before arriving to the research questions, it is important to explain what the author of this research means by *engagement* and *conversation*. Both are concepts central to the socio-constructivist epistemology that is developed. Both are developed in the next two sections.

### **4.2.1 Engagement: a dimension of participation.**

For participants to benefit from the transformative potential of such PLD, they must *engage* in interactions in the OPLC. This section aims to define the concept as it is used, and to distinguish it from the concept of participation that the author judged problematic within this research. The literature on engagement is rich and plentiful.

Engagement can be seen as a meta construct, which may provide a richer characterization of participants than is possible in research on single components (Fredricks et al., 2004). Definitions of engagement draw from different literatures, but this study is specifically inspired by Fredericks et al.'s and Järvelä et al.'s concept of engagement, which characterizes engagement as a multidimensional construct (Fredricks, et al. 2004; Järvelä & Renninger, 2014) involving different components. Fredricks et al. (2004) argue that these components, include: behavioral (sustaining engagement, not dropping out), emotional (encompassing the quality of relations to peers and teachers, positive or negative reactions to tasks and the environment) and cognitive engagement (willingness to do the tasks). Engagement is a product of learners' interactions with the environment (Järvelä et al., 2014). Therefore, it is important to distinguish the concept of *engagement* from that of *participation*, since there are many forms of participation and only some of these forms result in participants posting on

the platform. Participants may choose to read only, frequently or occasionally, they can download resources or not... post messages or not. *Lurkers*, or *covert participants*, (Haythornthwaite, Andrews, et al., 2016) are defined as members who post occasionally or not at all but are known to read the group's postings regularly (Sun, 20014). On the Pestalozzi platform there is no technical means of identifying covert participation. The existence of covert participants can only be inferred by the gap between number of views and number of participants who are posting (as well as in the number of participants who engage in a suggested action occurring in another space than the platform, as for example downloading suggested materials on other platforms they are oriented towards, or answering polls advertised in the discussion threads). Peripheral members are important to a community in that they may bring inside what they are related to on the outside, and as well spread and promote community artefacts to the outer world. They thus benefit from knowledge exchange, contribute to the content, as well as the dissemination of knowledge (Sun, 2014; Lave & Wenger, 1999; Zhang & Storck, 2001).

Thus, a "redefinition of lurking can also help to show that lurking is not only normal or positive, but also an active, participative, and valuable form of online behavior", (Edelmann, 2013). Lurking, or covert participation, always represents a potential, a promise of future visible engagement when a lurker becomes engaged and joins the overt company of a community. Such participation may as well bridge the periphery and the core of a community, and is also evocative of a potential, a promise of cognitive apprenticeship and *legitimate peripheral participation* (Lave, 1991; Wenger, 1998).

The difference between the kinds of learning made available to members who post, be it regularly or sporadically, and those who do not, cannot be easily evaluated. "Lurkers" may learn vicariously by reading the experiences other participants report or by downloading materials. It would be presumptuous, for example, to automatically infer that the latter gain more knowledge than the former; this is equally true for learners in face-to-face situations who do not ostensibly participate during class time. It is the author's position that *covert company*, a terminology proposed by Haythornthwaite, Andrews, et al. (2016), is a more neutral term, better adapted to the realities of communities rather than the term "lurker" so often used. Lave (1991) described *legitimate peripheral participation* recognizing the important role played by members who hover on the outskirts of the community, but may have the effect of opening it to the outside and thus bridging the community with other groups (Lave, 1991;

Lave & Wenger, 1991). This expression “covert company” is thus preferred to the use of the following terms:

- the derogatory term “lurker” (Rafaeli, Ravid, & Soroka, 2004; Ren et al., 2007; Schneider, Von Krogh, & Jäger, 2013; Sun, Pei-Luen Rau, & Ma, 2014) ensuing that people might have ill intentions when participating in this way in online communities;
- the highly interpretative term “drowner” (Crawford, 2002) for participants who find it very difficult to log on, and have little motivation to succeed;
- the likewise derogatives such as “sceptics” who may treat the whole idea dismissively as mere chatting and “dippers” who tend to display less altruistic behaviors than other users, and will only post when they need support urgently from others (Salmon, 2000), that Crawford (2002) goes to the extent of qualifying as “illegitimate peripheral pilferers”.

It is reasonable to assume that engagement, once established, builds on itself, nonetheless, there are first qualitative differences within each dimension of engagement and secondly, Fredricks et al. (2004) suggest that engagement can vary in time as well: variations in intensity, stability and duration point to potential for evolution regarding engagement and learning. Thus, *engagement is emphasized differently in different parts of this research.*

- When examining the first research question and sub-questions, *engagement patterns* are of interest;
- for the second research question and sub-questions, it is the building of *engagement as a motivated activity*, that is the helpful;
- with the third research question and sub-questions, on the other hand, what is interesting is the perceived *impact of engagement* on actual practices in the classroom.

Therefore, engagement as a multifold concept, is harnessed in different ways across the research.

#### 4.2.2 Conversation: a dimension of social constructivist perspectives

*I will try to establish why I believe that one can only learn through conversation (Gadamer, 2001)*

Thus, we established what is meant by the phrase “participants engage in interactions in the OPLC”. The space in which the interactions occur is afforded and constrained by technological, psychological, social, professional, institutional, features alike; the means of communication require reading texts to interrogate different perspectives. The author will develop this idea further when delving into the Bakhtinian perspective, (see section 4.2.2 and 4.5.1). This section aims to further establish why the ensemble of interactions in the OPLC is conceptualized as a *conversation* and that the role of conversation for the professional development aspect as described above, considers conversation to be a central and crucial activity and medium for learning.

Laurillard (2002) defined the concept of conversation as flexible, informal activities, with peers and moderators. In a heuristic perspective, some authors see conversation as a foremost driving process of learning (Gadamer, 2001; Sharples, Taylor, & Vavoula, 2016; Vessey & Blauwkamp, 2007). In order to learn deeply, a person or system must be able to “converse with itself and others about what it knows” (Pask, 1976) and to constitute a learning conversation “participants must be able to formulate descriptions of themselves and their actions, explore and extend these descriptions”, possibly to “move new understandings to future activity” (Sharples et al., 2016, p. 68).

Biesta et al. (2017) view teachers’ talk as a most necessary condition for their achievement of agency. Teachers’ knowledge is not only the *knowledge for teachers* generated elsewhere, but also the *knowledge of teachers* gained from a range of sources and experiences, including their ongoing engagement with the practice of teaching itself. If, as Biesta argues, talk is an important resource for teachers, then, an online community where teacher PLD is done through talking is highly relevant. An online community can be viewed as a system that attempts to “conduct an internal learning conversation that allows it to learn from experience, and adapt to its environment” (Laurillard, 2002, p. 215). The teacher is no longer merely the one-who-knows but is constantly shaping her/his values, knowledge, attitude, and behavior. Laurillard (2000) posits that higher education, (and by extension teacher PLD), should not only give access to

information but also include learners' "engagement with others *in the gradual development of their personal understanding* [emphasis added]" (p. 137). Thus, the interaction with peers and with moderators is the fundament of learning in the OPLC and an important goal of this type of PLD is the creation of relationships in which participants feel connected to and support each other in their efforts to learn.

Biesta et al. (2017) also note that some talk seems to support the ways in which teachers make sense of their practice, while other types seem to interfere with and distort what they feel matters and should matter in education. These play a role in the achievement of agency, for future action; for example, if a teacher felt more able within the environment of her own classroom, she could also feel less able (powerless) within the wider context of the school, as is often the case in the PP data. Also, the threads of discourses from the past remain in the present (Bakhtin, 1981) and can complicate a dialogic process. All these considerations bring arguments in favor of conversational types of CPD/PLD for teachers to unwind such knots. It is important to understand whether, how and to what extent such an approach allows for a teacher education process that *educates for uncertainty, ambiguity and complexity* and opens a path for *new possibilities*. Following Biesta's argument, this research will be very interested in how teachers' talk can – or cannot – exist independently from policy, research and discourses about education, thus liberating their opportunities for critical evaluation and alternative courses of action and allowing for an *ideological becoming* (Bakhtin, 1981). This supports once more our ecological approach since the achievement of teacher agency is the result of a complex interplay of "individual capacity and collective cultures and structures" (Biesta et al., 2017, p. 52).

In the OPLC, teachers' talk is not uniquely individual, but is mutually shared as it emanates from shared histories within shared practices. It is therefore a conversation in the wide sense, and it is *open ended*. This perspective of dialogue supported by a particular style of communicating relates to Habermas' model of *communicative rationality* (Habermas, 1981, 1987) in which consensus rests on the intersubjective recognition of criticizable validity claims. It is a style that is democratic, respectful, not threatened by challenges and prepared to receive critical statements, while seeking critically grounded consensus (Habermas, 1981; Wegerif, 1998). Also, the Bakhtinian theory of text-based open-ended dialogue (Bakhtin, 1981), develops what effective dialogue, here teacher conversation, would need to include: to develop open-ended dialogues through closed-text-based interactions, readers need to *translate* (imagine a colleague's

situation), *identify*, (place themselves into the positions of the colleagues and feel the colleague's consciousness from within), and *impersonate*, (understand the colleagues so as to think in their voices).

The theoretical inclusion of the Bakhtinian perspective can be part of the approach aiming at articulating the dialogical - and potentially transformative - processes observed in a conversation (Lee & Brett, 2015). Namely, Lee & Brett (ibid.) point to three principles of Bakhtin's theory that relate especially well to the context of online conversation: first, *outsideness*, open ended dialogue requires to present oneself to others which allows to understand oneself and the boundaries between self and other (each utterance are half the addresser's and half the addressee(s)'s since we are in response); then *heteroglossia*, in terms of quality of conversation open-ended dialogue involves multiple perspectives and valid voices that coexist; finally, *simultaneity*, when understanding is embedded in response, they are dialectically merged and open-ended dialogue is a simultaneous and reciprocal event between the self and the other (listening and speaking, responding and being responded to, questioning and being questioned, for example).

The use of a wide concept of conversation has been gaining traction in the latter years. Scholars have stressed that conversation matters, and it stretches beyond dialogical structures. It is a "meta process of how we bring forth the world" (Scharmer, 2016, p. 290) and it becomes transformational when it involves personal connection, defined as authentic sharing and listening, dialogue attending a "deeper space" (adding up to "collective presence" (ibid.). This process is similar to the experience of *flow*, meaning that conversation can be seen as a way of enhancing our lives by improving the quality of our experience (Csikszentmihalyi, 1990), with others.

As for online conversation outside of educational settings, Turkle (2016) stressed that the virtues of person-to-person conversation are timeless; human's most basic technology, talk, responds to our modern challenges. She has pointed to how conversation may be coming into peril when technology is ubiquitous and replaces it with other forms of communication. This research may contradict her position, since the author considers that the educators in the OPLC are in fact engaged in conversation that responds to real-life challenges through technological means.

In sum, the concept of conversation is central both to the online community and to the research work. Is it an *intertextual site* (Hamston,

2006) where discourses from within and from outside, from the present and other times and places, meet and clash (Bakhtin, 1981) with those discourses embodied in the members. The author conceptualizes *conversation as an ecology of learning* that, in certain conditions, is conducive to engagement in online professional learning and development. In the previous section, the author has highlighted research that considers that participants who engage in online conversation practice critical skills of giving feedback, scaffolding with each other's inputs, at times getting into flow. They may develop a voice in a community environment that is *safe enough* to help be prepared to question their own knowledge and views. This creation of knowledge through interaction and collaboration is placed in the realm of conversation and therefore non-formal learning vs. formal learning in traditional educational institutions. It is therefore akin to dialogic pedagogy (Hamston, 2006) aiming at what Weis & Fine defined as "extraordinary conversations" (2003, p. 123), that is, those conversations of "intellect... [which] educate for critical inquiry and civic participation across lines of 'difference'." (Weis & Fine, 2001, p. 521).

### **4.3 The features of the activity between participants and their relation to the depth of meaning making for professionals?**

Asynchronous web-based discussion platforms may "assist shared reflection and problem-solving for teachers to discuss their teaching" (McPhee, 2015, p. 107), *when the conditions are there to favor participants' engagement* [emphasis added]. Previous research on collaboration in computer supported communication, collaborative learning and quality of knowledge construction supports the construction of the conceptual and methodological approach to the features of the conversation between participants. The author's aim is to investigate whether and to what extent the same features emerge in similar ways in the present data. In other words, the researcher asks: ***What are the features of the activity between participants and their relation to the depth of co-construction of knowledge for professionals? (RQ1, "the what" and "the how")***. For this, *the study* delves into a combination of previous theoretical models to make the data "talk": patterns of interaction unfolding within the conversation can be analyzed as a function of social and emotional experience by the learner. Because online conversation typically involves processes at different levels (Häkkinen, 2013), cognitive, social and emotional aspects are investigated in this study. This aspect of our theoretical framework is

very detailed and complex, in line with de Laat & Strijbos' (2014, p. 74) suggestion.

Rather than focusing on the impact and effects of networking in general it is very important to understand *in great detail* [emphasis added] “what goes on in particular networks” and see how participation in networks affects learning (de Laat & Strijbos, 2014).

The first research question is further divided in 3 sub-questions (a, b, and c).

- ***What are the patterns of participants' activity and interpersonal interactions observed in the MDTs on the platform (RQ1a)?***
- ***What do the patterns indicate about the nature of interpersonal interactions as they relate to the depth and quality of co-construction in the conversation (RQ1b)***
- ***What do the patterns suggest about the moderators' role to enhance engagement, and co-construction of knowledge (RQ1c)?***

The theoretical underpinnings developed in this section substantiate why these RQs are important within the present debate on dialogical online learning. The following sections are structured around each of the sub-RQs.

#### **4.3.1 Patterns of participants' activity: the features and structuration of interactions**

De Laat & Strijbos, (2014) recommend employing multi-method research approaches to triangulate and contextualize findings. General features of conversations are commonly identified by *size*, *density* (Fahy et al., 2001; Ridley & Avery, 1979; Zhu, 2006) *duration* (Im & Lee, 2004), and *pace* (Hesse, Werner, & Altman, 1988; Preece & Maloney-Krichmar, 2002; Wise, Zhao, Hausknecht, & Chui, 2014) of the interaction. They help determine *structural features* such as overall participation patterns and individual involvement and examine *interpersonal dimensions* of the conversation such as proposed by Henri (1992) and subsequently developed by others. These elements of structuration of the conversation lead to the first research question: ***What are the patterns of member's activity and interpersonal interactions observed in the MDTs on the platform (RQ1a)?***

*Density and variation of intensity* allow for the interpretation of the effects of interventions made by both moderators and participants as well. Furthermore, *individual involvement* and *roles* taken by participants (Ren,



2007; Schneider, 2013; Sun, Pei-Luen Rau, & Ma, 2014, Locke 2016) relate to the question of possible effects of co-construction and conflict situations on patterns of interactions, access to the conversation and engagement of participants. As well, *cohesion* (Henri, 1992), *topical persistence* (Fahy et al. 2001) and *turn taking* (Wiemann & Knapp, 1975) relate to the responsiveness in the conversation, i.e., the extent to which participants responding to each other's contributions (cohesion and reciprocity), while maintaining equal access (turn taking) and focusing collaboration on common issues (topical persistence).

Research addressing issues related to the composition and structure of learning networks, along with their content and activities are highly relevant to analyze how teachers learn through conversation (de Laat & Strijbos, 2014). Participants' *position in the network* of interactions have been explored by investigating their *degree of centrality* (Hytönen, Palonen & Hakkarainen, 2014), or their position as a *node* in the conversation. Thus, the researcher goes beyond looking at the conversation in linear form, but examines it by the lens of its connections – analyzing how messages are attended to, who is speaking and who is listening, in what order, etc.

Finally, *strong and weak ties* may tell us about the intensity of inter-participant interaction, in a way that strongly-tied participants communicate more frequently, about more topics (*relational multiplexity*) (Granovetter, 1973; Haythornthwaite, De Laat, & Schreurs, 2016). Strong ties between actors are important because they elicit ease of self-disclosure, in their communications and a larger amount of reciprocity in the give and take of their relationship (Haythornthwaite, De Laat, et al., 2016). Social network studies have found that strongly tied actors tend to be similar to each other, more than weakly tied actors: homophily (degree of similarity) influences establishment of ties and the development of interactional networks (de Laat & Strijbos, 2014). This arises both from the ease of interacting with people who understand the same principles, processes, specialized language, and with the similarity that develops over time, namely in groups that interact over a significant period of time (Haythornthwaite, De Laat, et al., 2016).

These questions of *ties and reciprocity* are essential and have significance not only in the area of structuration of the conversation, but as well it has important implications for motivational factors (see section 6.2.2.8 on *accountability*) for members' engagement, as well as for the establishment of a democratic culture (see section 2.5, on *positive interdependence*). It is therefore a significant aspect of all three RQs.

#### **4.3.2 The relation between the patterns and nature of interactions and the depth and quality of co-construction in the conversation**

Toikkannen and Liponen (2001) found that density and centrality by themselves did not predict the production of meaningful conversation. For this reason, the current study relies on the combination of several dimensions, as mentioned above, to pose our second research question: ***What do the patterns indicate about the nature of interpersonal interactions as they relate to the depth and quality of co-construction in the conversation (RQ1b)?***

Authors have linked strong individual involvement (Ren, 2007; Schneider, 2013; Sun, Pei-Luen Rau, & Ma, 2014; Locke, 2016), cohesion (Henri, 1992), turn taking (as defined by Wiemann & Knapp, 1975), and high topical persistence (Fahy et al., 2001) to quality collaboration and co-construction of knowledge. Collaborative, cognitive, and emotional aspects of online collaboration have been studied mainly among students in secondary and higher education, in relation to the quality of knowledge construction observed amongst learners (Gunawardena, 1997; Lockhorst et al., 2010; Newman, Webb, & Cochrane, 1995; Zhu, 2006). Authors have shown that online activity may support the *ability to instigate and sustain, critical thinking* in a community of learners (deNoyelles et al., 2014; Garrison, Anderson, & Archer, 2001; Järvelä, Malmberg, & Koivuniemi, 2016; Järvelä & Renninger, 2014; Rourke, Anderson, Garrison, & Archer, 1999). These theoretical contributions may be adapted to the context of conversational, non-formal CPD and to analyze asynchronous discussion threads in CPD settings.

Socially shared regulation frames the activity of meaning making, including: kinds of shared content, exchange flow, and awareness of learning process (Järvelä et al., 2014). In terms of regulation and the relation between interpersonal interactions and depth and quality of collaboration in the conversation, cohesion is interpreted in line with both, the degree of convergence, divergence, and congeniality (Locke, 2016; Locke & Daly, 2007) observed in the conversation, and also the duration to get insights on the effect of time on the structuration and regulation of the conversation (Hesse et al., 1988; Wise et al., 2014). These concepts refer to the extent to which participants appear to be achieving consensus, or common ground (Mäkitalo, Häkkinen, Leinonen, & Järvelä, 2002), or 'a kind of discursive alignment' (Locke, 2016, p. 107). *Congeniality* represents the extent to which participants in the conversation appear comfortable with

divergence and remain respectful even when they disagree. Discursive alignments incite different patterns in the conversation and participants may treat each other differently, in terms of attitude and behavior, when their ideas are, or not, aligned. Therefore, the relation between incidents of conflict and controversy and the quality of the collaboration are of particular interest to this study.

In high-level conversations, participants may go yet further into the discussion and start linking ideas to negotiate meanings and come to new understandings, both collective and personal. Activities such as comparing information, synthesizing, help to identify and summarize agreements and disagreements. These are important components of engaging in *co-construction of knowledge* and *meaning making*. When this is done inclusively, it becomes a foundational element supporting PLD for education for democracy (Huber & Mompoin-Gaillard, 2011). Key elements in the Pestalozzi Community exploration of education for democracy are values, ethos, beliefs, and assumptions held by the participants, which underlie the discourse. These elements are essential in the activity of meaning making, defined as making sense of the world (Koschmann, 2003; Koschmann et al., 2005) by engaging in intersubjective dialogue (Suthers, 2006). These elements elicit investigation into *perspective-taking*, defined as activity in which participants question their own principles and values, but also, beliefs, personal theories, ambiguities; and engage in self-reflection. Such activity conveys self-awareness, and exploration of dissonance. Discussing the coordination of such perspectives, Häkkinen & Järvelä (2003, p.6) refer to “societal-symbolic perspective-taking” as the highest developmental level denoting “high-level discussion”.

One of the earliest of many knowledge development theoretical models of learning through online asynchronous discussion (Newman et al., 1995; Zhu, 1996; Gunawardena et al., 1997, Järvelä & Häkkinen, 2002, Lockhorst et al., 2003; Pena-Schaff & Nicholls, 2004), is Henri’s (1992) model that develops five dimensions of interaction to understand the quality of collaboration in online settings. Henri suggested the participative, social, interactive, cognitive, and meta-cognitive dimensions as all being worth noting, in which surface processing is distinguished from in-depth processing, in order to evaluate the quality of collaboration. Zhu (1996) and Newman et al. (1995) argue that the attainment of deeper levels of cognitive activity, or deep learning, can be studied via activities that may constitute indicators:

- When participants are stating opinion, agreement, expressing personal theories and standpoints, they are engaging in a mere activity of stating a position, without negotiating meaning and understanding.
- Whilst participants share observations, descriptions of practice, and information gained either through their experience or using existing theory and concepts for practical purposes, they can start giving mutual support by offering solutions, suggestions, and strategies. Thus, they go a step further into thinking for a practical utility (Newman, Webb, & Cochrane, 1995).

This is a theoretical construct which can enrich our understanding of the quality of knowledge construction in the conversation. Such a definition of the concept of co-construction of knowledge embedded in connections and content is consistent with the concepts of ‘apprenticeship in thinking’ (Rogoff, 1990) or ‘learning through practice’ (Lave & Wenger, 1991). This aspect of the notion of co-construction is relevant for this study, which is mostly characterized by horizontal interaction between peers. The collaboration denotes processes of negotiating meaning and coming to an understanding, with others and as importantly within the self, by discussing and contributing to the conversation, thus resulting in the shared construction of knowledge (Kanuka & Anderson, 1998) and societal-symbolic activity (Häkkinen & Järvelä, 2006; Häkkinen et al., 2003; Järvelä & Häkkinen, 2002).

Finally, *metacognitive statements* (Artino & Stephens, 2006; Henri, 1992; Gunawardena et al., 1997; Newman et al., 1995) also reveal new knowledge construction. In this study, metacognition is defined as in-depth and societal-symbolic activity that involves higher-order thinking skills and supports awareness of one's or others' communication in the context of the conversation. Such meta-cognitive activity reveals deeper types of knowledge-construction expected to be found in the data. Thus, the author evaluates knowledge construction processes in online discussions from the perspective of construction of knowledge as a social, dialogical process in which participants are actively involved in several activities, simultaneously.

#### **4.3.3 Moderators' role in shaping engagement and co-construction of knowledge**

Features of asynchronous discussion threads in online courses arise in a big part from its moderation (Locke, 2016) especially in larger groups (Coomey & Stephenson, 2001). One may then assume that participants' learning and

development also depends heavily on facilitation styles since moderation may be viewed “as another plausible factor that could affect ... knowledge construction in an asynchronous online discussion forum, as facilitators are instrumental in shaping or influencing the discourse” (Hew & Cheung, 2011, p. 306). Moderators’ stated role is to support the online collaboration of participants, guiding participants towards the *co-construction of knowledge* within learning activities (Gunawardena & Zittle, 1997; Hull & Saxon, 2009; Lockhorst, Admiraal, & Pilot, 2010). The research looks at moderation of the conversation in terms of styles, (i.e., attitudes, communicative behavior, and team arrangements), and content, (i.e., pedagogical orientation, questioning, and choice of topics). The study therefore directs its attention to the moderation (or facilitation) of online dialogue by posing the third research question: ***What do the patterns suggest about the moderators’ role to enhance engagement, and co-construction of knowledge (RQ1c)?***

Since conversation is a journey embarked on by participants without having a foreseen destination - it is an open-ended experience - it is interesting to view the conversation as a process of group progression, and the role of the moderator is here of crucial importance, and a central ingredient of PLD. Garrison, Anderson, & Archer’s (2001) - and others in their wake (deNoyelles et al., 2014; Gunawardena & Zittle, 1997; Rourke, Anderson, Garrison, & Archer, 2001; Rovai, 2007; J. A. Smith & Sivo, 2012), present a model of social, cognitive and teaching presence that offers a perspective to help understand how participants and moderators may embody different stances in the conversation, and may therefore contribute to shaping it towards co-construction of knowledge.

Relational issues can strongly influence interaction, task engagement, and learning and when “negatively balanced emotions or negatively connotated utterances occur during conflicts, group members become less motivated to solve their assigned tasks and tend to demonstrate inferior performances” (Kirschner & Erkens, 2013). As moderators post prompts that are intended to invite participants to dig deeper into the questions that arise in the conversation, they also may prompt some anxiety, when, as a result of their actions, participants respond and may stray from their zones of comfort. Therefore, it is sensible to consider the *affective dimension* of online interaction in relation to moderators’ activity. Moving from conflict or controversy, to *constructive controversy* (Daele, 2013; D. W. Johnson & Johnson, 2009a), and to *convergence* and *structuration* (Locke, 2016; Locke & Daly, 2007) can be considered here as the work to be done in a democratic culture where everyone has a say (see also Bakhtin on heteroglossia, section 4.2.2). Such developments contribute to nurturing

the specific learning, teaching, and professional development agenda this study is interested in. Moderators' actions and the presences these actions embody, gain to be observed with these considerations in view.

Therefore, when considering the moderators' role, affective dimensions must be regarded as well as they may shape participants' engagement in the conversation. This presents a certain benefit in terms of advancing research in online learning. Emotional aspects of interpersonal interactions, and the affective role of shared stories and common knowledge for meaningful learning has been studied somewhat at the margin of research on online collaboration (Crook, 2000b; Del Soldato & du Boulay, 1996; A. Jones & Issroff, 2005; Kumi & Sabherwal, 2018; Preece, 2006).

The salience of *social messages* (expressions of feeling, self-introductions, jokes, compliments, greetings, and closures) may help to sustain interaction between participants (deNoyelles et al., 2014; Rourke et al., 1999, 2001b) by supporting conviviality. Angeli, Bonk, and Hara (2000) when conducting content analysis of an online higher education course, found almost a third of the content of the discussion were *social cues*. Therefore, the authors infer that variation in this category can be an indicator of the 'mood' of the conversation, from slow and calm to lively and agitated. Gunawardena (1997) argues that effective *social presence*, the degree to which a person is perceived as "real" in mediated communication, is a predictor of overall learner satisfaction in a text-based medium. Jokes, compliments, and greetings, i.e., what the author names *conviviality*, are essential supports to participants' engagement. Therefore, placing attention on designing techniques that enhance social presence are of importance.

This perspective recognizes that interactions, extended over time, provide opportunities for exchange in a way that they are sufficient to enable participants to develop interpersonal knowledge and stable relations and this has implications for building online communities. Such emotions have an impact on the level of respect, willingness to work together and engagement, and the way moderators model the communication will affect these. Therefore, the author takes into account this aspect of collaboration and co-construction of knowledge and namely the interplay between emotion and cognition (Järvelä & Renninger, 2014; Rogat & Linnenbrink-Garcia 2011), with regard to moderators' role.

Why is this important not only for the OPLC environment but also in relation to general question of PLD? Feelings and their deeper parent, emotions, are integral parts of teachers' choices. Emerging from Harris and

Lázár's study (Harris & Lázár, 2011) was 'the problem of reflection and time to reflect during a busy training course'. The opportunity to reflect in a structured way was an emphasis of the Pestalozzi Programme. This aimed to enable trainees to see the value of promoting democracy in education since lack of time to think deeply enough about the issues would certainly result in them failing to engage with difficult issues. There is an important difference between *action-oriented* - or performance-oriented (Mansvelder-Longayroux, Beijaard, & Verloop, 2007) and *meaning-oriented* reflection (Hoekstra, 2007); teachers, who have little time for reflection, will often go directly from the question "what did I think" directly to the question, "what did I do", thus avoiding or missing the questions "what did I feel?" and "what did I want?" (Korthagen, 2017, p. 394). If their engagement in conversation in such an OPLC brings them to consider the affective dimension of their practice, it may help not to "skip the deeper understanding of the meaning of the situation under reflection" (op. cit., p. 394). Supporting deeper reflection and self-awareness, with the guidance of moderators, encourages transformative action. The assumption behind this being that teachers will become more effective *if all the questions are considered, including feeling and emotion* (Korthagen, 2017).

#### **4.4 Factors that motivate participants to engage in the conversation for their professional development**

A specific aim of the research is to understand what are the factors that motivate teachers to engage, on a voluntary basis, in online professional learning communities (OPLCs), to learn about and through democracy in education. Why do educators engage in the conversation? What tempts them or pushes them to participate in their free time – often late at night even on Sundays? What environment or ecology of learning is conducive to their continued engagement? Can some of the findings be related to how participants evaluate the usefulness of the activity and perhaps also on personal benefits they acquire through participation that persuades them to remain active? If important gaps in research have been filled in the last years concerning motivation relative to the potential and challenge of successful online collaboration (Crook, 2000a, 2012; Järvelä et al., 2014), other areas have been neglected such as the metacognitive, social, motivational, and emotional aspects related to being/becoming aware of how one learns alone and with others (Järvelä et al., 2014). Nothing should be taken for granted in this area. For example, Crook (2012) warns that one needs to remain careful about supposing that collaborating is the only and

always the best way to learn and the gap still largely remains concerning research on motivation to engage in informally structured, conversational, networked, learning spaces in which participation is voluntary (Mompoin-Gaillard & Rajić, 2014).

In a context where there is apparently more added pressure and demands on education, as we move further into the 21<sup>st</sup> century, and thus a clear call for teacher development, online means are highly relevant and attainable. The opportunity presented by such means of PLD can be significant and its potential merits researching, especially understanding what motivates teachers to engage in conversational learning. Such means allow for the participation of professionals to “learn together at a time, place and pace that suits them” (C. Jones & de Laat, 2016, p. 51). The author of this thesis questions Jones and de Laat’s appraisal that they are “inexpensive” considering the necessary investment in time and moderation that is required in such spaces. Because engagement in OPLCs represents a big investment, the question of participant engagement as a motivated activity arises prominently, leading the researcher to pose the second research question. ***What factors interact to motivate participants to engage in the conversation for their professional development? (RQ2, “the why”).***

In this study, *engagement in conversation* is viewed as a *motivated activity* on behalf of the community members. As mentioned above, an ecological perspective is taken (Crook, 2000a; Jackson, 2013; Siemens, 2007), i.e. the research considers the settings in which the collaboration gets organized –“the tide in which we swim” - as the starting point for its analysis and investigates what types of affordances are needed for an OPLC’s potential to express itself fully. For this, the content of online conversations in the OPLC is analyzed for the presence of *self and social regulatory processes*, motivational statements, and inferences.

This leads to several sub-questions:

- ***What benefits do participants acquire through their engagement in continuous online conversation (RQ2a)?***
- ***What discernible factors contribute to participants’ motivation to engage in online conversation (RQ2b)?***
- ***What factors may determine the extent to which participants remain active? (RQ2c).***

Assessing motivation is particularly challenging with regard to the fact that one can only infer the presence of motivation from behavioral



indicators and speech acts observed (Hartnett et al., 2014; Schunk et al., 2014). Activity is an essential part of motivation. Here, the activity on the platform is studied to infer the motivation of participants, through an inductive and multiphase method (see section 5.3.2) of analysis of transcripts of the conversations, to infer the forms of motivation that push educators to engage and continue being active in the OPLC. Depending on the role played by the individual as a member, learning within a community can be either a passive or a proactive experience (Audran & Simonian, 2009), where participants seek information (posture of consumer), distribute it (posture of producer) and exchange it (posture of collaborator). Within such proactive and responsive activity, the collective wisdom of the group shapes individuals' understanding of the community and its potential (Kennedy, 2005). By using the current data on the platform to infer motivation the author can only make interpretations about the active members and not the passive participants. Extensive background information on the program and participants, completeness of the existing data set, and triangulation allowed for addressing that limitation to a large extent (Doolan, Winters, & Nouredini, 2017; Heaton, 2004; Johnston, 2017; Mitchell, 2015). The following sections are structured around each of the sub-RQs.

#### **4.4.1 Benefits of engagement in the conversation within the OPLC**

Initially, the model chosen for this study was self-determination theory (SDT) (Deci & Ryan, 1985). Regarding SDT, our study does not focus on whether motivation is intrinsic, extrinsic, or anywhere along the continuum between more or less self-regulated forms of motivation. This is because engagement in the Pestalozzi community is not rewarded by any external benefits such as grades or certification in the systems the teachers work, and therefore the author assumes that the motivation to engage is therefore largely *self-regulated*. What the author asks is: ***What benefits do participants acquire through their engagement in continuous online conversation (RQ2a)?*** More relevantly to this aim, SDT posits that the degree to which individuals express self-determined forms of motivation depends on whether their innate needs are met by factors within the learning environment. These categories of needs are *autonomy* (to feel that we have a degree of control over our actions), *competence* (to develop and demonstrate achievement and mastery of important tasks), and *relatedness* (to have a sense of connectedness with others and belonging to community).

As seen in section 4.3.3, teaching is a profession in which feelings and motivation play an essential role (Korthagen, 2017). Evelein, Korthagen, and Brekelmans (2008), also basing their research on SDT, found relations between the degree of fulfillment of these basic needs in teachers and the quality of their classroom behavior. One can therefore link what teachers want and what they need as a motivational dimension of teacher PLD. As a result, according to Korthagen, a teacher's concern is generally not how to apply theory to practice, unless the theory is directly useful to the problems faced in their classrooms. Perhaps then, if the OPLC gives satisfaction of some of these needs then change in practice is more likely to happen? Because teachers in the OPLC bring in their own stories to fuel the conversation, an assumption is that they are bringing in what they deem useful for their practice.

However, though useful for building the theoretical foundation of this aspect of the study, the SDT model cannot in of itself do adequate service to understanding the richness of the content and context of the conversation. The SDT model can only partially support an analysis of the motivational factors visible in participants activity, therefore the author sought for other bodies of theory specifically centered on the issue of analysis of asynchronous online discussion and design strategies to enhance knowledge building through engagement in conversation. This field of research is at the same time extensive and scattered, families of research co-exist in parallel with little cross reference: for example, the Networked Learning research community (de Laat & Strijbos, 2014; Haythornthwaite, Andrews, et al., 2016; C. Jones & de Laat, 2016; Locke, 2016) hardly intersects with the CSCL or the CMC research community (De Wever, Schellens, Valcke, & Van Keer, 2006; Dillenbourg, 2002; Garrison et al., 2001; Gunawardena & Zittle, 1997; Järvelä & Hadwin, 2013; Kreijns, Kirschner, & Vermeulen, 2013; Lockhorst et al., 2010; Strijbos et al., 2006). Thus, other studies centered on motivational aspects relevant to online learning and collaboration complement the framework. Some very specific factors have been studied and the aspect of *curiosity, feedback and flow* seemed most relevant to the case study of the Pestalozzi community. A brief approach to these concepts creates a broad picture of an ecology of learning that supports engagement as a motivated activity.

*Curiosity* is one of the dimensions brought to attention by Keller (1987, 2008) who stated how surprising participants is central to facilitation tactics, similarly as stimulus material or what Phillips names *hooks* (Phillips, 2001), that spark participants' interest. Also the concept of *optimal challenge* is a way to envisage challenge within the conversation, and the

integration of challenging tasks for supporting interest (Järvelä & Renninger, 2014). Optimal challenge offers manageable levels of risk that motivate participants to engage at the edge of their self-confidence and build their self-efficacy (Bandura, 1977).

*Feedback* was noted by several authors as crucial to motivation and included in frameworks presenting features of collaborative learning (A. Jones & Issroff, 2005). Feedback and its characteristics are seen as having possible effects on participants' sustained engagement in the conversation (Hara et al., 2000; Mäkitalo et al., 2002), on negotiation of meaning (Dillenbourg, 1999), on sympathy and trust in the community when the feedback is supportive (Mäkitalo et al., 2002; Preece, Feng, & Lazar, 2004; Wegerif, 1998). Mäkitalo (2002) argued that in deeper level discussions, feedback was used more often than in other types of discussions. *Scaffolding* is a type of structural feedback (Schellens, Van Keer, & Valcke, 2005) that supports learner motivation (Azevedo, Johnson, Chauncey, & Burkett, 2010; Järvelä & Renninger, 2014). It refers to supports, provided by peers or moderators, that sustain the development of self-regulated learning (Järvelä et al., 2014) by bringing in participants' experiences and interactions (Järvelä & Renninger, 2014), knowledge and by promoting metacognition and learning strategy procedures (Hadwin et al., 2011). When feedback and scaffolding are just right, they support the construction of collective and individual goals in the community, and enable self-regulation and engagement (Hadwin et al., 2011; Järvelä & Hadwin, 2013)

*Flow* (Csikszentmihalyi, 1990), is a subjective state of involvement and enjoyment, where open systemic goals scaffold emergent motivation. This state elucidates in part the holistic sensation of total engagement that may be felt by subjects when they sustain their engagement over long periods of time, such as observed in the data. The theory of flow is relevant to these instances where enjoyment is obtained from creating a new way to describe reality and from interaction processes sustaining goals such as cultivation of values, identifications and ideologies in the conversation. This raises the question of the relation between individual needs and cognitive engagement and is one of the entry points to study links between contextual factors, individual needs, and engagement.

On the other hand, interest in why participants do not engage can be enlightening as well. Schneider et al. (2013) and Sun, Pei-Luen Rau, & Ma (2014) propose models that present the phenomena of covert participation (that they name 'online lurking') and the effect of *epistemic curiosity* on 'de-lurking' behavior - moving from covert to overt participation - that may help

predict online behavior based on characteristics of participants. Without going to a large extent into such psychological specifics, these models support the analysis of motivation by giving insights on non-engagement, i.e., the motivation not to engage in conversation and remind of non-engagement as a valid form of participation: it highlights how participants of an online forum engage in posting or remain as passive readers. The author acknowledges that both may find benefits to these actions.

#### **4.4.2 Factors that contribute to participants' motivation to engage in online conversation**

For several years, the chief 'expert-driven model of 'teaching' professional development has been criticized' (C. Jones & de Laat, 2016, p. 55), with practitioners and researchers calling for a broader service to other aspects of what professional development entails, such as "anticipating the changing nature of work practices" and "locating learning not through formalized activities but through the exigencies of practice with peers and others, drawing on expertise that is accessed in response to need" (C. Jones & de Laat, 2016, p. 55). The author of this thesis calls for future attention in research to the social and cultural aspects that characterize professional learning and especially the role played by connectivity in this context. Most importantly, in such collaborations the type of learning that occurs is relational (Ingold, 2000; Lave, 2012), and social (Lave & Wenger, 1991; Wenger, 1998).

People develop interconnected relationships that provide support, shared risks, trust, access to information and knowledge. These relationships result in an open and engaging social 'web' that facilitates learning, the development of professional capital, and how things get done (Cross and Parker 2004; Christakis and Fowler 2009). (C. Jones & de Laat, 2016, p. 55).

Studies report that online courses in higher education often fail to engage learners (Artino, 2007; J. Broadbent & Fuller-Tyszkiewicz, 2018; Levy, 2007; Paulus & Scherff, 2008) and many report 'lack of interactivity' as a main factor of attrition. For these reasons, the study of motivational factors is important, as is the specific study of interaction in online spaces, which brings the author to the fourth research question: ***What discernible factors contribute to participants' motivation to engage in online conversation (RQ2b)?***

Engagement in informally structured and conversational learning environments is the result of *intentional action*. It appears that learners' motivation, and engagement are often proportional, meaning that with developed interest, there is increased motivation and more effective engagement (Järvelä & Renninger, 2014). Online collaboration that features genuine engagement of participants will stimulate *socially shared regulation (SSRL)*, as well as *self-regulation* of learning. This occurs when groups regulate together as a collective, such as when they construct shared task-perceptions or shared goals (Järvelä et al., 2014; Panadero & Järvelä, 2015). SSRL refers to processes by which group members regulate their collective activity and involves interdependent or collectively shared regulatory processes, beliefs, and knowledge (e.g., strategies, monitoring, evaluation, goal setting, and metacognitive decision making) orchestrated in the service of a co-constructed or shared outcome (Hadwin, Järvelä, & Miller, 2011).

The question of how emerging technologies can be leveraged to support learners and collaborators to effectively plan, monitor, and adapt their own, their peers', and collective engagement (Järvelä & Hadwin, 2013; Kirschner & Erkens, 2013) needs more attention. This is to say, the metacognitive, social, motivational, and emotional aspects related to being/becoming aware of how one learns alone and with others in online settings, have been somewhat neglected.

Whether physical or mental, activity is an essential part of motivation, to be motivated means "*to be moved to do*" something (Schunk, Meece, & Pintrich, 2014). As Jackson (2013) argues, "processes in ecosocial systems do not happen by themselves, they are created by people who have the will and capability to create them" and people don't engage in collaboration, set goals and plan work strategically 'if they are not motivated by strong personal agency' (Jackson, 2013, p. 4). In other words, motivation involves elements that provide the impetus for purposeful action with an *intended* direction. Inherent in this definition is the notion that motivation is a dynamic state (de Barba, Kennedy, & Ainley, 2016), not born from some fixed conditions but evolving during the activity we engage in, and thus continually shaping an emerging ecology.

#### **4.4.3 Factors that may determine the extent to which participants remain active**

If some existing research focuses on what motivates participants to engage in online courses, none that were found answer the questions of why

education professionals would engage in *voluntary, informal, and conversational* professional learning activities. Therefore, the author investigates emergent characteristics associated with learning through conversation as well as the environment within which the exchange takes place. This is a relevant theoretical approach because engaging in such mediated collaborative action in an OPLC provokes responses, of not only cognitive, but as well socio-cognitive and affective nature, that are distinctive to online forms of encounter. As Crook (2000) highlights, “Such responses could then be relevant to the motivation of greater (or lesser) task engagement” that “determines how far cognitive skills get mobilized and deployed” (Crook, 2000b, p. 162).

The theoretical foundations brought by Kumi & Sabherwal (2018) were helpful to develop a perspective on values and norm creation in online communities through the development of social, cognitive and relational capital. It brings attention to members’ sense of responsibility nurturing their motivation to engage in caring for the community. Also, Preece’s model highlights how technical and human designs may merge into the intentional creation of conditions that support participants’ motivation to engage. The model includes proposing design-principles to support collaboration in computer mediated communication; technical design rests on the importance of sociability, trust, empathy, and tending to the threshold between outsiders and insiders. The study is interested in finding such sustaining elements in the data. Therefore, the author asks ***What factors may determine the extent to which participants remain active? (RQ2c).***

The author scrutinizes how teachers enter the conversation and to what extent they sustain their investment under certain conditions. Following Crook’s work (ibid.) underlining that starting and continuing such enterprise “will involve both a cognitive and a motivational dimension” (Crook, op. cit., p.161). The RQ raises the issue of how the motivational dimension of participant engagement, and the extent to which participants’ experience of negotiating shared understandings in conversation with peers, is potent and closely associated with remaining active on the OPLC. The study is interested to discover what in this experience supports teachers’ continued involvement, i.e., the factors supporting their motivation to pursue their engagement

#### **4.5 The benefits participants take home from their engagement in the conversation and what this means for teacher practice in the classroom**

The designed space, the context of the OPLC, aims to model a democratic culture through the type of interactions, norms and references that occur in its midst. The study is focused on the possible impact of participants' engagement in the conversation on their continued practices in classrooms. The author looks at how professional, personal, practical and pedagogical knowledge is constructed towards a new practice, or a changed practice. For this, and the topic being wide, the author has chosen to narrow it by investigating the OPLC's democratic microculture in the context of an particular example of participants' representations of a democratic practice: that is what is perceived by participants as a 'democratic practice of assessment'. The backdrop of this aspect of the research concerns education for democracy and competences for democratic culture. Therefore, a foray on the theoretical background of the PP is useful to complete our conceptual framework. As stated in section 2.5, Rousseau, Pestalozzi, Dewey, Rogers, Illich, and Freire were the most referenced thinkers in the PP, in which emancipation and freedom of thought were main concerns.

Democracy in the context of the OPLC, is understood first in a Deweyan sense: democracy is seen as a principle embedded in everyday circumstances, , in which values of inclusion, participation, and freedom are central, interconnected and lived in our daily experiences.

Democracy is much broader than a special political form, a method of conducting government, of making laws and carrying on governmental administration ... It is that, of course. But it is something broader and deeper than that ... It is... a way of life, social and individual. The key-note of democracy as a way of life may be expressed ... as the necessity for the participation of every mature human being in formation of the values that regulate the living of men [and women] together ... (Dewey, 1939) (brackets by the thesis author).

In the sense that Parker Follet (1924) advanced, democracy is also seen through looking at the *locus of power* which is an interesting point of view concerning educators' capacity to become change agents. Parker-Follet,

distinguishes two forms of power with different loci: she characterizes *coercive power* as power-over and *co-active power* as power-with:

What is the central problem of social relations? It is the question of power... But our task is not to learn where to place power; it is how to develop power ... Genuine power can only be grown... for genuine power is not coercive control, but coactive control. Coercive power is the curse of the universe; coactive power, the enrichment and advancement of every human soul. (Parker Follett, 1924, pp. xii-xiii)

Thus, for both authors, democracy is more than the sum of its institutions. It is about the ways in which we decide to live and work together, about how we share power to nurture democratic participation. Dewey speaks of a segregation, originating in ancient Greek philosophy, between culture and utility, that is historical and social, based on the fact that truly-human life was lived by the few who subsist on the labor of others (Dewey, 1916, 1938). This has profoundly affected a psychological doctrine and political view of a permanent division of human beings into those capable of reason/knowledge having *chosen ends* and those capable of desire/work having *dictated ends*. Translated into education terms, this resulted in a division between liberal education devoted to knowing for its own sake and the useful practical training for occupation devoid of intellectual or aesthetic content. The problem of education for democracy is then, according to Dewey, to do away with this dualism.

Nussbaum (2010, 2013) endorses this view as she makes a plea for the return of the arts in education. Art being a medium to learn the aspects of social life, emotions, and the compassion to see all citizens as human beings enjoying equal rights and consideration, is vital to the development of *social imagination*. It is easier to treat people as objects to be manipulated if you have never learned another way to see them. Nussbaum regrets the provisions for the arts being cut in favor of technological subjects in school curricula and higher education institutions. She then deplores that education is moving closer and closer to the growth model without much thought about how ill-suited it is to the goals of democracy. (The growth she refers to is not growth in the Deweyan sense, as something that allows one to be capable of further learning and experience, but growth in the economic and technological sense). Education for democracy, according to Nussbaum requires compelling subject matter needing to involve the contributions of history, geography, literature, culture, politics, and religion,



in an interdisciplinary approach. This is an education that is complex in its *pedagogical demands*. Citizens cannot relate to a complex world by factual knowledge alone (transmission). Democracy calls for citizens who are capable of *narrative imagination and empathy* acquired through engaging with complex material.

These works indicate that there are different ways to envisage education for democracy, with authors highlighting different needs and aspects. Thus, the third research question centers on these issues and specifically, asks: ***What are the benefits participants take home from their engagement in the conversation in relation to the perceived transformation of teacher practice in the classroom ('the 'what for')***? The question allows us to delve deeper into an understanding of what participants constructed for themselves as knowledge that is relevant for education for democracy. The author wishes to know what benefits participants take home, what tension these new take-aways may create and how they perceive that their engagement has mattered. Thus, the three sub-questions of RQ3 are:

- ***What type of pedagogical methods are perceived as appropriate for developing democratic competences among students and fostering a culture of democracy at school (RQ3a)?***
- ***Which are some of the tensions observed in educators' discourse when it comes to experimenting with innovation in education for democracy (RQ3b)?***
- ***How is engagement in the online professional learning community related to a perceived effect on practice towards democratic, inclusive practices (RQ3c)?***

Sant (2019) found eight types of ways in which *democratic education* is conceived of in literature, namely, elitist, liberal, neoliberal, deliberative, multiculturalist, participatory, critic, and agonistic (or activist), ranging from the more liberal to the more communitarian. She distinguishes a specific form which is *education for democracy*, in which deliberative and participatory discourses appear to be well positioned in the struggle to define "a new dominant democratic education to replace liberal democratic education"(p. 685). *Education through democracy* is another approach of democratic education, seen as a social reconstruction rather than a social reproduction. The struggle here is not to fix the meanings attributed to democratic education but rather to open the possibilities for new meanings.

The CoE's point of view is that democracy means a form of governance by - or on behalf of - the people and that it can neither operate without

institutions that are accountable to this form of governance, nor stay healthy without the development of a “*democratic civic culture*”. The term “democratic culture” emphasizes the fact that “[democratic] institutions and laws cannot work in practice unless they are grounded in ... democratic values, attitudes and practices shared by citizens and institutions.” (Barrett, De Bivar Black, Byram, Faltýn, et al., 2018, p. 71). The institutional context of the PP within the CoE is therefore at the crossroad of what Sant would define as:

- a *participatory* democratic education focusing on student voice, representation, autonomy and responsibility;
- a *critical* democratic education pursuing equalitarian and inclusive meanings in education settings focusing on transformative, empowering and emancipating pedagogies;
- a *multicultural* democratic education, giving importance to intercultural competence and acceptance of dialogue in diversity for democracies.

Since unless citizens themselves are active and committed to democratic values and attitudes democracy cannot exist, education has a central role to play to help young people, and adults alike, to acquire these. Education for democracy, therefore, aims to empower learners as autonomous social agents who can choose and pursue their own goals in life within the framework that is provided by democratic institutions and respect for human rights (Huber & Mompoin-Gaillard, 2011). The PP possibly moved beyond participatory and critical democratic education views to even *agonistic or activist* democratic education, at times described as ‘bold’ (Jarvis, 2012, p. 108), in which the expression of dissent divergence and conflict is seen as most formative and as manifestations of human uniqueness rather than a failure of understanding, and therefore as instances of diversity to be contended with. In section 7.4.2., the consequences of this state of affairs will be discussed.

The author has brought in the theoretical underpinnings of the PP in section 2.5. The PP, also grounded its approach to education for democracy in several theories of learning and pedagogy (Leclercq, 2011). It invited educators to complement specialist and subject-specific knowledge with transversal knowledge, skills and attitudes “to bear fruit for politically, socially, economically and environmentally sustainable, democratic societies in the Europe of today, and above all, tomorrow” (Huber & Mompoin-Gaillard, 2011, p. 11). Nonetheless, once this is said, not much is

resolved as to what this entails at the level of teaching, learning, and designing pedagogical approaches to attain these aims. With RQ3, the aim is to orient the investigation into what such pedagogies, mental models, tensions, and approaches could be. The Pestalozzi Programme Community of Practice views education for democracy, and its crucial aspects of prevention of discrimination and violence, *not as a thematic issue but as a process*, as a series of concrete actions that support better organization of teaching and learning. These processes are seen to help educators reflect on and prevent violent, discriminatory and anti-democratic structures (Arató, 2015; Mompoin-Gaillard & Lazàr, 2015b) in the classroom and in schools. Grounded with these theories, the program's proposition was that it is crucial to ask what the intention is, behind the aim of fostering and strengthening democracy. If we wish to achieve a society that is fairer, more humane, more creative, more mutually supportive, and less violent, we need to adopt appropriate methods of teaching. Therefore, the PP emphasized activating "the head, the heart and the hands" through learning by doing, while catering for all sensory channels and learning styles, and continuously reflecting on needs, aims and changes in thinking throughout the process. (Mompoin-Gaillard & Lazàr, 2015b, p. 12)

Because democratic values and competences cannot be acquired through formal teaching alone but need to be practiced, it is our interest to motivate teachers to engage in a process of lifelong learning and to support their individual responsibility towards improvement of practice and openness to transformation. The development of new competences and openness to new roles, fit for the challenges of our contemporary societies, can be planned by all participants involved in the learning process. This is done through the negotiation of aims, content, learning materials, assessment and program evaluation and generally deconstructing our notion of school curricula (Mompoin-Gaillard, 2015c). The program takes the ideas of collaborative knowledge construction and experiential learning for professional development and bridges it with the development of educational institutions and practices where the rule of law, human rights, education for democracy and respectful intercultural communication are important and become an integral part of the curriculum (Lázár, 2015a).

Backed by these theoretical perspectives, the PP invited members of the OPLC to treat each other in a way that models the attitudes, skills and knowledge and understanding (TASKs) that sustains democratic culture, power-with and power within perspectives. In one example, the charter of use (see Figure 5 section 2.4.2) that is made available to guide participants in their activity and interactions, relate to such attitudes and openness.

Therefore, strategies for CPD in such an OPLC build-in opportunities for 'learning in context': *learn through* democratic action rather than *learn about* democratic action.

In fact, it is a strategy of creating a *microculture*, where learning in a democratic context is endemic, is the point. The term microculture in the context of assessment has been used by Mottier Lopez (2008, 2015a, 2016) and is defined as the social interactions and the emergence of norms and references specific to a learning environment. The author adapts this concept for the purpose of adult education and the context of the OPLC. Together the participants discuss the processes of assessment, regulation, validation to co-create democratic approaches, and the challenges and tensions faced in their institutional frameworks. The identification of representations/mental models and patterns in teachers' exploration of approaches to classroom practice that supports a democratic education will be under scrutiny as well as how these are formed in the OPLC within its democratic microculture.

#### **4.5.1 Pedagogical methods perceived as appropriate for developing democratic competences among students and fostering a culture of democracy at school**

Some members of the OPLC were involved in conversation over several years (2010-2017), and as shown in section 4.3.1, this situation creates a homophily, in which homophily (degree of similarity) influences the establishment of ties within the community (de Laat & Strijbos, 2014). This has implications for diversity, acceptance, and democracy: how do moderators and participants welcome new members and the new texts, the new ideas they bring in? (See *legitimate peripheral participation* in section 5.3.1), how do they integrate and accommodate with new configurations of the group/community?

Here, the Bakhtinian concept of text-based open-ended dialogue is helpful to consider an ever-evolving, changing intertextual system, as the addressers and addressees change all the time. In online social spaces as OPLCs, members belong and form networks of interpersonal relationships that are continuously changing through the social interaction that takes place within the group (Kreijns et al., 2013). Teachers' contributions exist in relation to understandings that have developed through historic, social, and cultural contexts (Adie, 2012; Bakhtin, 1981) both within and outside of the community.

[The speaker] does not expect passive understanding that, so to speak, only duplicates his own idea in someone else's mind. Rather, he expects response, agreement, sympathy, objection, execution, and so forth (various speech genres presuppose various integral orientations and speech plans on the part of the speakers or writers). (Bakhtin, 2010)

The historical and cultural context, mediated by written language, grows as these relationships evolve and condition the composition and characteristics of the overt company (and possibly the covert company as well, but this is not the focus of our inquiry). Perhaps some feel more at home than others? Whose space is it? Who is privileged, who has power and who does not? These are legitimate questions, and they have an impact on possible ways in which participants may benefit from their engagement in the conversation (RQ2a). But then, these questions also have implications that pertain to *democratic culture*. The extent to which difference and divergence are accepted with congeniality (Locke, 2016), interacts with the degree to which the development of strong ties may prompt groupthink and thus hinder complexity, nuance and inquiry. This echoes Wenger (1998) who argues that through engagement, competence can become so “ingrained, and socially efficacious that it becomes insular: nothing else, no other viewpoint, can even register, let alone create a disturbance or a discontinuity” (p. 175). In such dynamics, a community of practice can represent an obstacle to learning by “entrapping its members in its very power to sustain identity” (ibid.). Then again, Haythornthwaite, De Laat, et al. (2016), citing Granovetter (1973), point out that the in-group aspect of strong ties can be balanced with the *strength of weak ties* connecting participants to outside sources of information, sensing and knowledge through those that they connect with more casually and infrequently and who may bring in information not already known in the *strong tie network*.

Thus, the author chooses to research the mental models of democracy in education, in two directions: firstly, investigating how the rhetorical space is created between participants, what kind of ‘addressivity’ is observed, and whether democratic values live in that space; secondly, researching ***What type of pedagogical methods are perceived as appropriate for developing democratic competences among students and fostering a culture of democracy at school (RQ3a)?*** For this, the study explores participants’ discourse on their practice as well as the way they co-construct conceptual

understandings and practical knowledge *within both the situated context of their classroom teaching and that of the OPLC.*

#### **4.5.2 The tensions observed when it comes to experimenting with innovation in education for democracy**

Thus, learning in the context of the OPLC changes the very context itself: the modeling of democratic practices creates the democratic microculture of the community itself. The experience is continuously 'recreated'. Fullan, citing Elmore (2004), rightly notes "the problem [is that] there is almost no opportunity for teachers to engage in continuous and sustained learning about their practice in the settings in which they actually work" (Fullan, 2006, p. 73). Educators in the OPLC might not be able to experience the same – or similar – democratic cultures in their schools. They might meet power-over structures (section 4.5), that may make their intentions to move to power-with, or co-active power (section 4.5), rather than coercive power (Parker Follett, 1924; M. K. Smith, 2002), impossible. This situation substantiates the importance of teachers' discourse, within the conversation, and the mental models that emerge relative to their own educational context. According to Elmore, "cultures do not change by mandate; they change by the displacement of existing norms, structures, and processes by stakeholders, and the process of cultural change strongly depends on *modeling the new values and behavior that you expect to displace the existing ones*" (Elmore, 2004, p. 11).

Teachers, work in complex environments in which they come back after an experience in CPD; then commences an "interplay between their ideas as trainee, the ideas of the tutor and the ideas from their department" (context, institution, school, ministry, etc.), and these "create competing demands on teachers" (Harris & Lázár, 2011, p. 101), and therefore tensions.

Changes and challenges within the system of education require immense energy, vision and understanding. Engaging constantly with new ideas, new thinking about education and dealing with the various inertias of change, when taken together, presents a formidable task even if the desire for change is present ... [practitioners] cannot, despite their potential interest, take time to immerse themselves in the ideas and development required by the complex task of attending to possible futures. (Jónasson, 2016, p. 9)

Such *inter-contextual* perspectives lead the author to consider: ***Which are some of the tensions observed in teachers' discourse when it comes to experimenting with innovation in education for democracy (RQ3b)?*** Tensions might emerge for participants between the intention to develop a democratic practice and the environment in which these practices occur, schools and education systems in the member states, that are for the most part sub-democratic contexts (by this the author means that school and systems-wide structures of education remain for the most part hierarchical and not horizontal, and teacher voice is scarce in the decision-making processes).

One challenge is to build conditions conducive to the empowerment of teachers in their own practices and contexts, with regard to a common project, collectively negotiated and objectified by rigorous research approaches. (Mottier Lopez, 2015c, p. 8) [non-official translation by the thesis author].

#### **4.5.3 The perceived effect of participants' engagement in the OPLC on their progression towards democratic, inclusive practices**

Again, the topic of democracy being far reaching and complex, the author has chosen to narrow the investigation to one specific practice, that is the practice of assessment. There is not much literature putting assessment and democracy in joint perspective. In higher education settings, assessment is habitually imposed on students as a mandatory, high-stakes activity (Mottier Lopez & Girardet, 2019). Some mental models dominate the debates about assessment at a particular time or place. Thus, nowadays it seems widely recognized that the formative approach is relevant if one wants to sensitize learners to take responsibility for their own learning: research has shown how involving students in evaluation processes is a means to empowerment where they may take charge of their learning for their own, present and future, life (Black & Wiliam, 1998a; Boud, 2000; Boud & Soler, 2016; Kucey & Parsons, 2017; Siarova, Sternadel, & Mašidlauskaitė, 2017). The author uses interchangeably the terms assessment for learning and formative assessment (which is the term most used by the participants of the OPLC). Based on the work of Black and Wiliam (2009), the formative assessment approach is defined as follows:

Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used

by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken in the absence of the evidence that was elicited. (Black & Wiliam, 2009, p. 7).

It therefore seems sensible to recognize that formative forms of assessment are better suited to socio-constructivist and relational understanding of learning, in which the learners develop autonomy and responsibility for their learning through self-, peer-, and instructor-based feedback (Broadfoot et al., 1999; Coombs, DeLuca, LaPointe-McEwan, & Chalas, 2018) and the push for change in education paradigms stem in part from the need to address issues of democracy, exclusion, xenophobia and discrimination (Siarova et al., 2017). Therefore, the perspectives of *assessment for learning (AfL)*, and its extension *assessment as learning (AaL)* (Sanz, 2010; Nunziati, 1999), are a relevant focus to discuss the issue of assessment and democracy. A process of assessment for learning offers so-called "authentic" assessment tasks (Wiggins, 1990) as noted by Mottier Lopez and Girardet (2015b) and one of the findings described in Mottier Lopez (Mottier Lopez, 2015b).

...we can no longer think of formative assessment and the regulation of student learning without involving the latter in the assessment and, more generally, without building a shared understanding of the meaning of the evaluation with all the partners concerned. (p. 28).

Thus, the teacher's judgment will be seen more often as a learning aid than as a sanction. On the other hand, the use of self-assessment and evaluation by peers, which complement the evaluation by the teacher, also goes in the direction of formative assessment (Broadfoot et al., 1999; Coombs et al., 2018). Many voices are raised in favor of a "paradigm shift" in evaluation made necessary by the fight against exclusion, against xenophobia or against discrimination (Siarova et al., 2017). The statement that it is possible to "share" the act of assessment with the learner goes into the meaning of developing a more democratic conception of assessment, or, at least, a slightly less authoritarian conception. One must consider to what extent the focus of AfL is on mastery of a subject or being able to 'pass' a subject. Some talk about AfL breaks with the culture of traditional rating, which ranks individuals among themselves (Cornu et al.,



2014), to promote an assessment that informs the student not only of the state of his or her acquisitions at a given time, but also more broadly - and importantly - on continuous progress. For example, if teachers retain power to grade, the question becomes whether AfL may qualify as democratic assessment; and if grading is maintained within AfL, does it become a practice that aims to produce - or unintentionally produces – primarily a means to inculcate students into the process of passing the exam?

Teachers striving for democratic assessment practice, will privilege activities, such as for example dialogue and conversation, with students that may help assess deeper understandings by developing the “sociocultural aspects of learning, the habits of collaboration and of working in and through a community” (Black & Wiliam, 2018, p. 557), activities that are foundational for democratic cultures.

For all these reasons, the perspectives of AfL and its extension, AaL, appear relevant to reflect on the question of the relationships that are established or that are to be established between pedagogy and democracy, between assessment practice and democratic culture at school. This is the theoretical backdrop against which the author poses the last research question: ***How is engagement in the online professional learning community related to a perceived effect on practice towards democratic, inclusive practices (RQ3c)?*** The question relates to democratic practice in a general sense, where assessment is taken on as an example for the purpose of this research, as explained already in section 4.5.

The Assessment Reform Group (ARG) model (Broadfoot et al., 2002), which is based on Black and Wiliam's (1998a) classroom assessment research and contributions of experts and associations from various backgrounds, recommends ten indicators of AfL. Although the ARG belongs to a British context that is driven by a *performativity and accountability regime*, there are ideas in the model that correspond to more humanistic views of education, associated with social constructivist theories of learning. In these views, mental models and assumptions that the learners use to understand a subject are characterized as complex and are socially co-constructed. This in turn signifies that the quality of relationship and interactions between teachers and learners are a critical aspect of the learning process and of a democratic practice. This form of assessment should:

1. be part of planning for teaching and learning.
2. focus on how students learn.

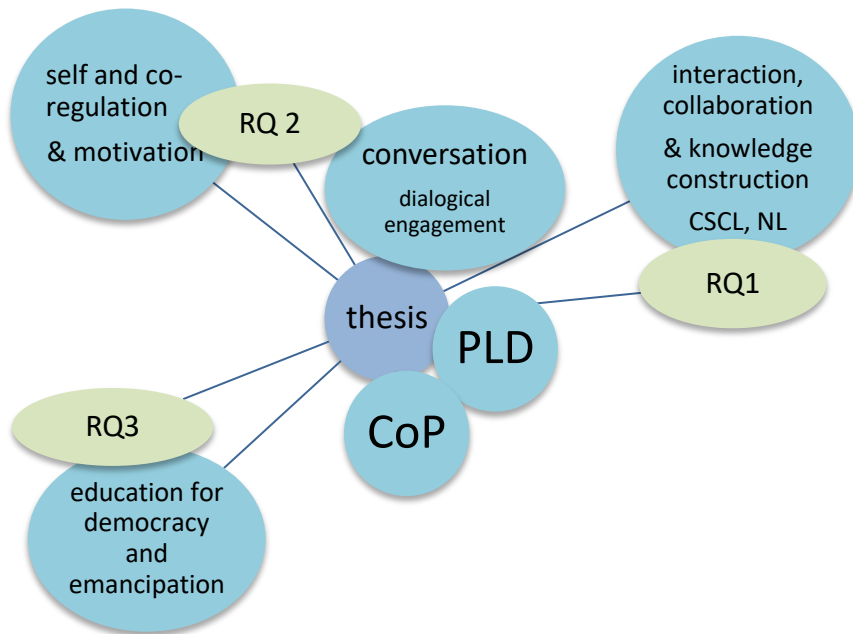
3. be recognized as a central element of classroom practice.
4. be seen as a key professional competence for teachers.
5. be sensitive and constructive because any evaluation has an emotional impact.
6. take into account the importance of learner motivation.
7. promote commitment to learning goals and understanding common criteria by which students are assessed.
8. provide the learner with constructive advice on how to improve their development.
9. develop the self-assessment of learners so that they can become reflective and self-governing.
10. recognize the achievements of all learners.

These principles of the ARG model can be identified through lexical and thematic indicators observed in the discourse of teachers to identify how the discourse on practice is organized (see methods section 5.3.2.2), but also to see if ideas are making their way among the participants, and if they plan to modify their practices after the exchange.

#### **4.6 Summarizing the conceptual framework**

The ecological perspective proposed in this research sits with an eclectic epistemology and methodology whereby efforts are made to bridge diverse elements of the research and address the complexity of the data and context. Ecology is chosen out of recognizing that there are complex interconnections, and this choice challenges the idea that the professional act of learning-to-teach can be investigated by studying unconnected, isolated bits.

Therefore, the study of the conversation as an ecology of learning for this case study lies at the crossroads of several theoretical areas. To convey the transcript's communicative richness, to allow it to be fully revealed, reliance on several theoretical constructs and fields was necessary. This was explained already in section 3.2 (Figure 8). Now the author wants to relate that same figure with the precise research questions that have been generated from the context and data as well as the theoretical landscape surrounding the study. Figure 9 visually represents where the research questions reside within the theoretical insights of the thesis.



**Figure 9** The different parts of the work in relation to the cited theoretical insights encompassed in an ecological perspective, noting both the three research questions and the different theoretical perspectives.

Not all these theoretical perspectives are harnessed at once. This summary outlines precisely and briefly what theoretical perspectives were most central to the work. The summary aims to integrate the various theoretical underpinnings *this time differently from how it was presented up to this point in Chapter 4*. Here, the theoretical perspectives are not presented in the order of RQs, but rather by weaving the similar and complementary elements from the diverse perspectives shown in Figure 9, and developed in sections 4.1 to 4.5. The following integrated presentation of the main ideas we can no longer think of formative assessment and the regulation of student learning therefore aims to offer a more holistic view of the theoretical elements that were most central to the study.

*Education for democracy* can be pursued in several directions. Addressing the whole learner, head heart and hands, and letting experience be a central entry point to learning are one avenue. Developing practices that ensure equal access to learning and promotes individual responsibility and accountability, interdependence and autonomy to learners are another

important aspect of democracy in education. Democracy calls for active citizens who are committed to democratic competencies, values and attitudes, and education has a central role to play to help young people, and adults alike, to acquire these. Because democratic values and competences cannot be acquired through formal teaching alone but need to be practiced, it is our interest to motivate teachers to engage in a process of lifelong learning and to support their individual responsibility towards improvement of practice and openness to transformation. This implies the negotiation of aims, content, learning materials, assessment and program evaluation and generally deconstructing our notion of school curricula. The development of new competences and openness to new roles for educators, who are fit for the challenges of our contemporary societies, can be supported. (Sections 4.1, 4.2.1, 4.5.1-3)

*Sharing the power ... shaping identities:* because there is a process involving identity formation through dialogue, conversation can result in murky boundaries between personal and professional development, and thus warrants the author's interest in discovering more about why teachers engage in OPLCs, how they do it and act within it, and for what benefit. Engagement in the conversation nurtures interactions in which participants experience inclusion when no one is ignored. They enjoy freedom in determining personal goals when power is shared (power-with, or co-active power) through horizontal interaction between peers. While participants, examine practices they find themselves confronted by their convergence, divergence and 'constructive controversies' and as a result develop their skills for congeniality seen as the ability to accept disagreement, mistakes and experimentation as a benefit for collective reflection. (Sections 4.1, 4.3.2, 4.3.3, 4.4.2, 4.5.1-3).

*Interaction, continuity, and ethos:* the conversation is characterized by the intensity of the relationships and the values that underlie those relationships. A community forges and transmits a culture, or microculture which defines norms, values and ideologies within which the members of the OPLC co-construct professional identities. To understand such processes, the researcher pays attention to the matter of context, to the consideration of evolving ideologies that underlie the discourses and may prepare future learning. Participant's freedom of choice steers them towards individual and collective goals that both require active individual responsibility of the community members. Learning, in a context in which democratic culture is the concern, will involve values inside the relational process. (Sections 4.1, 4.4.1, 4.4.3, 4.5).

*Professional learning is characterized by the social and cultural aspects* and especially the role played by connectivity in this context. Members of the community, anticipating the changing nature of work and its demands, negotiate the work to be done by educators in a democratic culture. Educators contextualize their professional identities, thus shaping the range of possible understandings they may gain of their practice. (Sections 4.1, 4.4.2)

*The conversation is open-ended:* here text-based, conversation is a journey that participants engage in without having a foreseen destination, no other set goals are present than those that the involved individuals bring about in the discussion. Utterances belong as much to the addressers as the addressees. There is a space for wondering and wandering together to find solutions to problems participants face. It is therefore an unplanned and continuous process, or a process of group progression, that in the best cases leads to interaction patterns showing active involvement, cohesion, flow, meta-awareness of the learning processes, all guided but not overly constrained by moderators' interventions (Sections 4.2.1, 4.3.3, 4.5.1).

*Socially shared regulation frames the activity of meaning making:* to attain co-construction of knowledge and deeper levels of meaning making certain ingredients are helpful. Social presence of participants, seen by the author as informality and conviviality, may be one of these ingredients as found in conversation (Section 4.3.2, 4.3.3, 4.4.2).

*The composition and structure of learning networks* is important to investigate because co-construction of knowledge is embedded in relations and content. Thus, construction of knowledge is here a social, dialogical process in which participants are actively involved in several activities simultaneously. Some types of structuration of the interactions are more supportive of deeper reflection and self-awareness, deeper meaning making and thus become transformative. Each participant is engaged in multiple relationships and interactions leading to interpersonal knowledge and in the best case to stable relations, that are sustained through social presence and beneficial interplay between emotion and cognition. (Sections 4.3.1-3)

*Affect and realness are key in relation to bonding:* the use of social messages supports the degree to which a person is perceived as "real" in mediated communication which in turn boosts participants' level of respect and willingness to collaborate. Relational issues can strongly influence interaction, task engagement, and learning; hence, shared stories are key to supporting shared affect that in turn supports the creation of common

knowledge, and the metacognitive activity for meaningful learning. Through shared stories an inter-contextual and intertextual space is created in which the real-life contexts, and the tensions teachers face when pondering innovation, are invited into the conversation. (Sections 4.3.3, 4.4.3, 4.5.1, 4.5.2).

## 5 Methods

The work is a large-scale case study, the case being the Pestalozzi Programme OLPC, based on activities and data, neither of which were planned or collected for research purposes. The researcher followed an iterative process to analyze the data, weaving inductive and theoretical work, and specifically using theoretical material to construct a methodology for the observation of interactions, synergies, and dynamics in the data.

In selected moderated discussion threads (MDTs), a multiphase process of coding (Häkkinen, 2013) using thematic analysis (Braun & Clarke, 2006) was employed for the qualitative analysis of the sampled data. Pattern-centered analytic techniques were used, to gain information about interaction, collaboration, and the diversity of participants, specifically around how individuals respond to opportunities afforded by the educational context and how these differences affect their experience of the OPLC. Such information is essential for creating *finely tuned interventions that target specific aspects of the environment*. What is meant by ‘multiphase method’ is that the data was analyzed with an initial inductive phase; and then, guided by the outcome of this phase, theoretical contributions were selected, and the data was analyzed using a montage of observation techniques gathered, adopted and adapted for the purpose of this research. Moreover, a quantitative method was used for the study of the features of the collaboration (RQ1), to understand the phenomenology of the conversation and by this to make sense of the interaction between the community members. The term phenomenology is here used in the sense of discovering essential properties and structures of participants’ experience of the conversation.

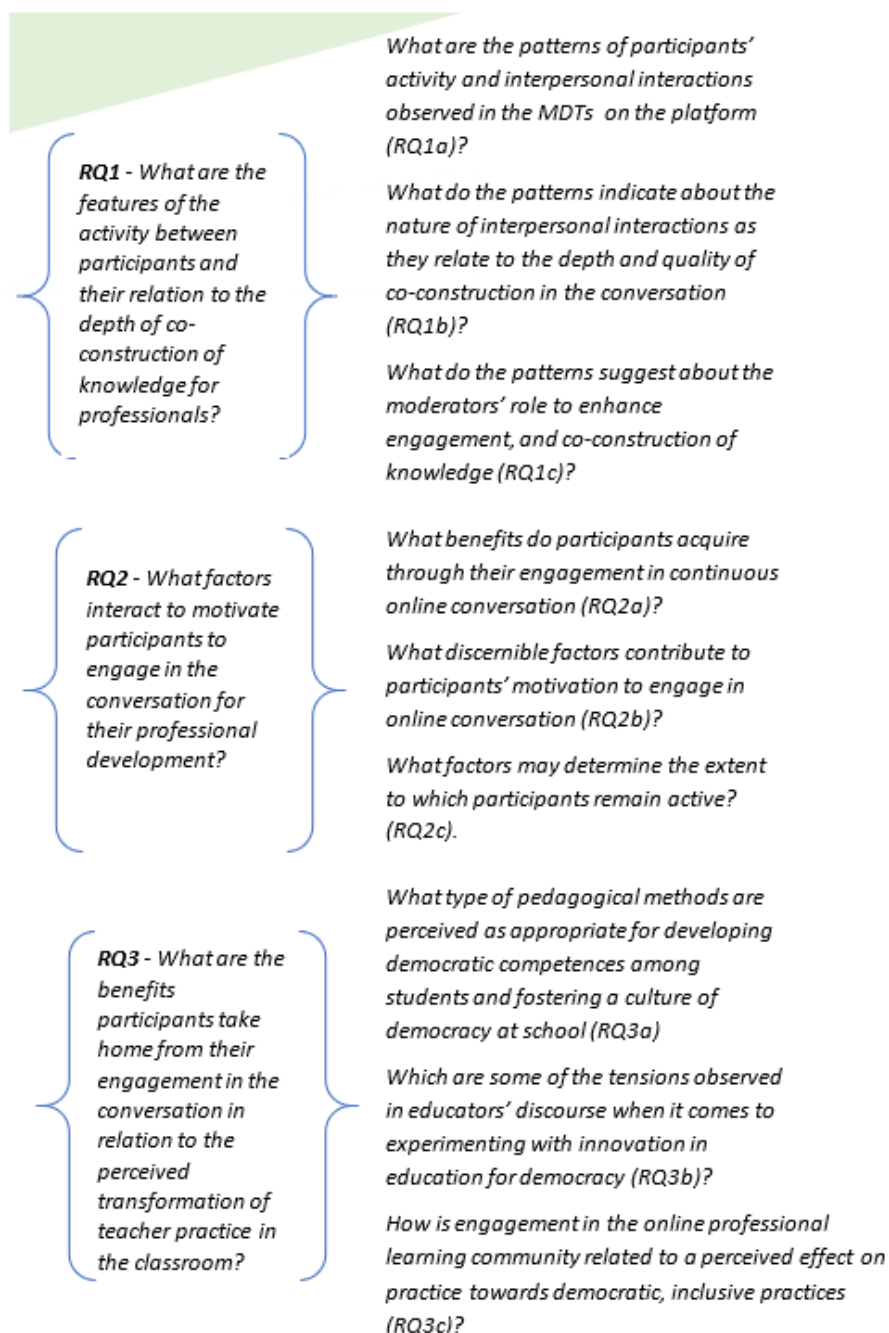
For example, the social network analysis (SNA) used in the analysis of participants interactions would in itself teach us very little about what is going on in the conversation, unless we begin by listening and understanding the content of what is being discussed, to see the relations, find the coherences, patterns, and common themes expressed by the group and its members. The themes generated in the analysis were classified along several dimensions relevant to our research questions. Here the author details the methods for the three research areas of the study (feature of interaction and depth of meaning making [RQ1], motivational factors of engagement [RQ2], and perceived impact of transformation of practice [RQ3]). In section 5.1 the components of the study are shown to constitute a backbone for the analysis of the data. In section 5.2, the body

of data is described and in 5.3 the methods used to extract the patterns of collaboration and the multimethod analysis for the different samples used. Some strengths and weaknesses of this research approach are discussed in section 5.4.

## **5.1 Research questions**

The overall concern of the thesis is to identify and better understand *the affordances of online professional learning communities that foster the establishment of an ecology of learning conducive to the development of democratic practices in educational settings*. For this, the design of the study must deal with the complexity and scope of the context and data, as described in section 3. These factors interact and therefore the research is designed to ensure that none of these crucial influences are left aside. In other words, the purpose of the thesis is to identify conditions that support the engagement of education professionals in such online conversational professional development for the further enhancement and improvement of such arrangements. The design of the study is developed so that the three main RQs are explicitly addressed, building on each other to serve the overall concern of the study (see “Research Overview” section 1.3, Figure 2). Each RQ is further developed through 3 sub-questions (a, b, and c) presented in Figure 10.

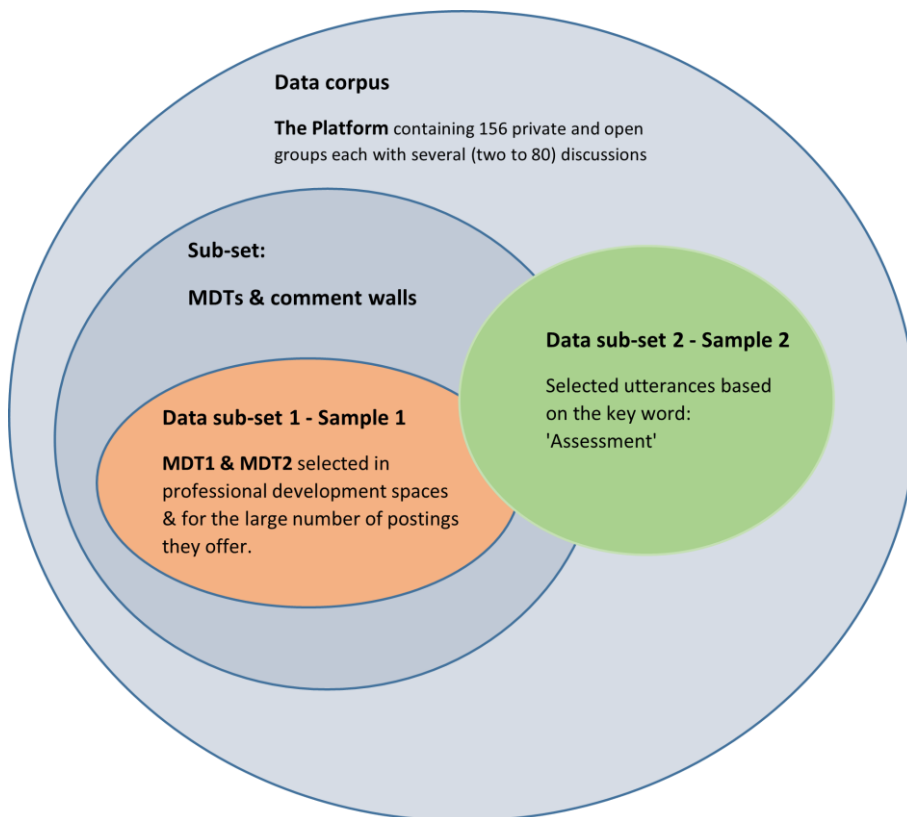




**Figure 10** The research questions (RQs) of the thesis

## 5.2 Data selection

*Data corpus and sampling amongst a vast amount of data* - The platform, in which the community of practice operates, contains hundreds of spaces for discussion (described in detail in section 2.3) that the author has access to. The estimated number of fora (see definition in 2.3.2) is more than 5000. Hence, the amount of available data is massive. The data is composed of discussions, and other multi-modal texts and images spread out through a vast number of spaces.



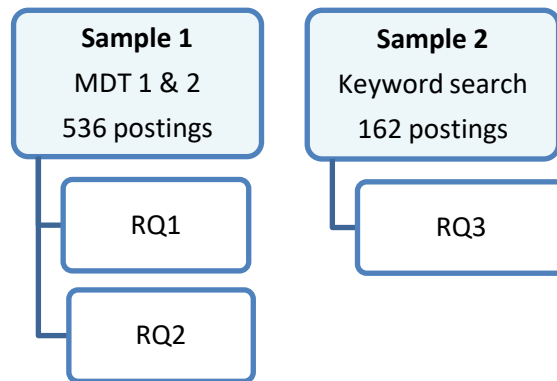
**Figure 11 Data selection within the purposeful sampling: corpus, sets and subsets**

Figure 11 shows the relationship between the principal terms. It also shows the relationship between the corpus of available data, with various subsets. Here attention is drawn to two such subsets, which also indicates the various ways in which the data can be analyzed. The two sub-sets used for analysis are indicated. Both are dedicated to professional development.

There is one set specifically from moderated discussions and another that is the result of a search for the term 'assessment'. The basic data unit analyzed, is one posting.

### 5.2.1 Data selection and collection

Two different samples were selected. One sample, containing together 536 postings, is used for the research in perspectives 1 and 2, respectively about the features and structuration of the interactions, and about motivational factors in relation to participants' initial engagement and how they sustain their engagement over time. The second sample, containing 162 postings, is used for the research in perspective 3 about the participants' discourse relative to perceived transformation of practices, and representation of what constitutes democratic practice, using the example of assessment. We will call them sample 1 and sample 2 (See Figure 12)



**Figure 12** The data samples that were used for each research questions of the research.

#### 5.2.1.1 Sample 1

The purposeful sampling followed a three-stage process. The first choice was to restrict the search within the area of the platform named 'Professional Development' (area opened to all members) because it is the aim of this research to study conversation as a mode of professional learning and development and furthermore, because other spaces of the platform, such as the informal Coffee Shop discussions, contain fora that are either not centered on professional issues (small talk serving social presence), or restricted-access groups specifically geared to training events,

contain fora that are either not moderated or serve as coaching spaces where mostly one-on-one, coach/trainee, interactions occur.

Within the Professional Development space of the platform, one can find 54 discussion threads, of which 14 are moderated discussion threads (MDTs), and the search was further restricted to them, because these are most relevant to the aim to investigate moderation of the conversation, an aspect that is dealt with in RQ1, and to have interactions that are continuous enough to examine motivational factors relative to RQ2. This choice also permitted us to compare the MDTs during the analysis, since they have similar frameworks: they occur within a set timeframe since they are planned events. As opposed to other discussion threads spontaneously opened by individual members that are not moderated, these MDTs are conversations that are facilitated by one or a team of moderators, as explained in section 2.1.3. Although spontaneous discussion threads might seem, in general, to better reflect a model of education for/through democracy, these unmoderated threads were mostly too short to be able to observe the evolution of discussion with time.

To limit the amount of data to a manageable amount, two of the 14 MDTs occurring in the “Professional Development” area of the platform were selected after purposive sampling based on the number of interactions (posts) and the relevance to the pedagogical approach promoted in the community. Any MDT could have been chosen as well and they are quite similar to the two that were selected. Therefore, the number of postings seemed a good criterion for choice. One of the 14 MDTs had more postings, but the topic had lower relevance to pedagogical themes that this study is interested in (it was a presentation of historical and cultural elements of Roma communities in Europe), and therefore was not selected.

The first selected MDT, MDT1 was named *‘Pedagogical principles of cooperative learning and autonomous learning’* and lasted 6 months from October 2012 to April 2013, with 87% of the content, in terms of word count, being produced in the first 4 months, period in which the moderators were active. MDT1 consists of 208 postings of 23 community members and got, however, 2956 views indicating much covert company visiting and/or following the MDT. The second selected MDT, MDT2 was named *‘Conscious communication in the practice of teaching’* and lasted 2 months, with no major breaks, from October 29<sup>th</sup> to December 12<sup>th</sup>, 2013. MDT2 consists of 328 interactions between 26 community members. It got 4217 views, thus also indicating the presence of significant covert company.

Within these two MDTs, 41 participants engaged in the conversation; eight were engaged in both MDTs. The distribution of profiles is described in Table 2, with details about the number of participants per geographical location, school level and professional position. Countries are not specified and replaced by rough regional categories to add to the principle of anonymity in the treatment of the data. The same person may fit more than one category. Within the 49 countries that are member states of the CoE, in our classification, the northern region is the Nordic states; the eastern region corresponds to the ex-soviet states; the southern region are states bordering the Mediterranean and Adriatic; and the rest is labeled western region.

**Table 2 Participants' profile information for sample 1**

<b>Geographical location in Europe</b>	<b>School level</b> (primary and secondary occupation)	<b>Professional position</b>
Northern (N=2)	Kindergarten (N=0)	Teacher (N=18)
Eastern (N=18)	Compulsory (N=7)	Teacher educator (N=11)
Southern (N=9)	Upper/lower secondary (N=20)	School head (N=1)
Western (N=12)	University (N=13)	Consultant (N=4)
	Other (N=6)	Ministry staff (N=2)
		Other (N=4)

The difference in duration of MDTs is explained by the decision of the team of moderators to limit the duration of MDTs to two months, in order to offer a clearer framework to MDTs and enhance engagement by concentrating the conversation over a shorter period of time. This strategic decision was taken after MDT1 was launched and explains why the durations differ, and MDT2 is limited to 2 months.

There exists no technical means on a NING platform to identify the covert company, again defined as members who do not post but are known to read the group's postings regularly and look around sometimes downloading material. The existence of covert participants can be inferred in two ways. By the gap between number of views and number of participants who are posting, and by the number of participants who engage in a suggested action occurring in another space than the platform, as for example downloading suggested materials on other platforms they

are oriented towards, or answering polls advertised in the discussion threads, etc. This research therefore will not offer insights on why participants do not engage past their first training experience but will concentrate on what happens with those members who sustain their engagement over months following their involvement in a Pestalozzi training event. The author notes that although this study is limited to the sampled MDTs, some participants engaged in conversation in the OPLC over several years (up to eight).

#### 5.2.1.2 *Sample 2*

Data was collected from the platform data corpus, as shown on Figure 12, through a word search for the term 'assessment' that revealed more than 300 instances of conversation from various spaces of the platform. Purposive sampling was based on the choice of postings spontaneously occurring on comment walls that then gave rise to a topical conversation and, in two instances, to the creation of specific moderated discussion threads. Thus, five sequences were selected. The method for selecting a sequence is different according to the space in which it appears. Concerning blogs and MDTs the sequence is given and no selection was necessary; on the other hand, for sequences that were embedded within 'comment walls', the selection of posting was done by reading postings and first finding their topical cohesiveness, and then weeding out other postings that were unrelated. This was especially important for the postings on the 'Coffee Shop' comment wall that were interspersed with postings relative to social presence (miscellaneous postings of greetings, jokes, birthday wishes, etc. that were unrelated to assessment).

Two conversations of the sample "emerged", i.e., they have been spontaneous in response to two postings: one about a conference on *Assessment and Organized Social Justice* of the Association for Educational Assessment, and the other about an OECD survey.

1. *The first conversation (2015), Assessment and Social Justice* raises the issue of equity in assessment and consists of 54 posts made by 15 teachers. It was initiated on the 'comment wall' and then pursued in a discussion thread, attracting 266 views.
2. *The second conversation (2016), What is assessment at school?* is a critical appraisal of content and skills recognized as "important" in schools and consists of 36 posts by nine teachers. It was initiated on the 'comment wall' and then pursued in a discussion thread attracting 156 views.

This data is complemented by 3 other conversational sequences:

3. *The incident (2015)*: a collaborative problem-solving sequence consisting of 15 posts on the professional development ‘comment wall’.
4. *A sequence from Friday Fun Activity (2014)*: a weekly game that invites participants to engage in a light activity but often leads to explorations, consisting of 32 posts on the ‘Coffee Shop’ wall.
5. *A blog ‘Our assessment map of Europe’ (2015)*: the blog was chosen randomly, with no other criteria than having the most postings (15 postings), from the 25 on the topic of assessment.

Within these sequences, 41 participants were engaged in the conversation, 15 of which also participated in at least one of the MDTs of Sample 1. The distribution of profiles is described in Table 3, with details about the number of participants per geographical location, school level and professional position. Countries are not specified and replaced by rough regional categories to add to the principle of anonymity in the treatment of the data. The same person may fit more than one category. (For the characterization of regions see Sample 1, section 5.2.1.1).

**Table 3 Participants’ profile information for sample 2**

<b>Geographical location in Europe</b>	<b>School level</b> (primary and secondary occupation)	<b>Professional position</b>
Northern (N=0)	Kindergarten (N=0)	Teacher (N=24)
Eastern (N=22)	Compulsory school (N=4)	Teacher educator (N=10)
Southern (N=12)	Upper/lower secondary school (N=26)	School head (N=1)
Western (N= 7)	University (N=8)	Consultant (N=4)
	Other (N=5)	Ministry staff (N=2)
		Other (N=1)

### 5.2.1.3 Additional data

A survey of participants was conducted in 2015 by the PP management, and a focus group was conducted by the researcher in 2017 with the team of moderators. Only succinct and marginal use was made of this extra data, Quotes from this data set were uniquely used five times throughout the

work, of which only two are part of the analysis and used to corroborate or mitigate elements of the findings that remained entirely based on the analysis of the two samples presented in this section.

### 5.2.2 Determining the data units

The technical features of the platform were set for non-threaded commenting. Thus, all comments appear in linear form (consecutive) and several responses may be attached to one message box as a participant comes back to read all new postings and may reply to several at once. As shown in Figure 11, the unit of analysis for the study is one posting, being considered as one utterance and one 'unit of meaning' (De Wever et al., 2006). However, of the 164 postings that were analyzed as single units in sample 1, there were, nine postings which demanded a further splitting up because they were composed of several 'units of meaning'. In six of these instances, the posting is clearly split in terms of content either by indication by the author of the posting (divider or verbal indication) or by interpretation of the researcher (the content of the post shows more than one 'unit of meaning'). And in another three instances, postings of extreme length (ranging from 520 to more than 1000 words) were split as this length would hamper the coding of the unit. These nine postings therefore resulted in 24 single data units.

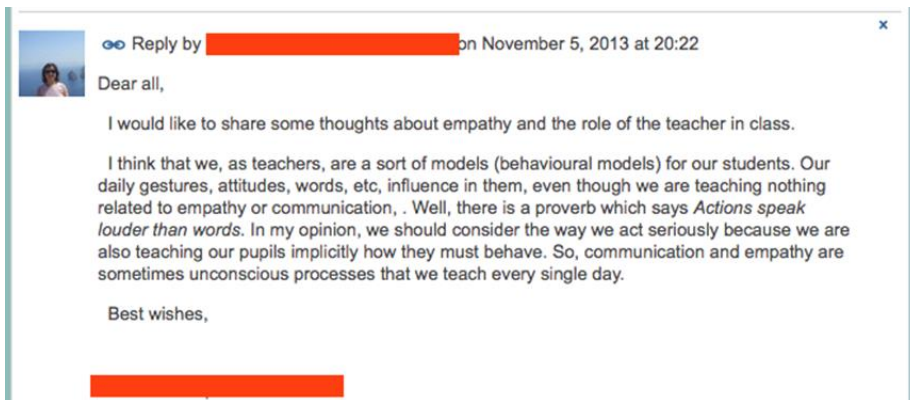


Figure 13 Anonymized example of one posting in a discussion thread on the platform, which is considered a unit for analysis.



### **5.3 Data analysis**

The three RQs, stemming, as explained in section 1.3, from the current theoretical debate as well as from the data and context of the research, invited different analysis. Thus, a variety of research instruments and techniques were used. The researcher used simple descriptive statistics represented in figures and tables with numbers and rates to offer comparative viewpoint of different patterns of interactions and postings. Also, she used thematic analysis (Braun & Clarke, 2013) of the utterances from the samples 1 and 2. Thematic analysis offers a deeper level of understanding and flexibility in relation to a) content of the conversation and, b) theoretical and epistemological perspective, harnessing diverse theoretical perspectives in a semi-inductive/deductive approach. This section aims to present both approaches in detail (in sections 5.3.1 and 5.3.2).

#### **5.3.1 Extracting the features on the activity and structuration of the collaboration**

The analytic tools introduced here are considered well fitted to respond to RQ1 and will be detailed as they are introduced. To find patterns, the data was analyzed by observing and counting, in two entire MDTs (sample 1), interactions in terms of size, density, duration, individual involvement, pace, topical persistence, turn taking and ties (or network analysis) (see Table 4 and section 4.3.1 for the theoretical backing of these elements that were collected during the literature review). Simple calculations were involved. Table 4 defines and describes the main terms used to measure and compare the data from the two MDTs.

**Table 4 Operationalization of quantitative measures**

<b>Features/ authors (when applicable)</b>	<b>Description</b>	<b>Method of measurement</b>
<b>Size</b>	Number of participants and number of posts	Simple tally
<b>Density</b>  (Berkowitz, 1982; Fahy et al., 2001; Ridley & Avery, 1979; Zhu, 2006)	Ratio of the actual numbers of links to the possible total and connectedness within the network.	Calculation (D) = $2a / N(N - 1)$ a = actual number of interactions (postings) observed N = the number of participants posting in the MDT.
<b>Individual involvement</b>  (Ren, 2007; Schneider, 2013; Sun, Pei-Luen Rau, & Ma, 2014 Locke, 2016)	Two categories: 1) <i>Low-active</i> for individuals posting $\leq 10$ times. 2) <i>High-active</i> for individuals posting $\geq 11$ times.	Tallying and rating
<b>Pace</b>  (Hesse, Werner, & Altman, 1988; Preece & Maloney-Krichmar, 2002; Wise, Zhao, Hausknecht, & Chui, 2014)	Time of posting, speed and connections: 1) Working hours/ free time, 2) Interval between postings, 3) Most active week including network analysis (see 'nodes')	Tally
<b>Topical persistence</b>  (Fahy et al., 2001)	The extent to which the discussion stays on topic or digresses.	Calculation of levels of postings sent and received on the same topic by the participants (P). For example: the scheme below shows a level 3 topical persistence: PA => PB => PA => PB
<b>Turn taking</b>  (Wiemann & Knapp, 1975)	Observation of participants' postings to identify whether and to what extent they speak one at a time in alternating turns.	Tallying turns.

To these main elements, the author added two other quantitative observation devices: analysis of cohesion and social network analysis. This was done to facilitate responses to RQ1.

- Cohesion: Henri's (1992) model of interactivity was used to measure cohesion as it structures the content and interpersonal communication over time, i.e., extent to which the postings are responses to previous postings. Even though Henri (1992) states that her focus is on interactivity, the model is helpful to observe cohesion because it distinguishes between interactive versus non-interactive and explicit versus implicit interaction. Furthermore, two different types of interactive messages are distinguished: responses and commentaries. This leads to five categories from Henri's (1992) model of interactivity, and one that the researcher added as introduced in Table 5. Namely, there are six categories describing cohesion:
  - four interactive categories,
    - interactive responses that are explicit or direct (IRE),
    - interactive responses that are implicit or indirect (IRI),
    - interactive comments that are explicit or direct (ICE),
    - interactive comments that are implicit or indirect (ICI),
  - two non-interactive categories obtained by subdividing 'non-interactive statements' into explicit or implicit from Henri's model since a comment can be non-related to previous comments but call-in specific participants and thus say something about cohesion in the discussion.
    - non-interactive comments that are explicit (NICE),
    - non-interactive comments that are implicit (NICI)

The content was coded and to each coding was attributed a 'weight' and a rank order to represent levels of cohesion as seen in Table 5.

**Table 5 Categories of cohesion. (Adapted from Henri's (1992) interaction patterns).**

Interaction patterns	Code	Example	Rank
Interactive responses/explicit Statements that respond to a question, referring to the owner by name	IRE	<i>"Dear P., thank you for your interest..."</i>	6
Interactive responses/implicit Statements that respond to a question without referring to the owner by name	IRI	<i>"Thank you for your interest in my..."</i>	5
Interactive comments/explicit Statements taking up a previous comment, referring to the owner by name	ICE	<i>"Hi, C. as per your remark, I'm interested in ..."</i>	4
Interactive comments/implicit Statements taking up a previous comment without referring to the owner by name	ICI	<i>"I get what you mean, but I think one should..."</i>	3
Non-interactive explicit Statements that are not connected to what others have expressed but refer to a person by name	NICE	<i>"Hey, V. I like this!"</i>	2
Non-interactive comment implicit/independent Statements that are not connected to what others have expressed and refer to no one in particular	NICI	<i>"I like this!"</i>	1

- Network analysis and 'nodes' are observed by counting who is responding to whom and analyzing connections to see patterns of the conversation in the most active week of each MDT. For this study, a *node* was defined as the occurrence of one member being involved in ten or more interactions during the week, receiving and posting messages to multiple participants who are active in the MDT. In the simplified Figure 14, C is a node engaged in three interactions with three other participants.



**Figure 14 A sociogram with participant C playing a ‘nodal’ role (C) as engaged in three interactions**

Because the duration of the MDTs differs, the author chose to analyze the most active weeks in both MDTs, which provided a comparable timeframe.

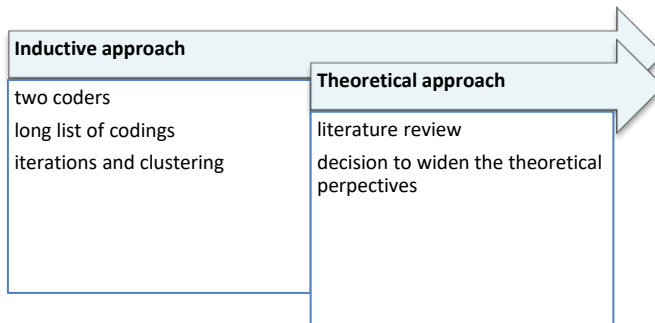
### **5.3.2 Coding: a multiphase approach**

Häkkinen et al (2003), argue that in data analysis of asynchronous online discussion threads, various approaches - qualitative and quantitative approaches, as well as theory-based and data-driven approaches - complement each other. Qualitative methods are well suited for examining participants’ actions as contextualized events because they can give rich and holistic descriptions as well as emphasize the experience of participants and the social settings in which they occur. The process was inductive in the first phase and then enriched by the literature review; and the approach was interpretative as explained in section 3.2.

Coding helps to reduce a large amount of textual data to meaningful concepts while identifying themes and categories in the data (Miles & Huberman, 1994). Data reduction is “the process of selecting, focusing, simplifying, abstracting, and transforming that data” (Miles & Huberman, 1994, p. 10). To study the collaborative, cognitive and emotional activity, the quality of knowledge construction of the conversation (RQ1), the motivational factors pertaining to participants’ engagement in the OPLC (RQ2), and the perceived change of practices taking the example of assessment as democratic education practice (RQ3), the material was analyzed following a thematic analysis approach (Braun & Clarke, 2006, 2013). The Sample 1 and Sample 2 were, however, analyzed according to a different process. The author presents this in detail in the following sections.

### 5.3.2.1 Thematic analysis of sample 1

The thematic analysis was performed with a complex and multiphase method (Häkkinen, 2013) that is described in detail in the following paragraphs. Qualitative analysis of postings, discussions and context features aspires to “give insights into the nature of learning activities taking place in the online learning environment” (Häkkinen, 2013). Initially an inductive approach was chosen to identify a first coding of a sample of postings. Figure 15 visualizes the opening of the process that is further described and complemented below.



**Figure 15** The first two phases of the complex multiphase approach to the thematic analysis of sample 1

Afterwards, a theoretical approach was introduced: the results of the inductive phase of coding informed a keyword search and constituted a literature review of 70 articles (see conceptual and analytical framework). The outcomes of this review then informed a further modification of the initial inductive coding. The result of this “back-and forth”, iterative process is presented in the findings section of the thesis. The author submits that the identified categories of themes of the conversation constitute a substantial contribution to the field of study of online conversation, co-construction of knowledge in online collaboration and of the motivation of education professionals to engage in OPLCs. The author shows the outline of the method in Figure 15 and because of its importance to the study the method is described in full detail in Appendix B. Here is a summary of the process.

*Phase one: An inductive approach.* Transcripts of the asynchronous discussion threads were analyzed by two coders. The second coder is a researcher in education and was active in the PP (see section 5.4.2, on methodological limitations). In line with the aim and RQs of the present

study, the data was reviewed and coded for the analysis of features of the conversation and the level of co-construction of knowledge (RQ1) and motivational factors in relation to participants' engagement (RQ2).

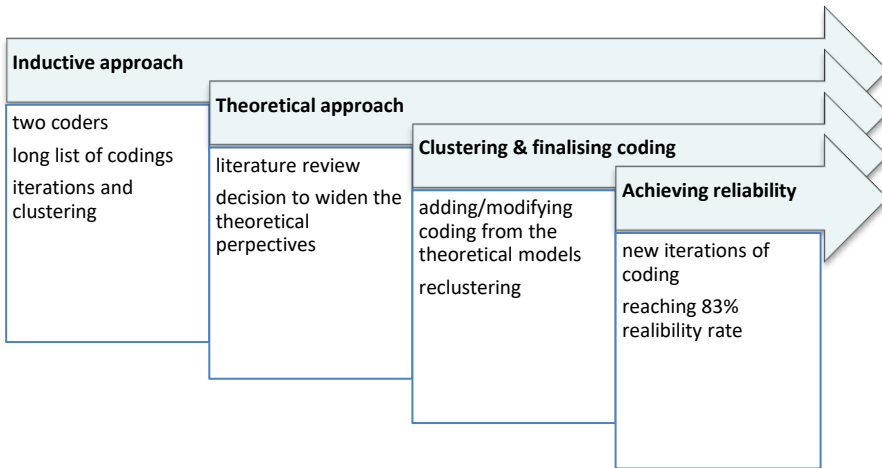
After familiarization with, and immersion in the data, reading and re-reading the postings, each coder independently coded the first selection of postings, also sharing arguments for each individual decision for the coding of one unit of data. As a result, a long list of words (coding) was generated 40 postings were a saturation point beyond which we learnt nothing new regarding the identification of coding (no new codes). Examples of coding are provided in this section.

Coders then compared their coding going through their analyses and arguments to clarify coding and definitions. Several coding iterations followed during which differences in interpretations of the meaning of the codes, redundancy, usefulness, and relevance were discussed between coders. The question of reliability is discussed in "phase four" and in section 5.4.2 on methodological limitations.

*Phase two: A secondary theoretical approach.* The findings of the inductive phase guided the review of theoretical models that would help bring out the most of our analysis of the discussion threads to answer partly or in full our research questions (we used the initial coding as key words). We found mostly publications about such studies done in schools and universities with pupils and students within courses and comparatively few works on online collaborative professional development. The researchers extracted from these further elements for refining the coding. For example, relative to the depth of co-construction of knowledge, a list of 77 words was generated (for example such as clarification, judgment, justification, linking ideas, prompt, question, suggestion, agreement, rebuttal, co-construction, comparison, connection, consensus, building, feedback, interpretation, deepening, expanding, practical experience, summarizing, testing, theory...).

*Phase three: Clustering and finalizing the coding.* The outcomes of this review then informed a further modification of the initial independent coding. We were able to develop sub-categories from the list generated in phase two. At this stage of the method, we added from the data sample the 40 next postings of MDT1, to reach a total of 80 postings to code with our new categories. The coding system was then studied further: for example, we identified overlaps and consequently further defined the themes and categories accordingly to the findings concerning these overlaps. When

coders disagreed on the coding, it was decided to take turns in making decisions.



**Figure 16 The full complex multiphase approach to the thematic analysis of sample 1**

*Phase 4: Reliability of coding.* In one last iteration, of the process (described in Figure 16), it was decided to attribute 2 decisions of coding per unit of data (one posting). Both coders performed this coding on one third of the sample MDT1, which corresponds to 27 postings for 4 codes (two for coder A and 2 for coder B), therefore 108 decisions. At this stage, inter-coder reliability was deemed acceptable in terms of percent agreement, 83% (Rourke et al., 2001a). In the final coding exercise (phase four). Both researchers then coded the entirety of the data, i.e., the transcripts of postings for both MDTs. At this point the coders analyzed 80 posts from MDT1 and 84 from MDT2; this sample represents the saturation point beyond which nothing new was inferred from the analysis relative to our research questions. The following three examples (Tables 6, 7 and, 8) further illustrate the coding method and process.

The codebooks are included in the findings chapter, in section 6.1.2 for RQ1 and 6.2.2 for RQ2.



- Example 1:

**Table 6 Example 1 demonstrating the coding iterations for the analysis of features of activity and the co-construction of knowledge within the conversation (RQ1)**

<b>Posting #9 MDT1</b>					
<i>A perfect example of group work, each member performing their role, taking turns and showing respect to other members of the group:.) For me, the most challenging aspect of group work is getting students to realize their responsibility for their personal contribution</i>					
<u>First phase:</u> inductive approach coding from 2 coders					
Personal Experience	Self-reflective	Linking ideas	Answer	Analysis	Analyzing
<u>Second phase:</u> coding after theoretical approach					
<input type="checkbox"/> Coder 1					
<input type="checkbox"/> Coder 2					
Practical utility	Perspective taking	Co-construction	Co-construction		
Analysis of personal experience	Self-reflective, (challenge + for me)	Linking ideas, explaining further			
<input type="checkbox"/> Coder 1					
<input type="checkbox"/> Coder 2					
<u>Third phase:</u> from clustering and finalizing coding, generating 9 categories					
Co-construction		Perspective taking			

- Example 2:

**Table 7 Example 2 demonstrating the coding iterations for the analysis of features of collaboration and the co-construction of knowledge within the conversation (RQ1)**

<p><b>Posting #20 MDT1</b></p> <p><i>Dear --. and --., I like this activity very much! From the aspect of cooperative learning, I would ask:</i></p> <ul style="list-style-type: none"> <li>• <i>Should we select the micro-groups directly or randomly? How does the differences between the two ways of group forming matter from the aspect of the level of summarising?</i></li> <li>• <i>Can the micro-groups understand the written answers of the others on the post-it equally (equal access)?</i></li> <li>• <i>In step 4 and 5 how we can provide equal access and participation? Can we structure these steps providing parallel interaction?</i></li> <li>• <i>In step 5 how we can provide encouraging and constructive interdependence among the participants?</i></li> </ul> <p><i>I will try this activity during my workshop in Vienna as a dedicated PP facilitator in a Holocaust conference! Best wishes, --.</i></p>													
<p><u>First phase</u>: inductive approach coding from 2 coders</p> <table border="1"> <tr> <td>Question</td> <td>Questioning</td> <td>Prompt</td> <td>Deep learning</td> <td>Role-taking</td> <td>Feedback</td> </tr> </table> <p><input type="checkbox"/> Coder 1</p> <p><input type="checkbox"/> Coder 2</p>						Question	Questioning	Prompt	Deep learning	Role-taking	Feedback		
Question	Questioning	Prompt	Deep learning	Role-taking	Feedback								
<p><u>Second phase</u>: coding after theoretical approach</p> <table border="1"> <tr> <td>Analysis</td> <td>Type 2 questions</td> <td>Co-construction</td> <td>Co-construction</td> </tr> <tr> <td>Explains principles</td> <td>Distinguishing types of questions</td> <td colspan="2">Questioning towards deeper learning</td> </tr> </table> <p><input type="checkbox"/> Coder 1</p> <p><input type="checkbox"/> Coder 2</p>						Analysis	Type 2 questions	Co-construction	Co-construction	Explains principles	Distinguishing types of questions	Questioning towards deeper learning	
Analysis	Type 2 questions	Co-construction	Co-construction										
Explains principles	Distinguishing types of questions	Questioning towards deeper learning											
<p><u>Third phase</u>: from clustering and finalizing coding, generating 9 categories</p> <table border="1"> <tr> <td>Analysis</td> <td>Co-construction</td> </tr> </table>						Analysis	Co-construction						
Analysis	Co-construction												

- Example 3:

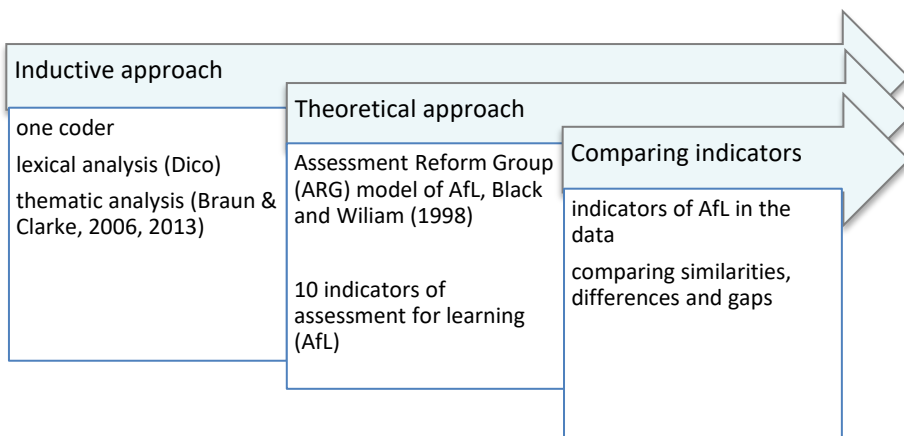
**Table 8 Example 3 demonstrating the coding iterations for the analysis of motivational factors shaping how members engage initially and sustain their engagement over time (RQ2)**

<p><b>Posting #20 MDT1</b></p> <p><i>Dear --. and --., I like this activity very much! From the aspect of cooperative learning, I would ask:</i></p> <ul style="list-style-type: none"> <li>• <i>Should we select the micro-groups directly or randomly? How does the differences between the two ways of group forming matter from the aspect of the level of summarising?</i></li> <li>• <i>Can the micro-groups understand the written answers of the others on the post-it equally (equal access)?</i></li> <li>• <i>In step 4 and 5 how we can provide equal access and participation? Can we structure these steps providing parallel interaction?</i></li> <li>• <i>In step 5 how we can provide encouraging and constructive interdependence among the participants?</i></li> </ul> <p><i>I will try this activity during my workshop in Vienna as a dedicated PP facilitator in a Holocaust conference! Best wishes, --.</i></p>																					
<p><u>First phase:</u> inductive approach coding from 2 coders</p> <table border="1"> <tr> <td>Competence</td> <td>Value-based</td> <td>Challenge</td> <td>Coming to an understanding</td> <td>Feedback</td> <td>Testing</td> </tr> </table> <p><input type="checkbox"/> Coder 1</p> <p><input type="checkbox"/> Coder 2</p> <p><u>Second phase:</u> coding after theoretical approach:</p> <table border="1"> <tr> <td>Competence</td> <td>Competence</td> <td>Autonomy</td> <td>Autonomy</td> </tr> <tr> <td colspan="2">Expertise, persistence, emergent leadership</td> <td colspan="2">Freedom to regulate, commitment to feedback</td> </tr> </table> <p><u>Third phase:</u> from clustering and finalizing coding, generating 8 categories</p> <table border="1"> <tr> <td>Persistence</td> <td>Accountability</td> </tr> </table>						Competence	Value-based	Challenge	Coming to an understanding	Feedback	Testing	Competence	Competence	Autonomy	Autonomy	Expertise, persistence, emergent leadership		Freedom to regulate, commitment to feedback		Persistence	Accountability
Competence	Value-based	Challenge	Coming to an understanding	Feedback	Testing																
Competence	Competence	Autonomy	Autonomy																		
Expertise, persistence, emergent leadership		Freedom to regulate, commitment to feedback																			
Persistence	Accountability																				

More detailed information regarding the coding procedure, instruments, are in appendix B.

### 5.3.2.2 Thematic analysis of sample 2

The analysis was performed by one coder, through both a lexical and a thematic analysis (Braun & Clarke, 2006, 2013), in an inductive approach (Figure 17), to identify patterns in participants’ discourse, their conceptions of assessment purposes, their approaches to assessment processes, their orientations toward measurement and standardization, and their understandings of assessment with regards to issues of democracy, fairness and inclusion.



**Figure 17 The thematic analysis of sample 2**

This analysis was chosen to inform about what is common to the participants of this group, but also about the differences, the questions these educators raise and how they deploy their practices in the classroom.

*Phase one: lexical analysis.* First, a lexical analysis using *Dico*, a word count application, was performed to give insight on what terms were most used by participants when in conversation over the topic of assessment. This word count was then interpreted for patterns, i.e., how participants develop their representations (or mental models) of assessment through their choice of words.

*Phase two: thematic analysis.* Second, a thematic analysis was conducted inductively, without an initial theoretical approach, on the 156 postings of the sample. Six themes were thus generated.

*Phase three: identifying indicators.* Using one of the most cited models of assessment for learning (AFL), The Assessment Reform Group (ARG) (Broadfoot et al., 2002), (which is based on Black and Wiliam's [1998b] research with contributions from experts and associations from various backgrounds), the generated themes were observed to identify commonalities and differences. The ARG model was chosen because formative assessment and AFL were deemed well suited to discuss socio-constructivist, relational and democratic understandings of learning. The researcher compared the ARG's *10 indicators of AfL*, to participants' discourse about the democratic practice of assessment to find what was similar, what was different, and what was altogether 'missing'.

In sum, the data within the selected discussion threads were first analyzed inductively and then analyzed further in a comparative approach, to see whether and how ideas are making their way among the participants, in relation to the 10 indicators of the much-cited ARG model, and to investigate how participants talk about their plans to modify their practices after the online exchange. A table of models, topics covered, and example of indicators is therefore proposed in the findings.

## **5.4 Strengths and limitations**

The following limitations were inherent in the research design of using existing data. While measures were taken to ensure credibility and representation of the study (multiple coders, co-analysis, variety of data samples), limitations in this study remained in the circumstance that the researcher is inferring meanings from participants' activity, not using self-report, and this method runs the risks of misrepresentation of certain realities because of possible variances between participants' and researchers' perspectives. Undisputedly, this is always the case, and research is inherently affected by the researcher's subjectivity (see 1.6) in interpretive methodologies. In this research, attaining a firm grasp of the topic through a comprehensive examination of the literature was essential to make every effort to avoid overlooking clues, non-confirming data and/or contradictions. This is a general limitation; other limitations are of a different nature, and they are presented in this section.

### **5.4.1 Case study limitations**

The research is a descriptive and exploratory investigation of the OPLC phenomenon, studied holistically by several methods, within its real-life context, to explore the patterns observed. It is therefore a case study. One

may question the extent to which the generality of findings can be counted on, given the specific characteristics of the OPLC, namely *a community manifesting active and deep communication in groups*. Typically, case studies face the issue of external validity, which is in this circumstance obviously the question of generalizing from the technical and substantive setting of the project, gathering participants who come from many different settings, systems, and cultures.

This is not a question of sampling since the study is looking at the participation of teachers who have chosen to engage in the OPLC, of their own free will. Would the results be qualitatively similar if the study were based on a sampling from a random population of teachers? Perhaps the question is less about sample population than context? Perhaps the question is less about generalization to other populations of teachers than rather other CPD environments? If so, the result would be perhaps qualitatively similar for teachers in settings that are non-formal, offering autonomy, privileging wellbeing, and emergent learning and not for teachers in more traditional CPD setting? The researcher did not collect normative information but looked at patterns and relationships. Within the frame of qualitative research, the issue is not to generalize results but rather to create *theoretical generalizations* and evaluate to what extent the *work is replicable and transferable to other contexts of CPD*. Thus, the question of external validity may not be considered a serious limitation because the patterns that are revealed will be interesting somewhat irrespective of their external validity.

The author is convinced that reasonable generalizations can be extracted, and the research can bring knowledge about *groups of education professionals who are willing to act for a cause*, and who do it in an environment, where collaborating towards the cause in question is the central piece driving the set up and interactions between people.

#### **5.4.2 Methodological limitations**

Another possible limitation of the methodological approach could lie in the choice to negotiate coding and meaning with the second coder. The researcher takes note of the possible complications due to the fact that the two coders negotiated shared meaning and started from a very different base (18% overlap) to arrive to good reliability (83% overlap), and that this is not the same as a measure of the reliability with which coders are coming cold to the data (see Appendix B). The methodology does not clarify whether such an uninformed coder would find the same thing. Similarly,

one can ask whether the results would have been the same if the other coder had never been in the program and perhaps not known anything about it? With the goal of achieving maximum transparency concerning the interpretive aspect of the study, the researcher is very clear on the choices made, and the examples provided further clarify the choices and approaches, harnessing coders' intimate familiarity with the setting and topic, and the realities of the data and context.

The coders acknowledge that such an analysis was a matter of the researchers taking a "window of concern", defined by theoretical perspectives and research questions, to data and constructing themes that resonate with those concerns. *Scrutiny is always guided* by an idea, a goal, and a theoretical perspective. The researcher's point of view on these issues is that the method has been presented in detail, with transparency and, with measures taken to ensure credibility and representation of the study (multiple coders, co-analysis, variety of data samples), it has provided results that are therefore worthy, if not perfect. The author has in relation to this complication, been careful throughout the work not to refer to "*emergence*" of themes, but instead to highlight that the themes were '*generated*' by the researchers' scrutiny. This is in tune with Braun & Clarke's (2013, 2016) guidelines.

As previously stated, the study relies on existing data. The rationale for this has been developed in section 3.1 and will not be repeated here. Because of this choice of approach, the study does not claim to provide first-hand analysis of participants' perception of their experience while engaging in the OPLC but has inferred the results from participants' *actual activity* in the said OPLC. What the researcher is doing here is drawing as much as possible from the data to provide rich descriptions, and, in effect, has shown that one can infer a lot from it. One could question how much can be inferred and what is the validity of those inferences? The author is fully cognizant that these are in fact crucial issues and is also aware that all sorts of issues arise with all types of data. It is not, for example, that data coming from questionnaires and interviews are void of such issues. The researcher is set to address the issues that emerge, not to avoid them. It is an area that a lot of other researchers are moving into, having to grapple with these same problems. Therefore, the author invokes the results of previous research, of people who are innovating in the field, and treading carefully to find what the data in asynchronous discussion threads can tell us about learning in conversation about the business of teaching.

It is necessary to deal with typical issues of analyzing pre-existing data that does not come into being for research purposes. Among them are, as noted above, not knowing enough about those responding, their background or settings nor the situations in which they respond. Dealing with static data there is typically the problem of inferring from what is there, not being able to direct participants to attend to important issues or to probe further or clarify, which is similar to what those who deal with documentary or questionnaire data have to deal with. The fact that the researcher has extensive knowledge of the community history, activity, and has met most active members face to face, constitutes a possibility for triangulation and therefore partially alleviates this limitation.

### **5.4.3 Methodological strengths**

Some of the challenges pointed out in the previous section are important to consider for the development of research on the ecology of learning in online conversation and it seems that the theoretical and practical implications found here can support such further development. Such developments would open up multiple avenues not only in the fields of education and professional development, but also others such as management, training, and human interaction on social media.

The researcher's choices presented difficulties and challenges, that were acknowledged and addressed and need to be continuously discussed. Nevertheless, the author is convinced that these approaches are sensible and would like to see them develop in the hopes that this is an avenue that more researchers may and will take, in a world of increasing complexity. Complexity requires out-of-the-box thinking, systemic approaches adopting wider perspectives, and interdisciplinarity in the way people talk about, computer mediated, human realities.

The author feels that she has moved in that direction and tried to turn the challenges into strengths. The choices presented difficulties that were recognized and dealt with, and hopefully strengthened the work. They have implications into different areas of scientific research. It must be decided how to deal with the difficulties of analyzing data, on interactions on the internet, that has not been generated for the purpose of research? Also, how to handle the more technical and pragmatic aspects of online interaction and at the same time attend to the substance, the meanings in the content of the data? Thus, both the technical aspect and the substantive context are attended to which is shown to be both important and challenging. Perhaps the biggest challenge was to use and deal with



different theoretical approaches at the same time. In order to manage this, it was decided to develop the field of ecological approaches in learning and education, rather than use a narrow epistemological approach (where data is analyzed mainly from one perspective). The author hopes that a strength of the thesis is to have engaged with these principal questions in a way that can help others to take a similar route.

The main strength of the research lies in the ecological framework explained in section 3.3. It fosters a multimethod approach that despite its complexity brings out the richness of the situation and emphasizes the interaction between the various social dimensions involved. The methodology developed by Hakkinen (2003) is taken much further and in considerable detail when analyzing sample 1 and should be considered an important contribution and therefore a strength of the study. The study's strength is also augmented by its relevance to getting a substantive and methodological understanding of a setting that is likely to be prominent for decades to come. It is part of a wider effort to contribute rigorous research of teacher OPLCs as recommended by Dede et al., to inform a) developers who need to know the best design features to include, and b) educators to understand which program will help support teacher learning and change, and c) funders to gain sufficient guidelines for where to direct their support (Dede, Ketelhut, Whitehouse, Breit, & McCloskey, 2009).

The study of the Pestalozzi OPLC is an illuminative case study, hopefully providing profitable grounds for other community dwellers, designers, researchers to build their own 'petite generalizations' (Barab, Barnett, & Squire, 2002, p. 534). That is, to use these research results to investigate and identify patterns, motivations, and outcomes in their own communities and address the challenges these face with care on multi-dimensions: communicative, cognitive, affective, social, ethical, political, and behavioral.

#### **5.4.4 Anonymity and ethical issues**

The principal ethical issue is to retain the anonymity of the participants. Their names appear nowhere in the analysis, nor are their responses presented in such a way that their identity can be inferred. The data is still stored on the platform as the community space is still open to members. Authorizations from all participants whose texts are included in the data has been accorded and were received by electronic confirmations. The information is available upon request. To maintain anonymity (Denzin & Lincoln, 2005; McMillan, 2012) the pseudonyms will not match the background information given about the participants of the study. For the

same reason we only provide information about the number of participants per geographical location, school level and professional position as presented in sections 5.2.1.1 and 5.2.1.2.

Participants' *pseudonyms are dealt with in two ways* to best accommodate the reader's comfort.

In RQ1, because the information was considered especially sensitive, and because the research question referred to structuration of the interaction, participants are referred to with letters and numbers that reflect their role (letter) and order of their entry (number) in the MDT's, P for participants, M for moderators. The given pseudonyms are referred to by combining letter and numbers: Px, Px+1, Px+2, etc. and My, My+1, My+2, etc. Moderator M1 is interacting in MDT1, M2, M3 and M4 are interacting in MDT2.

In RQs 2 and 3, participants are referred to by randomized yet consistent, forenames in order to make the account livelier, real and social. This seemed beneficial for the reader to perceive the participants as real people and avoid the risk of facelessness in the analysis.

## 6 Findings and implications

The analysis of the data has revealed intense complexity of the context, the resources and the content of the interactions that occur on the online platform. In this section the findings are organized around each research question.

- RQ1: reveals eight themes pertaining to the features of the activity between participants in relation to the depth of meaning making for professionals in relation to moderation (section 6.1).
- RQ2: shows eight motivational factors bringing participants to engage in the OPLC initially and to sustain their engagement over time (section 6.2).
- RQ3: reveals six themes pertaining to the benefits participants take home from their engagement in the conversation and what this means for teacher practice in the classroom (taking the practice of assessment as example) (section 6.3).

### 6.1 Features of the activity between participants and their relation to the depth of meaning making for professionals in relation to moderation

This section presents the findings from the investigation of *the features of the activity (and structuration of the conversation) - and their associated meaning in a learning context* - that occurred between educators between 2012 and 2013 in the two sampled MDTs. It offers a descriptive and analytic view of the cognitive, social, affective, and procedural elements found in the conversation and focuses on the analysis of the structural features of the conversation following the indicators in Table 4 (section 5.3.1). The findings for the two MDTs are presented together to study and compare patterns concerning structural features of the conversation (RQ1a), quality of co-construction of knowledge (RQ1b) and moderation styles (RQ1c).

For this, it focuses on *activity* seen as objective and observable features of the interaction between participants. Once patterns of interaction have been identified, it then looks at the quality of collaboration and co-regulation as it occurs in its cognitive, social, and affective dimensions to identify factors that support – or impede – the co-construction of knowledge. A specific look at the moderators’ activity highlights enabling behaviors and these will be taken up in the discussion section as possible design elements helping towards facilitating online conversation to enhance co-construction of knowledge. For the purpose of the study, and in

order to identify patterns in the conversation, the features of the conversation have been clustered in a series of dimensions such as size, density, individual involvement of participants, pace, topical persistence, turn taking, cohesion, and network patterns (see table 4, in section 5.3.1).

The two studied MDTs are somehow similar but also, they differ in many categories: the two MDTs are different in duration, involvement and interaction patterns, and moderation style. As a reminder of the method of anonymization, in this section the author refers to the participants by the letter P and a number (x) in the order of their entry in the MDT's (Px, Px+1, Px+2, etc.). The same principle applies for the moderators except that they get the letter M.

### **6.1.1 Patterns: structuration and features of the activity found in the conversation (RQ1a)**

The results pertaining to the structural features of the interactions are presented in the order of Table 4 "*Operationalization of quantitative measures section*" in section 5.3.1). Each set of findings are presented in two sub sections:

- first, the "*main findings*" are listed in bullet point form.
- They are then followed by "*details*" with a more comprehensive account.

A general overview of the MDTs is given in Table 9. This table will be referred to throughout the section 6.1.1. The *duration* of interaction (line 1, Table 9), in MDT1, was a bit more than 6 months; in MDT2 was a bit less than 2 months. How this is dealt with was explained in section 5.2.1.1.

**Table 9. General overview of the MDTs.**

	<b>MDT1</b>	<b>MDT2</b>
Duration	25 weeks	7 weeks
Number of moderators	1	1 main, 2 assistants
Number of participants posting	23	26
Number of postings	208	328
Density of interaction	0,75	1,01
Average number of postings per participant (rounded)	9	13
Average number of postings per participant non moderator (rounded)	7	8
Min postings/participant*	1	1
Max postings/participant*	29 (P7)	35 (P5)
Number of moderators' postings (% of all postings of the MDT)	M1 = 55 (26%)	M3 = 89 (26%) M2 = 35 (10%) M4 = 5 (1%)
Number of views	2956	4217

\* does not include moderators.

#### *6.1.1.1 Size, density, and level of involvement*

##### *Main findings:*

- MDT2 is bigger and denser (see 'Details' below): there is higher involvement of participants and higher network connectedness.
- Although a similar number of active participants participated in both MDT's, MDT2 shows certain participants being intensely involved compared to others with around 60% more postings than in MDT1 as shown in Table 10. Two groups were observed: low and highly active members.
- However, MDT1 has a better distribution of activity amongst engaged participants and offers an equal access to participation that did not play out in the same way in MDT2.
- Several conflicts and controversies, detailed in section 6.1.1.3, pushed some participants away from the conversation.

**Table 10 Number-range of postings per category of level of involvement of participants**

Number of postings	MDT1 N (%)	MDT2 N (%)	Levels of involvement
1–5	14 (58%)	12 (46%)	Low active
6–10	4 (17%)	5 (19%)	
11–15	2 (8%)	1 (4%)	High active
16–20	1 (4%)	2 (8%)	
21–25	1 (4%)	3 (12%)	
26–30	1 (4%)	1 (4%)	
31–35		1 (4%)	
>35	1 (4%)	1 (4%)	

*Details:* MDT1 consists of 208 postings of 23 members, whereas MDT2 consists of 328 postings between 26 members. There are a similar number of active participants who participate overall in both MDT’s, but the number of postings in MDT2 is around 60% more than in MDT1 despite a shorter duration period of MDT2 (see Table 9). This underlines the level of activity varies between the MDTs, with MDT2 showing a *higher level of activity* of participants.

The density of MDT2 is higher than that of MDT1 (1,01 to 0,75). This underlines that the ratio of the actual numbers of links to the possible total – or, to put it more simply, how many of all possible connections between actors are actually made – varies between the MDTs, with MDT2 showing a higher density thus evidencing *better network connectedness* (Fahy et al., 2001; Haythornthwaite, De Laat, et al., 2016). The shape and structure of this network connectivity will be studied further in this section (see 6.1.1.3).

The level of involvement of participants is measured by their degree of engagement in the MDTs all from posting once to posting up to 55 times in MDT1 and 89 times in MDT2. Up to 75% (MDT1) of the participants posted occasionally and were ‘low active’. The average number of postings per participant is also higher in MDT2 - but is similar in both MDTs when one discounts moderators’ postings. Therefore, the level of moderators’ involvement accounts for much of the difference in the average involvement of participants in MDT1 and 2. However, the results in Table 10, show that there are more high-active participants in MDT2 compared to MDT1: only one fourth of the participants posting in MDT1 posts more than ten times compared to over one third in MDT2.

Table 9 shows that both MDTs got a high number of views, all from 2956 in MDT1 compared to 4217 in MDT2 indicating covert company, defined as members who do not post but are known to read the group's postings regularly (Locke, 2016; Nonnecke et al., 2006; Schneider, 2013; Sun et al., 2014). Henceforth, the participants will be categorized in these three groups: (1) covert company, (2) low active members or members who demonstrate a *low level of involvement*, and (3) high-active members or members who *demonstrate high levels of involvement*. With a special focus on categories two and three since the technological means available on the platform do not provide any other data on covert company.

This categorization of members will be further studied as a function of their profiles in section 6.1.2.2. Whether low or high active, the reader will learn how participants also embody different roles in the community, at different times of their history of participation.

#### *6.1.1.2 Pace, persistence, and degree of centrality*

The average number of postings per participant evidences that the pace of interactions MDT1 is slower compared to MDT2. However, this result is not useful alone *since the duration of each MDT is significantly different*. The author therefore pays attention to when the postings happen in *the most active week for the two MDTs*.

##### *Main findings:*

- The patterns of interactions during the most active week are visibly very different from one MDT to another (see figures 18 and 19). In both MDTs most of the interactions (Table 11) take place during the working hours; yet weekends are proportionally more active in MDT2 (88 [8+18=26%]) compared to MDT1 (27[8+6=14%]).
- The patterns in MDT2 show a different pace (see 'Details' below). At a time when there is conflict and/or divergence, the analysis of shows that *more messages are sent outside of working hours*.
- The author interprets therefore that the conversation is staying on people's minds to push them to engage in the conversation instead of enjoying more leisurely activities and rest during their personal time. (The author will come back to this result, in section 6.1.3, to interpret why participants use their free time more often in MDT2).

**Table 11. The interaction during working hours vs. 'personal time': number of postings per moment of the day/week, in the most active week**

	Period	Time	Mon. N (%)	Tue. N (%)	Wed. N (%)	Thu. N (%)	Fri. N (%)	Sat. N (%)	Sun. N (%)	Total N (%)
MDT1	Nights	00:00-06:00	2 (1%)	1 (1%)		1 (1%)		1 (1%)		5 (3%)
	Early mornings	06:00-9:00	4 (2%)	6 (3%)	2 (1%)	4 (2%)	2 (1%)	2 (1%)	1 (1%)	21 (11%)
	Daytime	09:00-18:00	13 (7%)	19 (10%)	20 (11%)	24 (13%)	20 (11%)	7 (4%)	4 (2%)	107 (57%)
	Evenings	18:00-00:00	17 (9%)	6 (3%)	13 (7%)	5 (3%)	3 (2%)	5 (3%)	7 (4%)	56 (30%)
	<b>Total N (%)</b>		<b>36 (19%)</b>	<b>32 (17%)</b>	<b>35 (19%)</b>	<b>34 (18%)</b>	<b>25 (13%)</b>	<b>15 (8%)</b>	<b>12 (6%)</b>	<b>189 (100%)</b>
MDT2	Nights	00:00-06:00	2 (1%)	1 (0%)	2 (1%)			1 (0%)	2 (1%)	8 (2%)
	Early mornings	06:00-9:00	4 (1%)	6 (2%)	6 (2%)	6 (2%)	3 (1%)	3 (1%)	4 (1%)	32 (10%)
	Daytime	09:00-18:00	22 (7%)	31 (9%)	15 (4%)	40 (12%)	30 (9%)	13 (4%)	34 (10%)	185 (55%)
	Evenings	18:00-00:00	32 (10%)	12 (4%)	14 (4%)	8 (2%)	12 (4%)	11 (3%)	20 (6%)	109 (33%)
	<b>Total N (%)</b>		<b>60 (18%)</b>	<b>50 (15%)</b>	<b>37 (11%)</b>	<b>54 (16%)</b>	<b>45 (13%)</b>	<b>28 (8%)</b>	<b>60 (18%)</b>	<b>334 (100%)</b>

*Details:* In both MDTs most of the interactions (Table 11): take place during the working daytime 96 (52%) in MDT1 and 138 (41%) in MDT2. Yet, participants are quite active during their personal time as well with roughly 44% of postings shared in the early morning, evenings, nights, and weekends. More will be said on this when investigating factors of motivation (see 6.2.2.6, d and e) and what pushes participants to invest their personal time in the community and the conversation. Weekends are proportionally more active in MDT2 (88 (26%)) compared to MDT1 (27(14%)). Therefore, the observation of the patterns of interactions during *the most active week* in both MDT's becomes useful. In MDT1, the most active is week-20 with 46 postings for the five participants engaging (Figure 18). This increase in intensity of the conversation is induced by the action of one participant asking for support from peers. He asks and gets responses:

Hey all, ... Recently I was asked to give another course to students (Methods and Statistics) ... it seems students now decided they do not want to work with roles. The last time they worked ... without using a 'role' for each person. As you can imagine, some students did not get involved, others did. I



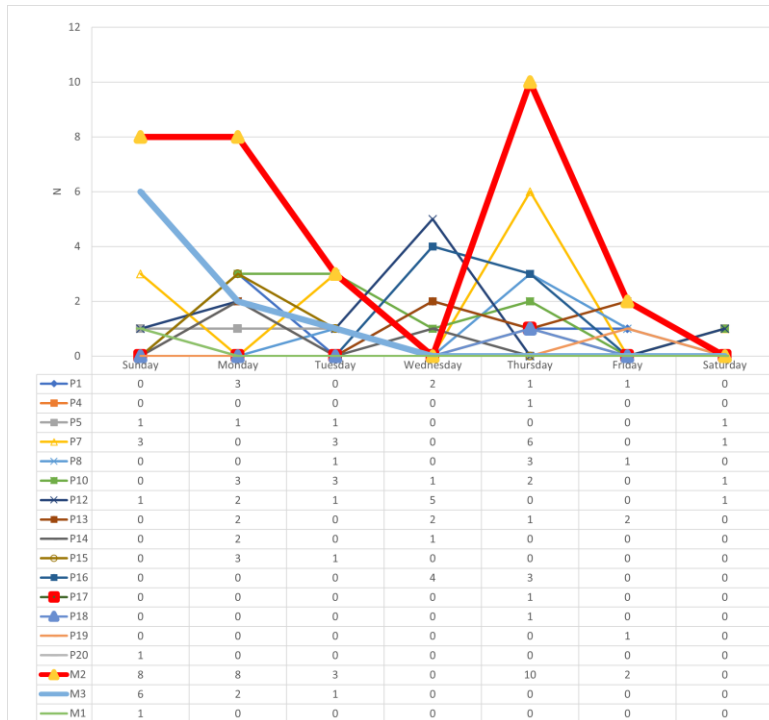
was wondering if you had any tips/tricks on how to improve their engagement ... I've tried to explain the reason for using the structures that did not convince them” (P12/yellow in Figure 18).



**Figure 18** The most active week of MDT1: 24 February - 2 March 2013. The total number of posts each day, Sunday to Saturday, for all 5 that were active, including four participants (Px) and one moderator (Mx).

This participant then gets several responses from peers. All the participants during that week interacted more than the moderator (Figure 18), who participated actively during the week by posting five times. The analysis of the content shows that the moderator gave feedback once to each of the participants which demonstrated that she is giving the other participants time and space to interact and to respond, and thus displaying turn taking.

In MDT2, a different pattern appeared. The most active week was the second week with 116 postings for 18 participants engaging (Figure 19). The increase in intensity of the conversation is characterized by multiple parallel interactions and sometimes controversial topics. The high peak of the week is on Thursday: the most active moderator (M2/red) posted ten times and was the most active participant.



**Figure 19** The most active week of MDT2: 3 - 9 November 2013. The total number of posts each day, Sunday to Saturday for all 18 that were active, including 15 participants (Px) and three moderators (Mx)

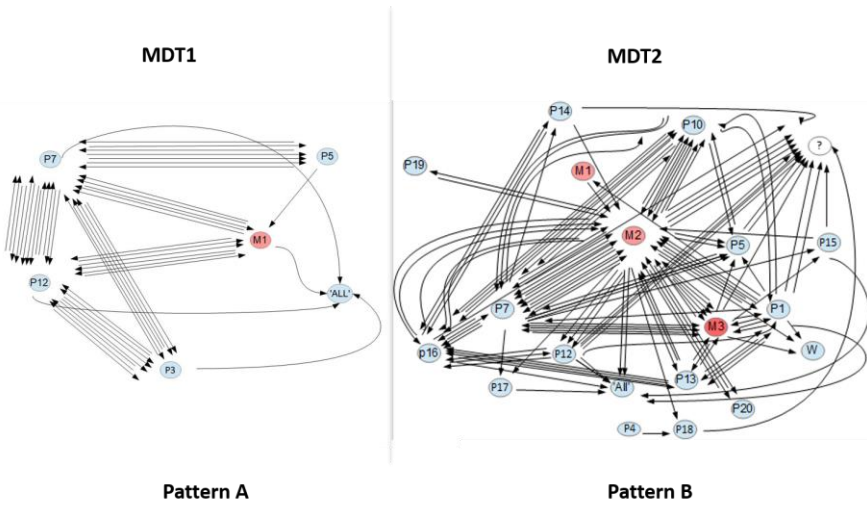
The pattern in MDTs 1 and 2 is further studied in the next section where the question of network nodes and topical persistence are investigated in detail.

### 6.1.1.3 Analyzing the network pattern: ‘nodes’, roles and topical persistence

*Main findings:*

- There are strong ties between participants in both MDTs as evidenced by the multiple back and forth arrows in Figure 20.
- In MDT2, in dyads (two participants, for example P7/P16) and triads (three participants, for example M3/P1/P13). If moderator M2 is actively engaged almost every day and placed herself in the position of ‘node’ of the conversation (Figure 20, pattern B), the pattern also shows that many participants are also in a nodal position in the conversation.

- Moderator (M2) is present with a high degree of centrality (Locke, 2016) unlike the moderator in MDT1 who does not hold a such nodal position (Figure 20, Pattern A). Importantly, one notices that centrality is not only reserved for moderators.



**Figure 20 Two sociograms: interactions in the most active week in MDT1&2 showing nodes in the network. Arrows indicate that the posting is from a sender to a receiver.**

*Details:* In the previous section, we observed that the moderator M1 in MDT1 gave participants the space and time to respond, before launching another task or question. In MDT2, we observed that the moderator, by posting frequently and at a high pace (Figure 19) placed herself in the position of ‘node’ of the conversation (Figure 20, Pattern B). Nonetheless, further analysis (Figure 20) shows that centrality is not reserved for moderators who are far from being the only nodes, for example in MDT2, as seven other participants also occupy nodal positions in the conversation as is evident in the sociograms, (Figure 20, Pattern B).

The analysis of the content of the conversation shows that the increase in pace is characterized by conflict and controversy, with multiple parallel conversations where participants engaged in *dyads* or *triads* (Figure 20, Pattern B), on several topics simultaneously the most popular being:

- relation between theory and practice
- non-violent communication,

- empathy,
- what to do with quiet students,
- teachers' own emotions in the classroom and if they should be shared with students.

There is therefore *topical persistence* – found by the calculation of levels of postings sent and received on the same topic by the participants (see section 5.3.1, Table 4) - but in a 'cacophony' with conversations evolving in parallel as if participants were talking 'over each other', as we may do in informal settings in life, and with the moderators getting involved in a high number of topics and parallel conversations.

This network pattern analysis also points to the issue of *roles* that members take in the community. Roles and the relational ties evolve with time for each member and the patterns in Figure 20 indicate that members are assuming roles at this point in time, in the MDT's that were studied. Pattern B for example shows an imbalance between the number of postings/responses emitted (seven) and received (fifteen) for one member (number and direction of arrows), P16, who intervenes late in the conversation but gets responses from other participants creating a sort of '*flocking*'. This participant is attracting attention, more than others, and this may be explained by her position in the program, since she holds an institutional position.

Therefore, the author observed that positions of status in the group impacted the patterns of interaction and therefore infers that relations of power are unveiled. This question of power will be investigated further in section 6.1.2.2 in relation to participants' roles, ties and centrality when studying the quality of collaboration towards depth of cognitive processing in the MDTs and again in section 6.2.2.2 relative to status and recognition of emergent leaders.

#### 6.1.1.4 Cohesion and evolution of the MDTs over time

##### *Main findings:*

- A high level of cohesion, defined in section 5.3.1, can be observed in both MDTs (Table 12), with a high median cohesion score of 6 (about 2/3 of interactions were coded as 'Interactive responses – explicit'). This means people are talking not to the group but responding to each other personally.
- This corroborates the strong ties found in section 6.1.1.3. Both MDTs grow more cohesive with time (Fig. 21 and 22), but MDT2 shows breakdowns in cohesion when conflict occurs (Fig. 22).

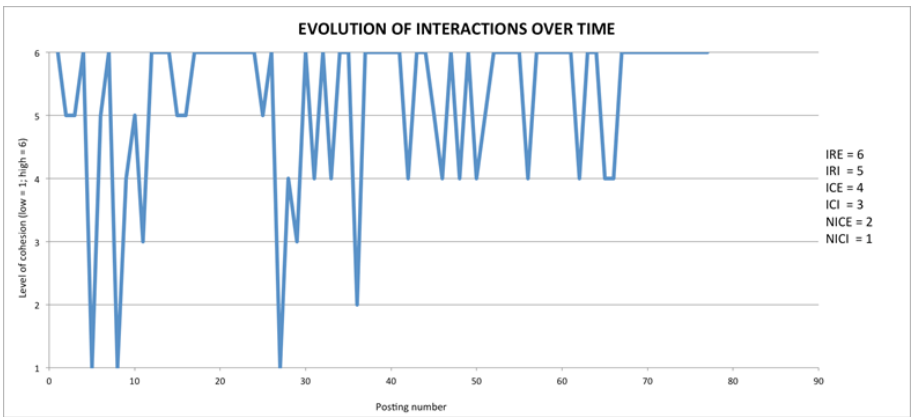
*Details:* Interactive responses that are explicit (IRE) are identified as most salient in the data (Table 12), indicating a high level of cohesion observed in both MDTs, with a high median cohesion score of 6 (Table 13). In all cases the name of participants, or other identities such as nicknames or initials, are intensively used evidencing cohesiveness: participants are mostly responding to each other directly and explicitly.

**Table 12 Interaction patterns: Cohesion and collaboration. Numbers and rates are based on the number of analyzed postings (N80) (scheduled prompts from the moderators were not included)**

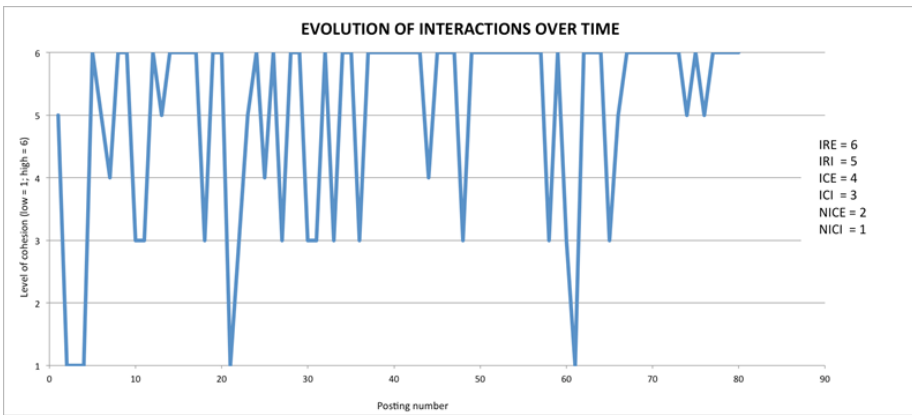
Interaction patterns	Code	Rank	MDT1* N (%)	MDT2* N (%)
Interactive responses explicit	IRE	6	48 (60%)	58 (71%)
Interactive responses implicit	IRI	5	10 (13%)	8 (10%)
Interactive commentaries explicit	ICE	4	11 (14%)	5 (6%)
Interactive commentaries implicit	ICI	3	2 (3%)	7 (9%)
Non-interactive explicit	NICE	2	1 (1%)	0 (0%)
Non-interactive implicit	NICI	1	3 (4%)	4 (5%)

\*Scheduled prompts were excluded because they are not relevant to analysis of patterns: they are mostly scheduled tasks, addressed to all.

Even though the appearance of the patterns is quite different between MDTs as shown in Figures 21 and 22, their cohesion and its development is statistically rather similar (average 5.22 and 5.07 for MDT1 and MDT2 respectively, with median value 6 in both cases) as shown in Table 13.



**Figure 21 Cohesion for each post, with 1 showing the lowest level of cohesion and 6 the highest level, and evolution over time in MDT1**

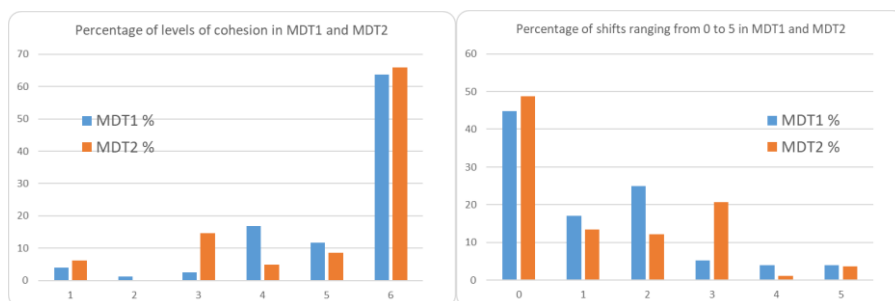


**Figure 22 Cohesion for each post, with 1 showing the lowest level of cohesion and 6 the highest level, and evolution over time in MDT2.**

**Table 13 Analysis of cohesion by average, median, standard deviation, proportion, and trend.**

		MDT1	MDT2
Number of posts analysed		77	82
Average level of cohesion		5,22	5,07
Median level of cohesion		6	6
Standard deviation in cohesion		1,3	1,5
Average shift amount		2,14	2,40
Proportion of instances (%) where shift occurred		45	49
Trend in cohesion level (Pearson)		0,221	0,316
Significance of trend	p	<0.05	<0.01

Figure 23, left panel, also shows that the cohesion for both discussion threads is high and similar. There is a small but significant trend towards higher cohesion over time in both cases. There is a tendency for less shift in cohesion levels as the postings progress as shown in Figure 23, right panel.



**Figure 23** The left panel shows the percentage at each cohesion level for the two discussion threads. The right panel shows percentage of shifts between levels, where 0 signifies no shift and 5 the largest possible shift either from 6 to 1 or vice versa.

Nevertheless, MDT2 shows breakdowns in cohesion, with intermittent appearance of low cohesion around post 50 and 60 (Figure 22) or so to say well into the conversation, whereas MDT1 has levels 4 and over in the second half of the conversation.

#### 6.1.1.5 Summary RQ1a

Concerning our question, '**What are the patterns of member's activity and interpersonal interactions observed in two MDTs' on the platform?' (RQ1a)**, there are clearly different patterns in the flow of the MDTs, in the network ties and degrees of centrality of participants.

Cohesion is high and shows interactions between participants who are responsive, most often citing peers by name. There is a slight trend towards stronger cohesion over time in both MDTs, with most postings in both MDTs going beyond level 3 of cohesion. But different patterns in the flow were observed in the studied MDTs. MDT1 is highly cohesive (Henri, 1992), with dense and stable interaction (Fahy et al., 2001; Ridley & Avery, 1979; Zhu, 2006) with the moderator asking questions and giving tasks at moderate intervals; activities are slow paced (Wise et al., 2014); participants take turns talking (Wiemann & Knapp, 1975) and stay focused on single topics (Fahy et al., 2001). MDT2, shows more unstable patterns: the interaction is overall cohesive, but with breakdowns in cohesion and it is denser than in MDT1; the pace is fast with a lack of turn taking; topical persistence is somewhat achieved, but in parallel peer-to-peer conversations: people were in dyads or triads, as if talking over each other.

*Size and involvement* differ, and controversy elicits heightened activity and involvement of participants but hinders equal participation.

*The lack of turn taking* in MDT2 also impeded equal access to participation with many participants not engaging in the conflict and assuming a bystander position.

*Dense relationships and strong ties* in the community supported teachers to engage in collaborative activity and wide exploration of new and diverse venues of thought. MDT2 indicates very high density and many parallel simultaneous interactions.

*Centrality and nodal postures* in the network are present in both MDTs and some participants come into new roles, occupying positions of centrality in the conversation. Thus, centrality is not reserved to moderators there is distributed leadership. However, the actual network patterns of both MDTs are different from orderly to somewhat chaotic.

*Topical persistence* is high but with different patterns, MDT1 shows turn taking a focus on single topics; MDT2 features many parallel discussions on different but related topics, as if people were talking over each other.



### 6.1.2 Quality of collaboration: Levels of meaning making, depth and quality of co-construction of knowledge (RQ1b)

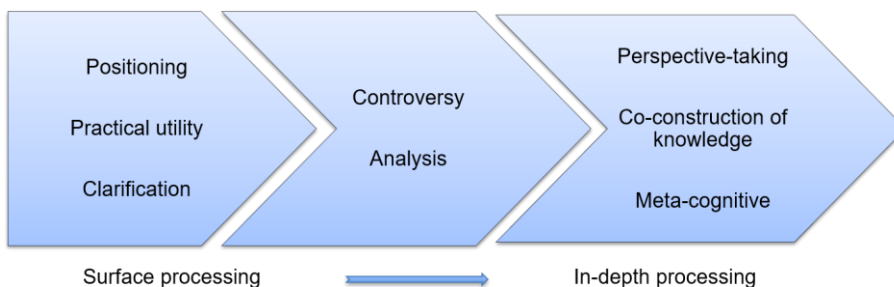
In this section results from the thematic analysis are presented first (Table 14), followed by a more detailed analysis of the occurrences (Table 15) of themes in a comparative approach between the two MDTs. The thematic analysis generated themes that describe *eight levels of cognitive processing* (Table 14). (The process of coding was described in section 5.3.2.1).

**Table 14 Codebook with themes, descriptions, and examples from data**

Theme	Indicator	Examples
<b>Positioning</b>	Stating opinion, expressing values, beliefs, personal theories.	I do agree with the observation that teachers are more than often in an "I-know-attitude". ...However, I would not blame them.
<b>Practical utility</b>	Giving examples, descriptions, sharing experience-based info.	Happy to hear it ['mystery stories'] is being used. I think I'll try it out sometime soon to see how students react.
<b>Clarification</b>	Explaining, repeating information, clarifying.	Maybe we should change the question to make it clear!!! Because the 'yes' to the second question means that there is constructive Interdependence.
<b>Controversy</b>	Disagreeing, being argumentative; judging, offering critical assessment, justification, conflict.	Teachers ... are so focused on improving others that they completely forget about improving themselves. Instead [...] they like hiding behind the big theories from which they quote to show off their knowledge [reference to a previous posting].
<b>Analysis</b>	Interpreting, making inferences; comparing, mapping;	I am wondering why we ... keep on basing our education on something that doesn't work ... And I'm wondering what are the forces that keep the status quo in place?
<b>Perspective-taking</b>	Questioning one's principles/values/beliefs/personal theories, exploration of dissonance.	When I started teaching ... I felt terrorized by the idea that I might know less than my students. Finally, I made up my mind, and claimed the right "not to know" in my class.

<b>Co-construction of knowledge</b>	Linking ideas, negotiation of meanings, coming to an understanding; application of newly constructed meaning, testing.	Thank you for answering my question about "external skills" and empathy [...] I am not sure that empathy could not be taught. ... Let's think about how to develop empathy... Ideas?
<b>Meta-cognitive</b>	In-depth reflective activity, awareness and understanding of knowledge and learning, awareness of the above within the whole system.	To ... communicate in a [discussion] thread requires many different types of heads working together, listening empathically to each other. I like this thread very much because I can see how different we all are, and I love it!

The themes were positioned on a map figuring a continuum (Figure 24) from surface processing to in-depth processing. This is not a continuum observed linearly in the MDT but rather a classification on the basis of scales of depth of cognitive processing, corroborated by the literature (Newman et al., 1995; Zhu, 1996; Gunawardena et al., 1997; Kanuka & Anderson, 1998 ; Jarvela & Häkkinen, 2002; Häkkinen et al., 2003; Lockhorst et al., 2003; Pena-Schaff & Nicholls, 2004; Artino & Stephens, 2006; Häkkinen & Järvelä, 2006), (see also section 4.3.2) This mapping supports evaluation of the depth of knowledge construction occurring in the conversation.



**Figure 24 Thematic map: a continuum from surface to in-depth cognitive processing**

### 6.1.2.1 Cognitive dimension in both MDTs

#### Main findings:

- MDT1 is characterized by a salience of co-construction and practical utility, with most of participants' utterances revolving around making new meanings.
- MDT2 shows positioning and controversy as prominent in the discussion, with participants mostly stating their viewpoints and rarely genuinely confronting their ideas and engaging in much negotiation of meaning.

Table 15 demonstrates the levels of cognitive processing, for the first 80 coded postings in each MDT.

**Table 15. Occurrences of postings per category of cognitive activity from surface to in-depth cognitive processing**

Processing	Coding	Occurrences (N)	
		MDT1	MDT2
	Task*	16	17
<b>Surface processing:</b> simple collaborative activity with lower order thinking skills	Positioning	22	34
	Practical utility	33	21
	Clarification	10	9
<b>Introducing complexity:</b> and higher-level cognitive activities	Controversy	4	30
	Analysis	17	10
<b>In-depth processing:</b> Deeper level of meaning making	Perspective taking	10	11
	Co-construction of knowledge	27	22
	Meta-cognitive activity	3	2

\* Moderators' postings proposing 'tasks' or prompts to participants are not included in the following analysis since they offer no indication about the level of cognitive processing.

*Details:* MDT1 has a larger number of deeper level of interactions/increased depth of interaction. As seen in Table 15, the analysis demonstrates the number and rate of the coded postings in each MDT and the thematic categorizations.

MDT1 is characterized by a salience of *co-construction* and *practical utility*, with most of participants' utterances revolving around making new meanings, whereas MDT2 shows *positioning* and *controversy* as prominent in the discussion, with participants merely stating their viewpoints without genuinely confronting their ideas and engaging in much negotiation of meaning. Considering the difference in moderation activities and style in each MDT, the scaffolding activity seems to have brought in more co-construction of new knowledge. The more 'impulsive' or 'spontaneous' type of moderation seems to have guided participant towards more self-affirmation (positioning) and argumentative, critical, and judgmental messages.

#### 6.1.2.2 *Level of cognitive processing in relation to participants' roles*

##### *Main findings:*

- Seven out of nine highly active participants reached in-depth processing and a deeper level of meaning making.
- In both MDTs, moderators' postings matched all the identified categories on the cognitive dimensions (Table 16) as the scope and depth of their postings varied throughout.
- The less active participants do not reach the same degree of depth in the conversation as the more active participants.
- Thus, it may be inferred that *engagement in the conversation gives access to deeper cognitive processing to those participants who actively post and invest to partake in the conversation.*

**Table 16 Categories of cognitive processing displayed by highly active participants within the first 80 postings of MDT1 and MDT2**

		<div style="display: flex; justify-content: space-between; align-items: center;"> <span>MDT1</span> <span>MDT2</span> </div>													
		P6	P12	P8	P5	P4	P1	P10	P3	P7	P5	M3	M1	M2	
Total number of posts:		11	14	18	19	20	25	25	25	29	30	35	55	89	
Number and categorization of the content analysed posts:															
Surface processing	Task				1	1	2		5		2	5	7	6	
	Positioning	2	1		2	1	3	1	1	1	1	5	8	8	
	Clarification		1	1			4		1		1	1	5	1	
Mediate processing	Controversy			1		1	2				3	1	3	8	
	Analysis			2		1			3	1		3	2	1	
	Practical utility	2	3	3	1	2	2	1	2	1		3	21	5	
In-depth processing	Perspective taking			2					1	1		1	2	4	
	Co-construction of knowledge		1	1		3	1		3	2	3	7	15	5	
	Meta-cognitive activity										1	2	1	2	

*Details:* The number of postings per category of postings (Table 16), posted by the high-active participants reveals information regarding the nature of participants’ involvement as per the level of cognitive processing. Most of the high-active participants are core members all known as having various roles and a long history of participation in several activities launched by the Pestalozzi Programme (i.e., trainings, task force, evaluation, and publication), only three participants are not core members. Thus, familiarity with ideas and a sense of belonging to the community may in part account for the nature of the interactions. In a scenario where participants were new to each other and to the ideas being discussed, the patterns of interaction might differ.

The most engaged and active participants were the moderators (M3) in MDT2 posting 89 times and the M1 of MDT1 posting in total 55 times, taking on various roles. However, the moderator in MDT1 overwhelmingly interacts on the level of practical utility (experience and context-based) and co-construction (linking ideas, synthesizing, coming to new understandings), whereas the moderator in MDT2 is interacting on the level of personal positioning (opinion-based, expressing values/beliefs/personal theories) and controversy (argumentative and critical).

What appears as significant is that participants who post a lot (the high active as defined in Table 10, section 6.1.1.1), irrespective of whether they

are part of the core or not, reach a wider scope of conversation and depth of cognitive processing compared to the others. They manage to match more of the identified categories on the cognitive dimensions, and especially the higher order ones.

As members engage in moderated discussion threads (MDTs), different roles and typologies of engagement are observed. Members who post infrequently are considered *peripheral* or *outsiders*. On the other end of the spectrum, *core* members or insiders are those who post regularly, or even daily; they have strong ties with their preferred peers and a high impact on the proceedings of the conversation. Within these core members, a few have an official role to facilitate discussions and are contracted as *moderators*. Other members may step-in, impromptu, to play a facilitation role although they are not appointed moderators, often because they have been recognized as legitimate by the community and are considered as *emergent leaders* on a topic.

Further to these leadership roles, the author identified 7 *roles* for members, who are not moderators in the 2 studied MDTs:

- '*covert company*' (Haythornthwaite, Andrews, et al., 2016) who reads but do not post; we cannot say much of these types of members as we have little data other than the number of views to each MDT. When the number is high, we estimate that the '*covert company*' is consequent. Scientific literature points to several self-reported factors that may explain this behavior (Crawford, 2002): lack of time, difficulty of accessing the platform, concern about privacy and anonymity, other priorities, and lack of understanding of how peer conversation can support CPD reflecting a normative view about how communication between professionals should be structured.

All the following types can be considered part of what Crawford (2002), B. Broadbent (2002) and Salmon (2000) respectively qualify as '*swimmers*', '*accommodators*', or '*addicts*' - participants who can plunge right in the conversation, promote the relationships and community life, connect and engage others and are able to integrate quickly into a known community. However, the author of this thesis has defined participants' stances in a more nuanced, and detailed way, following the analysis of the data at hand:

- '*sharer*' who mostly post links (text-based, images, videos etc.) but few self-authored, original postings;
- '*entertainer*' who mostly posts light comments to brighten the day, usually but not always related to the topic;

- *'learner'* who mainly asks questions and requests for counsel and support;
- *'self-reflective'* who engage with their practitioner perspective, telling mostly stories of their experiences in classrooms and their evaluations of these;
- *'facilitator'* who may step into a moderation role (proposing tasks, asking questions to deepen the reflection), although no prompts to do so have been emitted and no institutional position requires them to do so;
- *'tutor'* who constitute most of their postings as mini-lectures or videos of lectures and give their *'expert'* view on topics the community members are grappling with.

It is worth mentioning, although it is not within the purview of this research, that within conversations, in different times, in different spaces of the platform, members embody different roles.

### 6.1.2.3 *Affective dimensions in the conversation*

#### *Main findings:*

- Whereas postings in MDT1 show mostly expressions of satisfaction with the collaboration, in MDT2, although the number of postings is high, fewer participants posted than in other sequences of MDT2.
- This means that the nature of members' engagement in the conversation is tributary to their emotional state: the activity picks up at a high pace, but many members *'disappear'* during the conflict.

*Details:* While MDT1 showed participants' willingness to build on each other's contributions,

Dear A., I like your active answers very much! (...) nice solution for involvement all (...) How can we be sure that the listener (the other micro-groups) will be involved to? (P3).

In MDT 2, the conversation became conflictual as the discussion progressed. The moderator questions the usefulness of participants' theoretically based responses:

Anyway, I read somewhere that there are 170 different models and theories about communication ... you could be very

knowledgeable about the topic, know all the theory by heart and still be a poor communicator. I am a practitioner and as such I am interested in practical solutions. (M2).

One of the participants who had contributed a theoretical response takes on the moderator's position to rebuke it,

I think theoretical approach is not for nothing. It is important to understand different aspects of communication to improve our practical communication skills. (P7).

Following these two postings, the MDT will become conflictual and controversial, and this *flaming* will create a concentration of the activity in fewer participants. This is evidenced by the multiple occurrences of rebukes and even shouting (capital letters, and exclamatory punctuation are considered paralinguistic means of expressing conflict); the posting by a small number of participants who engage in the conflict; 'power over', '*I'm right/you're wrong*' talk; and posting mostly negative comments (italicized in the examples by the author) characterizing teachers:

as poor communicators,

They [teachers] are so focused on improving others that they completely forget about improving themselves. Instead ... *they like hiding* behind the big theories from which they quote *to show off* their knowledge and *to intimidate* their 'opponents'. THAT'S ONE OF THE REASONS WHY SCHOOL DOESN'T CHANGE!!! I asked a simple question: "How can I improve my listening skills?" (M2).

and as not contributing to the solution but stopping at complaining,

And then, *there are VAMPIRES*, that's how I call them ... they end up *draining* my energy and I am exhausted shortly after." (M4)

... what I try to avoid in school is teachers complaining about pupils. I call such teachers '*black holes*';D (P10)

We can stop BLAMING, CRITICIZING AND COMPLAINING: the three cancers of all relationships." (M2)



The turn of the conversation creates increasing discomfort, and sarcasm; P1 stated for example:

You say: "I asked a simple question: "How can I improve my listening skills?" C'mon! There must be answers." I typed your question into Google and got 10 million hits (P1)

There were also attempts to intervene to express their need for the conversation to remain civil. P9 was one of the participants trying:

Communication is really important. It's not about finding culprits, but finding solutions... (P9)

The same applies to P11.

I would like to add a positive point in all the negative thoughts: 'they don't', 'they don't want to' ... (P11)

After two days of exchanges, the moderator posts an apology for having fueled conflict:

Should I have hurt anyone's feelings with my exaggerated statements, I apologize. ... I found out that I do have excellent listening skills (in fact, we all have). It just so happens that they deteriorate drastically the moment I have to listen to something I am not interested in. (M2)

We observe throughout this exchange that although the number of postings is high, fewer participants posted than in other sequences of MDT2. This evidences that conflict and controversy in the conversation may not be conducive to equal access to the conversation, as a number of participants tend to 'shy away' from participating in the controversy and may adopt the position of 'bystander'.

Another type of conflict was observed that is much more challenging to evidence and that we term 'the passive voice'. The literature on the emotional aspect of computer-mediated communication is scarce and the author has found little on the topic of *passive aggression* in online conversation in the context of collaboration. Tan, Luyten, Van Den Bergh, Schöning, and Coninx (2014) interestingly point to the importance of physical cues to improve empathy among collaborators. They highlight the

importance of empathy to build trust and strengthen collaborative relationships: physiological cues are fundamental cognitive triggers, which can be used to inform how the person can infer another's emotion and act on one's own social behavior.

In the absence of such physical cues, subtleties in utterances and style of communication can lead participants to interpret, adjust, consciously or not, to the other's feelings and do something about it. Such subtleties through the written word includes actions such as abruptly failing to respond when previously involved in a discussion, giving indirect queues of negativity by, for example, providing what looks like positive feedback but is actually criticism, inductive questioning, ignoring participants you disagree with, or showing stubbornness by piling up evidence of the fact that you are right and the others are wrong, etc. There are utterances that do not openly criticize but subtly put stress on the relationship and the interaction in an implicit way. The two coders have had to code specifically for these occurrences.

The following example illustrates such conflictual interactions. After the posting – that the author terms 'trigger-post' because it has triggered a series of reactions, whether explicit or implicit – on 'BLAMING, CRITICIZING AND COMPLAINING, the three cancer of all relationships', a second participant posts a reply, addressing it to another member of the community – a person different from the author of the trigger-post, (this, in itself, is considered a passive aggressive behavior):

Dear ..., ... Anyway I do not have any problem with criticizing (what about critical thinking then?), with blaming (what about crimes against humanity then?) and with complaining (how would you express when you can bear your emotions no more inside then?). For me conscious communication is not about...  
(P7)

The author adds here that *analytical devices that were created for the study* – such measures of cohesion and network analysis for example - *proved useful to 'unearth' implicit aspects of the online conversation.* Interestingly just before this posting the cohesiveness of the group had broken down, with an increase in postings that were neither interactive responses (IRE) nor comments explicitly (ICE) responding to a member of the community (IRE & ICE: see section 5.3.1 on cohesion). Being able to reveal such diverse cues in the conversation allows the author to infer that postings that may appear innocuous may in fact be conflicts and

controversies unfolding. Without the model for the analysis of cohesion, created for the purpose of the study, the coders would have missed this occurrence of conflict.

#### 6.1.2.4 Summary RQ1b

Thus, to the question '***What do the patterns indicate about the nature of interpersonal interactions as they relate to the depth and quality of collaboration in the conversation?***' (RQ1b) it appears that the patterns of interaction and specifically their conflictual nature affected the quality of collaboration. MDT1 was slow paced and produced a visible outcome with participants designing multiple tools for teaching and learning and focused on supporting each other. MDT2 was fast paced and conflictual produced lesser high-level cognitive activities: we observe more surface-processing with simple collaborative activity and lower order thinking skills such as positioning and controversial talk. The conversation is fast paced, with activities produced at extreme hours, late at night early in the morning, on weekends, showing activity that could be considered as compulsive – and proving high emotional engagement - wherein participants express mostly personal points of view (stating opinion, expressing values, beliefs, personal theories), and little scaffolding.

When the pace is moderate and the conversation structured, participants were provided with opportunities for shared regulation (Järvelä et al., 2014) and scaffolding their knowledge to produce new knowledge. Thus, participants showed ability to instigate and sustain inquiry and engaged in activities that we assessed as high-level cognitive activities (deNoyelles et al., 2014; Garrison et al., 2001; Järvelä, Malmberg, et al., 2016; Järvelä & Renninger, 2014; Rourke et al., 1999).

*Cohesive interactions* support good quality of collaboration and co-construction of knowledge.

*Scaffolding* by the moderator and peers support co-construction of knowledge.

*Discursive alignments*, the degree of convergence and divergence, incite different cohesion patterns in the conversation, i.e., *there is disruption of cohesion in controversial conversation*, when the conversation is flaming. In the case of disagreements, congeniality is observed.

*Emotional engagement* is observed with the compulsive activity, produced at extreme hours, late at night early in the morning, on weekends. For those who do engage it is observable that the conversation

stays with them throughout the moment, at times for days, as participants may be feeling upset and thus experience “compulsive involvement”.

### **6.1.3 Moderation styles for shaping co-construction of knowledge and dealing with controversy (RQ1c)**

The author presents results for this aspect of the study by providing a comparative analysis of two episodes, one from each MDT, as fundamental differences were observed in terms of control in MDT1 and MDT2.

#### *Main findings:*

- Moderators display very different attitudes and behaviors and a very different moderation style.
- In MDT1, the moderation style is ‘pedagogical’ but not shying away from constructive cognitive conflict (teaching presence);
- The other moderator displays a ‘peer-to-peer’, impulsive, controversial, and confrontational moderation style (peer presence).
- MDT1 resulted in the *design of multiple tools* for teaching and learning, whereas MDT2 produced few visible outputs but perhaps a *more advanced and deeper reflection on values*.

*Details:* The detailed analysis is presented in sections 6.1.3.1 and 6.1.3.2.

#### **6.1.3.1 Case 1: Moderator with a teaching presence**

In MDT1, the moderator carefully scaffolds the collaboration by using a slow pace and structured activities. Moderator strategies consist of a step-by-step activity: the co-construction of a teaching resource to further learn about cooperative principles. The moderator shares an activity that does not follow the sought-after cooperative principles (shared earlier in the conversation).

I upload an activity now (it’s taken from ...’s TU [Training Unit\*]). I chose it because it is adaptable to most any course or training session. Have an up-lifting day! P. \*From ‘Prevention of crimes against humanity’ modules series. (M1)

She proposes to re-design the activity so that the principles of cooperative learning are respected. These principles are considered as fundamental rules in the community because they sustain a democratic environment in that they provide equal access to learning, positive

interdependence between learners, individual accountability, and increased engagement through parallel interaction. The prompt boosts participants' engagement: it launches a series of postings, a co-constructive activity that will involve 16 postings between five participants in the conversation, over a period of seven weeks, to re-design the activity and reflect on what the principles imply in terms of activity design:

Dear... and ..., I like this activity very much! From the aspect of CL [Cooperative Learning] I would ask: Should we select the micro-groups directly or randomly? ... In step 4 and 5 how we can provide equal access and participation? Can we structure these steps providing parallel interaction? In step 5 how we can provide encouraging and constructive interdependence among the participants? (P3)

In the following examples, participants deepen the reflection by deconstructing each step of an educational sequence. After several responses, the moderator continues to support the reflection and pursue the task:

... often the group presentations are actually the anti-climax whereas they should be the climax ... something is missing. (M1)

How to engage the members of the other micro-groups in listening to the other groups is a very important question. In my experience, if the listeners have to give feedback, and ask questions to the other groups, it makes them feel more engaged. (P5)

When the teaching activity has been adequately re-designed, the moderator M1 posts the outcome in an uploaded document:

Dear all, Here is the latest version of the 'Patchwork of Our Learning' ... The result is quite a different activity! ... What I find interesting is that the structure also allows for individual assessment of learners' performance and the measurement of individual attainment inside a cooperative context ... I hope some of you have time to read and compare. (M1)

Only when the task is deemed accomplished does she move onto another prompt and task to continue the conversation. Therefore, the moderator's stance, in this case, is coined '*pedagogical stance*'. An outcome (reflection on cooperative principles) and an output (teaching resource) are attained. The activity was published 18 months later in a Council of Europe publication (Mompoin-Gaillard & Lazàr, 2015a).

#### *6.1.3.2 Case 2: Moderator with a peer presence*

In MDT2, moderators post multiple times, at a fast pace and in an unstructured way, often without waiting for participants' responses. The moderators also use numerous questions within the same posting. In this they place themselves on the same level as participants, posting as they wish without a specific plan, structure, nor coordinated actions. In this case, the moderator stance is coined a '*peer-to-peer*' stance.

The multiplication of questions and postings fails to provide participants with discernible contours of collaborative discussion and the fast pace creates illegibility of the posted content and questions. As a result, the first 15 posts from eight participants do not demonstrate cohesiveness as the postings are not responses to one another, nor interactive but independent postings relative to communication theories, mostly results of internet searches or readings (even though the prompt pointed participants to share their personal stories). One of the moderators, (M2) expresses some frustration with the situation:

When I asked this question, I didn't mean to start an intellectual discourse on communication but rather bring to mind all the aspects with which we send signals or communicate as teachers" (M2)

She attempts to re-orient the conversation with a new prompt:

As we write in our intro, communication consists of ... I'm wondering whether or not this list is complete or if some of you can add to it? (M2)

However, her next posting goes in another direction:

What would be a smart way of getting your child to read? My guess is: being a passionate reader yourself! (M)

Even though a couple of participants will try to engage with the prompt - the task to add to the list of what conscious communication in teaching consists of - the activity will not be followed and produce a visible outcome and output as it did in MDT1 in which persistence in the task allowed for the complete redesigning of a teaching activity. In the case above, the intent of launching a co-constructive activity around a prompt is not followed by a recognizable result.

### 6.1.3.3 Summary RQ1c

In terms of cognitive processing, different patterns in the MDTs were observed, and the analysis of the depth of cognitive processing showed that MDT1 is characterized by a salience of practical utility and co-construction of knowledge, and MDT2 by positioning and controversy. Moderators displayed very different attitudes and behaviors and a very different moderation style, one being pedagogically structured and the other peer-to-peer structured.

*The moderator displayed a teaching presence in MDT1*, using methods that invited turn taking and gave participants time and space to interact at their pace. This reinforced scaffolding of content brought in by participants and supported co-construction of knowledge and deeper cognitive processing. The moderator in MDT1 mainly interacts on the level of practical utility (experience-based, context based problem-solving) and co-construction of knowledge (linking ideas, negotiating meaning, and coming to an understanding),

*The moderator displayed a peer presence in MDT2*, postings were intense and impulsive, occurring at all hours, several times a day, particularly when conflict and controversy arose. This impacted participants' participation, and the quality of the collaboration and co-construction of knowledge, with cognitive processing activities staying at more superficial levels. The moderator in MDT2 is interacting at the level of personal positioning (stating opinion, expressing values, beliefs, and personal theories) and controversy (argumentative and critical).

*Curiosity as a strategy* is used by both moderators (see also section 6.2.1 & 6.2.2.1) to maintain engagement, by posting original and 'unexpected content'. However, when this is done without a plan to scaffold for collaborative learning and produce co-construction of knowledge, the conversation grows rapidly disconnected and less cohesive (breakdowns).

*Conflict produced strong effects*. One outcome of MDT2 and the peer-to-peer stance of the moderator was the high *congeniality* and *heteroglossia*

within the dialogue in that those who disagreed continued to communicate in a respectful way, thus practicing the democratic culture that the community explicitly names as an essential aspect of its playground. Conflict and controversy can thus also be an opportunity for members of the community to gain awareness - in real time - of the communication, emotional, social collaborative processes that are playing out in the conversation. Nothing in our data may tell us about 'what was learnt' in absolute by participants. Our findings rest on nothing more than on our analysis of what was 'visible learning' in terms of depth of cognitive processing.

## **6.2 The motivation of education professionals to engage in OPLCs: eight themes relative to motivational factors generated from the data**

The systematic analysis of the content of the conversation in the two sampled MDTs supported the investigation into the question of the motivation of members of the community to engage in the conversation. The intent was to use theoretical models and constructs coherent with regard to our approach for the analysis: i.e., the application of the underlying concepts of SDT as main model by which motivation is supported by the need for autonomy, competence, and relatedness (Deci & Ryan, 1985).

### **6.2.1 The benefits participants acquire through their engagement in continuous online conversation (RQ2a)**

In relation to SDT, chosen as a supportive model used after the inductive phase, the analysis indicated competence, relatedness, and autonomy supportive themes, but not only. The thematic analysis and the pertaining successive iterations of coding made it possible to identify:

- *gaps*: content that could not be coded using Deci and Ryan's theoretical model,
- *overlap*: content that could fit into more than one category,
- *lack of precision*: content that the coding with SDT could not sufficiently describe.

Consequently, it was necessary to further define and refine the categories accordingly to avoid these gaps, overlaps and lack of precision. Most importantly, the investigation revealed content that could not fit into



the SDT model. Thematic analysis of this ‘left-over’ content helped identify a major theme: *Curiosity* could account for the many segments of content denoting the need for novelty or ‘newness’ and ‘being surprised’, i.e., all content that sparked participants’ curiosity and subsequent engagement. The coding of the transcripts of the conversation revealed the main themes and occurrences as shown in Table 17. (The process of coding was described in section 5.3.2.1).

**Table 17. Supportive themes and their occurrences in the two moderated discussion threads (MDT1 & MDT2): number of postings (N) and percentage of specific coding relative to total number of codes. Curiosity was added to the SDT model as a major motivational factor playing out in online conversation.**

Themes	Coding for motivational factors N (%)	
	MDT1	MDT2
Competence/Self-efficacy	55 (69%)	48 (59%)
Relatedness	39 (49%)	47 (57%)
Autonomy	30 (38%)	37 (45%)
Curiosity	23 (29%)	16 (20%)

#### 6.2.1.1 Competence supportive themes

In both MDTs the need for competence, defined as *the belief in one’s ability to perform and attain goals* (a definition close to Bandura’s (1994) concept of *self-efficacy*), is shown as a most salient factor of motivation towards participants’ engagement in the conversation: postings having been coded as belonging to the competence theme are respectively 55 in MDT1 and 48 in MDT2 (Table 17), in other words roughly around half of all postings. Competence supportive themes are therefore obviously preponderant in the conversation. The observation and analysis of the competence supportive themes gave way to two categories to best describe the content of the conversation: they are developed in section 6.2.2.2 and 6.2.2.3.

#### 6.2.1.2 Relatedness supportive themes

Relatedness supportive themes describe content that indicates members connecting with each other collectively and expressing belonging. In both MDTs the need for relatedness, defined as *the feeling of being securely connected to the social surround and the need to experience oneself as*

*worthy in a group* (Connell & Wellborn, 1991; Hartnett, 2010) is revealed as very significant. Participants specifically indicate their attempt at developing relatedness, a connection and belonging through their style of writing, or 'voice', and the content of the postings as well. Sections 6.2.2.4, 6.2.2.5 and 6.2.2.6 present some of the findings concerning specific categories of this theme.

#### 6.2.1.3 *Autonomy supportive themes*

Participants demonstrate their need for autonomy by engaging in and *regulating* the conversation using their cognitive and social abilities. Although there is a component of competence in the autonomy supportive themes, the team of coders specifically coded for autonomy when participants postings shaped the conversation by pointing it, or attempting to point it to other directions, or reorienting it towards the pursuit of one's own goals. The criteria for coding were therefore actual reorientation of and attempts at shaping the conversation. The need for autonomy is salient in the data, the satisfaction of which represents a benefit that participants get from their engagement in the conversation. Specifics of this theme are presented in sections 6.2.2.7 and 6.2.2.8.

#### 6.2.1.4 *Curiosity supportive themes*

This theme was generated from the analysis and therefore added to the SDT model. Curiosity is defined as *activity that sustains interest and assures motivation, whereas content that is too obvious or too mainstream is not motivating*. In relation to SDT, the study confirmed competence, relatedness, and autonomy supportive themes in both MDTs *as well as content that could not fit into the model*. The analysis of 'left-over' content generated one theme, *curiosity*. Specifics of this theme are presented in sections 6.2.2.1.

#### 6.2.1.5 *Summary RQ2a*

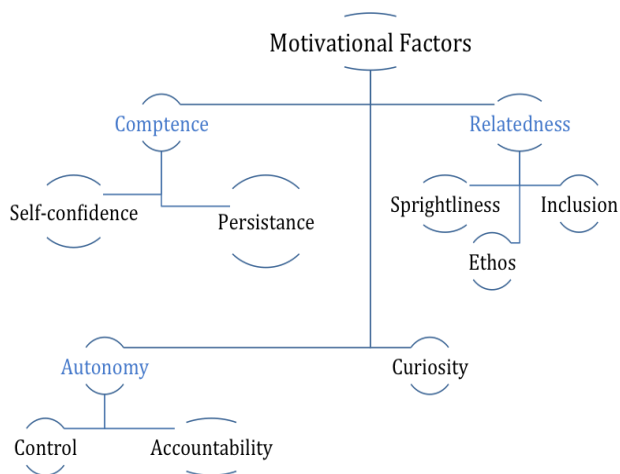
Competence, relatedness, autonomy and curiosity supportive themes were observed throughout the conversation. Teachers engaged in the conversation with goals to first demonstrate competence and develop it further for the professional growth. The goal of relatedness was also predominant with participants engaging in abundant activities that support connectedness, and interpersonal bonds. Thus, an important benefit to engagement in conversation is the pleasure to join and connect with likeminded peers. Participants likewise fulfilled their need for autonomy, thus demonstrating their access to participation on their own terms and exerting control over and therefore regulation of the content and direction

of the conversation. Participants also satisfied their need for curiosity which sustained their interest and supported their engagement as a motivated activity.

### 6.2.2 Discernible factors contributing to participants' motivation to engage in online conversation and sustain their engagement? (RQ2b, RQ2C)

However, in the process of the interpretative analysis, it became apparent that the SDT model, although helpful because it brought out wide categories for possible coding, would be less helpful in describing the complexity of what was observed in the data. Therefore, the scope of our literature review was widened and additional theoretical sources relevant to the object of the RQs were gathered, that allowed to describe in depth the elements observed in the data.

Most importantly these sources helped identify new themes and relevant categories which the author describes in detail in this section, explaining how these categories were generated from the analysis of the data and how they were situated in relation to Deci and Ryan's model of motivation. Thus, the author was able to convey the full complexity of the context, content and interactions taking place in the conversation to infer motivational factors. The result of this process of describing, defining, and clustering, to achieve more precision in the analysis, is shown in Figure 25 and Table 18 and is further illustrated in the following sections.



**Figure 25. Thematic map of motivational factors in relation to Self-determination theory (SDT)**

The deeper analysis of the remaining content identified *eight themes: sprightliness, inclusion, ethos, self-confidence in one's practice, persistence towards attaining goals, control, accountability, and curiosity*, as shown in Figure 25. Thus, eight generated themes (Table 18 and 19) convey the complexity of the content of the interactions and the collaborations to understand participants' engagement as a motivated activity (RQ2b) - that is sustained over time (RQ2c). The occurrences of each theme are shown in Table 19.

**Table 18. Themes generated from the analysis of participants' motivation to engage in the conversation: eight themes considered as factors supporting motivation to engage and remain active.**

Themes from SDT	Generated themes	Categories within themes
<i>Competence</i> supportive themes	<b>Self-confidence in one's practice</b>	relevance to own experience; expertise; self-efficacy and sense of agency; questioning one's practice (cognitive and meta-cognitive ability)
	<b>Persistence towards attaining goals</b>	feedback, going deeper, challenge; appreciation of outcomes, acceptance of effort, deferred gratification; coming to a common understanding
<i>Relatedness</i> supportive themes	<b>Sprightliness</b>	enthusiasm; gratitude; compliments; humor (buoyancy, friendly stances, joyful responses, expression of affinity, warmth)
	<b>Inclusion</b>	welcoming peers, not being ignored; sense of belonging, identifying with the community; safe learning space (connection, shared histories, feeling of being an insider, companionship, trust and empathy, caring atmosphere)
	<b>Ethos</b>	value-based content, sense of common purpose, collective efficacy; congruence; responsibility for the commons, reciprocity (respect, pro-sharing norm, giving/receiving)
<i>Autonomy</i> supportive themes	<b>Control</b>	access to participation on one's own terms; personal goals; choice, freedom, regulation, (ownership, initiative, spontaneity, risk-taking)
	<b>Accountability</b>	sense of responsibility, individual accountability
	<b>Curiosity</b>	surprising content; expectative mood; unexpected informative feedback; surprise as a moderator-strategy (novelty, strangeness, new resource, quirky questions, challenge, or task that is new or unrelated to previous posts, quiz/tests)

The following sections present the findings *per theme* for sample 1. Each theme is described within sub-sections of which titles are underlined. The occurrences of themes, shown in Table 19, for each MDT were very similar or identical (with one exception being that Curiosity as more prevalent in MDT1 (N=26) than MDT2 (N=16). Thus, a comparative approach was not valuable for the study of participants' engagement as a motivated activity. This is why the verbatims are quoted only with the pseudonym of the participants. *Curiosity* is presented first because it is a major generated theme that complemented the SDT related themes, and an essential contribution of the study.

**Table 19 Occurrences of postings per factor supporting motivation to engage and remain active in sample 1**

Generated themes	Occurrences (N)
Self-confidence in one's practice	32
Persistence towards attaining goals	46
Sprightliness	53
Inclusion	21
Ethos	13
Control	34
Accountability	35
Curiosity	42

### 6.2.2.1 Curiosity

The study shows curiosity as a major factor of participant's engagement as a motivated activity: it bolsters creativity and sustained attention. It is the third most salient theme in the data. In online contexts, the introduction of unexpected content and using curiosity-arousing postings have been suggested as positively influencing the engagement of participants (Harter, 1981; Hew & Cheung, 2008; A. Jones & Issroff, 2005; Keller, 2008; Schneider et al., 2013).

Also, curiosity is used by moderators as a *strategy* to rekindle interest in the conversation and prompt participants to post their reactions to the content. Such content increases motivation to come back to the platform

and “see what is new” but may come with a cost; this is evidenced in both MDTs as explained in the following sections. The findings concerning specific categories of curiosity that are most relevant to our research questions are presented below.

Posting surprising content appears to be a factor that supports engagement. In both MDTs, the posting of surprising content invariably provoked participants to react. In MDT1, the posting of a surprising music video of a pop band of five musicians (Walk off the Earth, 2012) playing one single guitar (Figure 26), stimulated the conversation effectively, prompting nine postings; the content was referred to throughout the conversation on co-operative learning (the last reference is in posting #49, evidencing the impact of the surprising content). The moderator posts:

These people are cooperating, or what? “Walk off the earth”  
[the link to the video is embedded] :D LOL! (Lucile).



**Figure 26 'Walk off the Earth', a video meant to represent ingredients of group work that follows cooperative learning principles and used to spark participants' curiosity.**

Participants, within hours, then engaged with the content. The punctuation and emoticons used demonstrate that the content is surprising and sparks interest:

Good one Lucile!!! Teamwork at its very best! (Emmitt)

A perfect example of group work, each member performing their role, taking turns and showing respect to other members of the group 😊” (Miriam).

Yes, especially the man on the right. I like expression of his face. He is not very active, but he does everything he is supposed to do right in time 😊 Nice video (Chaya).

I like most the man in the hat! (Frank)

After these first reactions, participants engage more deeply with the task, analyzing the aspect of cooperation:

Haha Lucille Yes it's wonderful when you can physically collaborate like that. 😊 But increasingly I think we're seeing collaboration having to happen also in the virtual space ... I'm hoping we'll cover some of those here, as well ... how we distribute collaboration face to face versus /in the virtual space, etc. (Doreen)

In MDT2, we observe something similar. The posting by one participant of Watzlavick's story on 'the Hammer' from his book 'The pursuit of unhappiness' (Watzlawick, 1993) triggered seven replies and was referred to until late into the conversation (the last reference is in posting #60) again manifesting the impact of the surprising content.

A man wants to hang a painting. He has nails, but no hammer. His neighbour does have one. Therefore, the man decides to go to him to borrow it. However, at that moment he begins to have doubts. Imagine that the neighbour does not want to lend me his hammer? Yesterday when he greeted me he also was a bit short. Maybe he was in a hurry. Or maybe he just pretended and he really has something against me. What then? I've never done anything to him; who does he think he is. If somebody would want to borrow my tools, I would lend them to him right away. Why wouldn't he? People like that guy make your life miserable. And I'm sure he imagines that I am dependent on him, just because he has a hammer. That does it! The man storms over to the neighbours door, rings the doorbell, but even before he has had a chance of saying "Good morning", the man yells at him, 'You can keep your hammer, you jerk!'. (Mose)



The many reactions and references to the story throughout the conversation, all linked the story directly to the central topic of the conversation, i.e., that communication skills are paramount to building trusting and peaceful environments best conducive to learning. The same observation can be made for the example of the video on co-operation that participants used to reflect on the ingredients of group work that follows cooperative learning principles. It is worth noting, in relation to research findings linking novelty and the posting of surprising content in online asynchronous discussions to the conversation going off-topic (Fahy et al., 2001; Schneider et al., 2013; Sun et al., 2014; Witte, 1983), that in both MDTs the posting of surprising content did not result in lowering topical persistence but contributed to illustrating the topic at hand. Curiosity is an important motivational factor for learning in our data: “Thanks for the Hammer Story, Mose! I find it hilarious since I witness similar ... situations in life very often. Sometimes I am the guy who needs a hammer.” and:

Thanks for the hammer story Mose. (...) listening to someone with no pre-agenda or with no expectations and assumptions (so-called mindful listening) is easier said than done. For me, it's extremely difficult, as a teacher or as in any other role. We tend to predict because perhaps we feel vulnerable not to do so ... I wonder if children are better at listening with no agenda.” (Darlena)

In both MDTs, the posting of strange or unexpected/surprising content proved to be a powerful motivator for participants to react and to link with their life at school as teachers and continues to be so even as the conversation has been going on *for some time*, which elicits second finding: reactions to surprising content can be also analyzed through the dynamics of the conversation, i.e., *the more reactions a posting gets the more further-reaction can be expected to occur*. This could be the result of several dynamics such as i) a ‘bandwagon effect’ (Hogg & Vaughan, 2008): in a perspective of social comparison, if participants see their peers react positively to a post, they may be more likely to pay attention to it and react positively to it; ii) the salience of a post is compounded by the technology: when a post is referred to several times, it appears in several responses and therefore it is *visually highlighted* many times for all participants. In this way, a “popular” posting will have a great impact on the content and direction of the conversation, and, consequently, on the motivation of participants to engage.

Content that captures participants' curiosity can do so either because it is a rupture in the conversation (unrelated to the topic or style of the discussion so far) or a resource that illustrates the topic of the discussion in a new, unexpected way. The two previous examples and the following third and fourth examples will help in determining more precisely what type of content sparks curiosity:

“[I asked] How can I improve my listening skills?” C'mon! There must be answers. Homework ;D : Here's a simple exercise that can get you started with your personal reflection: On a scale from 1 (weak) to 10 (strong) assess your listening skills. Be honest! Then observe yourself during the day whenever you find yourself in a situation where you have to listen. What other things are you doing while someone is trying to talk to you? What is going on in your head? How well do you manage to just be 'all ears', to listen without judging, without starting to formulate your response in your mind? Come back and share your experience.” (Charlotte)

Interestingly, this self-evaluation task, intended to spark participants' curiosity, did not contribute to increase engagement of participants and only one participant did the 'homework'. The task is in fact not surprising in the sense that it is material that teachers are used to encountering in the context of their professional development (self-reflection and assessment) in the PP. Also, it does not create the sort of cognitive dissonance that makes for good *hooks*. Nonetheless, it is disruptive in that it involves commitment to accomplish (time, self-reflection, difficult knowledge about the self possibly sparking a sense of inadequacy in comparison to others), and therefore it consists of a rupture in the conversation, in the form of a sudden change of style from informal to more formal. This warrants the interpretation that, although participants might engage in the task within a formal professional development setting, they may not be inclined to engage with such a difficult and demanding task, in the informal context of a conversational professional learning community such as the one that is the object of this research.

A second example can support this interpretation: the posting of a quick task, a light quiz: “Dear All! I have two quiz questions for you in the beginning of this year from the movement of the Hungarian students and teachers. (...) [Follows a description of the quiz] Was this activity cooperative or not? Happy new year! Boldog új évet kívánok! BÚÉK! Frank”.

This task on the other hand, prompted many responses and supported participants' curiosity, and therefore their engagement. Our analysis points to the issue of relevance of the task to the style and content of the conversation. The content will spark curiosity *and* engagement if it is firstly, relevant to the conversation's topic and its style, and secondly, if it is optimally challenging. That is, if it is spontaneous and thought provoking while at the same time easy to follow, fast and not requiring a significant amount of work to accomplish nor carry much risk. This task, compared to the previous, focuses on the self and carries a bigger challenge for self-esteem and competence. In other words, to spark curiosity is not enough; good hooks should better lie *within the boundaries of the habitus and norm* of the conversation, be *relevant* and be *optimally challenging*.

Expressions of expectative mood abound at the beginning of MDTs and are of paramount importance in shaping and *setting the stage for a conversation, specifically at its onset*. There are many postings about participants expecting to have an interesting conversation: "Hey (...) Looking forward to learning lots and lots more on CL ☺ Hugs, Charlotte."; "Thanks for this discussion, I'm also looking forward to it! ☺"; "Looking forward to hearing your impressions"; "It is always nice to see a new launched discussion. Thanks to Darlena. I guess this one will be rich as well". These multiple expressions of expectations, which are positive postings, can perhaps be seen as an encouragement or a *signifying prompt for the moderators and peers that a journey is starting*.

Unexpected feedback brings peers to unexpected areas of reflection, areas not yet explored and not considered conventional, nor necessarily linked to previous discussion. More will be said later about feedback and its importance. Here the focus is on types of feedback that prompt the group *to move the conversation into new spaces*. They *receive more and quicker responses* from the addressee(s) thus demonstrating the power of curiosity as a factor that enhances motivation of participants to engage explicitly in the conversation.

This can be about pushing a peer beyond the comfort zone: "Thanks for the good - and obstinate! ;) - inquiry." And "Thanks Lucile, I'm not worried, just trying to let myself be guided by my intuition and follow the path that makes my heart beat with excitement - even if that necessitates to leave the beaten tracks" (Charlotte); or making an unexpected link to another topic: "So I was also wondering if @Nicole, you can share with us why you (and Chaya) decided to start in the Ning platform a discussion thread on the Arts. ☺" (Doreen).

Surprise as a strategy is also used by moderators. The study shows that participants and moderators frequently post novel and unexpected content - under the form of new materials new questions to consider, prompts, etc. - and that after such actions there is an increase in engagement of participants in the conversation. Moderators play a central part in shaping the conversation (see section 6.1.3). In both MDTs different strategies occur for orienting the discussion ranging from posting stories, examples, resources, giving tasks and asking questions, for example:

Mysteries for learning (thanks Eloy for bringing that up) Geraldine, shared with us a blog and in the resources, I found this right on the dot for your topic of mysteries and investigative learning structures: [link to the video Dan Mayer @TEDxNYED, (2010)]. I think investigation lends itself beautifully to CL (this is not explained in the video unfortunately...). (Lucile).

As we have seen in RQ1, in MDT 1, if prompts are being brought in, many at a time and sometimes in the middle the posting, it renders them less salient and results in them not being taken up in the conversation. Moderation in which posting surprising content is abundant and random, produces different response patterns from participants. The study, therefore, reveals that *frequent random prompts* create participant fatigue, and end up being often ignored. Thus, *scarcity of use* and *patience* are important for enhancing engagement: the strategies are more efficient if the moderator uses curiosity-based strategies sparingly and waits for them to be tackled by participants before moving onto a next prompt.

In summary, the author concludes that *the addition of this component of 'Curiosity' to the Deci and Ryan model is well substantiated*. The theme is needed to account for the many postings that did not fall into the three themes corresponding to Deci and Ryan's model (i.e., relatedness, competence, and autonomy). *Curiosity is a generated theme that is important to understand the motivation of educators to engage in online learning contexts and specifically online conversational professional learning*.

#### 6.2.2.2 *Self-confidence in one's practice*

Members of the community show their ability to perform. Postings such as "Dear S. I think I'll try it out sometime soon to see how students react 😊" belong to this sub-theme because they point to participants' motivation to

carry on what they take from the conversation into their practice in the classroom. Relevance to their own practice is often pointed out. Postings relate ideas that are exchanged in the conversation to the practice of teaching: “(...) I will pilot the activity too (with the changes we find necessary here!) with students of the in V... Pedagogical Institute, in November 😊”. There is at times a ‘dual engagement’ when a participant engages with the content, first within the conversation, and next within their own context:

A couple hours ago I opened a forum for my 11th graders with this [hammer] story and asked them to share their impressions and what it is that the ‘hammer guy’ could have done. I will share some the results. (Darlena)

The tasks participants are invited to undertake often require them to confront their everyday practice to the concepts beings discussed in the conversation, participants take the opportunity to share what they think, feel, want, believe, and do as educators.

Online communication is great and has many advantages. For example, I use Google Docs to leave instant feedback on my students' essays, (...) This can be harder than it sounds sometimes because I often say to myself - oh, I wish I just see them one-on-one, and say it. (...) They may misunderstand my message or maybe get offended even though I never want to offend. (Darlena)

In this example the participant is expressing doubts on whether the communication guidelines being co-constructed in the conversation can be applied to her online communication with students. She is therefore making the conversation relevant to her own context and practice.

Expressions of expertise appear through postings that show a high level of specialization and experience:

It's important to ensure that the architecture of emerging virtual spaces 'materializes' the opportunity for collaboration... that those spaces transmit ideas openness, reciprocity, but also of privacy, accountability and even of asymmetric work relationships when these are required (coaching comes to mind). (Doreen)

Such postings are observed, inferring that participant may post such content to fulfill various goals, such as going deeper into the reflection and/or displaying for others their own expertise and thus *performing maintenance on one's reputation and status*:

I give training on communication skills for education and for industry. In education there is more goodwill to improve and less 'I know already'.... just my experience from 10 years of coaching leaders in education and industry. (Cathi)

Thus, stating one's expertise can also be a way of creating or reinforcing one's identity as an emerging leader on a topic and stating one's competence explicitly. Literature reviewed (C. M. Johnson, 2001 ; C. Jones & de Laat, 2016) points out the importance of 'emerging expertise' in a group engaged in online conversation. Being able to rely on others' expertise within the group, may serve to *facilitate learners' needs to feel proficient*.

In this next example, the moderator receives a complex, expert, and theoretical, reply to a self-reflective question:

I like Bahtyin's view about communication, which says that there are no such things as message, sender and receiver as "Ding an sich". These are constructed and continuously formed by the actions of communication. For example, I exist for you just in these sentences and differently from person to person who has read and understood them differently. Best wishes, F. (Frank)

These postings require attention and reflection on behalf of the participants who by responding would show their willingness to contribute to the conversation at a deeper level. They also exemplify how knowledge is co-constructed with the community: it is not about everyone contributing to one agreed-upon piece of knowledge – neither is this the stated goal of the conversation - but rather about *each individual participant constructing a system of ideas for him/herself, a personal 'ideological becoming'* (Bakhtin, 2010; Lee & Brett, 2015).

In RQ1 (section 6.1.1.3), the study showed that some participants get more responses from peers than others and more postings are addressed to them than they themselves address to others. In this case, attention gotten may be an instance of *recognition of emergent leadership*.

I like the intelligence of some participants and if I see they have posted somewhere, I always go to read what they have posted because it means it will be something interesting. Or, when I chose people to promote, I chose them on my personal likes and dislikes. Of course, if somebody asks for help I never say “no no I don’t like you I don’t help you” but of course I support more those people whom I like. It’s not personal liking, maybe it’s professional liking also, based on something professional ... There is something, some bond that is professional or something, also personal (Chaya, focus group, 15 May 2017)

This participant is expressing that particular members have status, and that *power and status in not equally shared in the community*: reputation exerts a specific push and pull that has an impact on the interactions and group dynamics. Participants will tend to focus more on the postings of those whom they perceive as having competence, expertise, and keen reflective contributions.

The method used for the measure of cohesion (see section 5.3.1) allowed to observe that ‘expert’ type postings receive fewer responses than postings with ‘easier’, or ‘lighter’ content, and when they do elicit response, it is mainly from the most engaged participants. Thus, the finding confirms the results from the *Curiosity* analysis (section 6.2.2.1) and the *Level of cognitive processing in relation to participants’ roles* (section 6.1.2.2).

Self-efficacy and a sense of agency, although different concepts, are both considered as having influenced understandings around key mindsets, such as that of optimism and realism. Bandura (2008) argues that self-efficacy may serve to accommodate within adverse environmental influences, enabling subjects to have fulfilling experiences despite external and internal unfavorable conditions. This is especially interesting in the PP since educators may make plans, forge professional identities and values for democracy that then would help them deal with adverse conditions in their schools, or higher education institutions, when these offer less than democratic environments.

Thus, the ability to rely on others’ support and expertise within the OPLC, serves to *facilitate* participants’ sense of self-efficacy and sense of agency (Nonaka, 1994, p. 98). Both are manifest in the postings in which participants are prompted to highlight their ability to ‘see themselves’ – perspective-taking - and to express their *intentions*, for example to deploy attitudes and behavior that support a democratic and inclusive learning

environment: "Many times students (children and teenagers) understand better what teachers want to communicate by their behavior than by a discourse" (Barbara). In such occurrences, this may lead to explicitly and authoritatively regulate the conversation:

... A teacher cannot not know! I kept a dictionary in my classroom, and every time I had a doubt, I checked in front of the students. If the dictionary was not enough, I would simply say: "I don't know. I'll tell you tomorrow after searching" ... This spontaneous decision had two positive consequences: first, it gave us the possibility to teach and learn in a very relaxed way. If the teacher has the right to say he/she does not to know, then the student has that same right, and they become all part of the same community of learners ... Secondly, it conveyed me another type of authority, based on authenticity and truth more than on "power". I was worth being listened to because I was talking truly to my students, and also because I was not "judging" them - as persons - when they did not know ... So maybe communication might also depend on some expectations or representations that we need to discuss? (Annetta)

Thus, participants show self-confidence in their own practice not only when they tell about their competent action for nurturing democratic learning environments in their classroom, but as well within the OPLC when they chose to regulate the conversation to encourage peers to be more perceptive and think deeper and also to include ethos and values into the reflection (see also section 6.2.2.6).

Questioning one's own practice is a way for participants to demonstrate cognitive and meta-cognitive ability and to engage in decentering, expressing how they perceive themselves, often in first person voice, in action. 3 types of postings can be distinguished:

1. *personal positioning*, when participants explain how they are forming an opinion for themselves,

@ Lucile. Very interesting video on the OER (Open Educational Resources): (...) Unfortunately, so far the OER are almost exclusively creations of major institutions [such as] universities (...) The advantage is that they ensure the quality of products;



the disadvantage is that the contribution of the learner is not always possible. (Natasha)

Natasha is nuanced, yet critical of online pedagogies that leave little space for student participation. Darlena questions physical behaviors that convey strong, implicit, messages in the classroom:

“Verbal output, facial expression, body language but also e.g. how we dress and how we arrange the environment/classroom we work in.” - I would also like to add the teacher's position, I mean is s/he standing in front of the students, sitting, moving around, standing in the back, sitting on a desk with students, playing with students, etc. or a mixture of these.

2. *perspective-taking* and seeing oneself critically in action: the environment is conducive to enough trust that participants and moderators can express their shortcomings, as in the following two examples:

“I've seen many trainers, including myself, have groups make posters and then move on without ever using the results during the rest of the session or the following sessions”.  
(Lucile)

I just used one in my previous sentence. I learned it from (Charlotte) during the summer school. I could have used "but" instead of "and" AND I chose 'and' because when I use "but" it kind of negates the mentioned statement or makes it look insignificant maybe. I use it with my students (most of the time, when I remember, sometimes I correct myself and start over). (Darlena)

Generative questions are also used as a means for perspective-taking and self-assessment,

How well do you manage to just be 'all ears', to listen without judging, without starting to formulate your response in your mind? In this I'm very very – extremely bad! Almost always I keep not exactly formulating my response, but making a

settlement in my mind on what I hear and I'm afraid that while making this settlement I'll lose parts of the hearing. (Nohemi)

or rebound on a task proposed by the moderator to question their practice and engage in self-reflection:

I also like (...) Charlotte's self-test, which results for me I'm placing here: What other things are you doing while someone is trying to talk to you? Colleague talking to me => Very often, I keep thinking of the work I was doing before and at the same time keep hearing and answering him/her. Student talking to me => I stop what I'm doing and approach his/her desk. (Nohemi)

3. *analyzing* what is happening inside the online interaction as it is unfolding, resulting in meta-cognitive activity. For example, Olivia notices that the conversation has slowed and that there is a silence. She posts about the progression of the overt participation, after the discussion goes silent for one day: "Being conscious of your silences give others and yourself the opportunity for reflection".

These categories reflect maturity in the way participants take part in the conversation since, whilst they are taking part, they are simultaneously exploring a topic, analyzing their thought-processes *and* sharing these with the group. These activities evidence depth of engagement and willingness to be critical about one's practices in education and they entail *showing vulnerability in public, which requires enough trust in the community and in one's own self-confidence to be able to put oneself under the scrutiny of peers*, one aspect of risk-taking behavior. This is an essential factor of learning considering that it requires readiness and capacity to suffer possible harm to one's self-esteem.

### 6.2.2.3 *Persistence towards attaining goals*

Persistence is the second most salient theme in the data. It is meant here as the continued determination to reach a goal or finish a task. It includes aspects such as determination, tenacity, and resilience and is found in the conversation in participants' persistence in the interaction, and by the level to which topics are pursued:

Dear Charlotte, thank you for answering my question about "external skills" and empathy ... I am thinking now and I am not sure that empathy could not be taught. ... if empathy cannot be taught and at the same time is necessary for ConsciCom [conscious communication] we are saying that there are people whose nature gave them the possibility to develop Conscicom and there are other people who cannot. Sad. Let's think about how to develop empathy...Ideas? (Olivia)

Accepting effort, deferred gratification, persisting towards developing common understandings, giving feedback, going deeper, challenge; appreciation of outcomes, compose the ensemble of coding for this theme.

Feedback, going deeper and challenge are widespread activities. In the OPLC, no postings are ignored and all get some type of feedback; thus, the conversation is supported continuously through *presence* (Anderson, Rourke, Garrison, & Archer, 2001; deNoyelles et al., 2014; Rourke et al., 1999). By giving advice or encouragement, "Dear Freyja, happy to hear it is being used 😊" (Eloy), offering deeper analysis, "Dear Barbara, Thank you for your question. I believe that we need a new perspective on our emotions. Let me share some yogic wisdom..." (Charlotte) and relating to one's own experience "Nicole, Thanks for the pictures! If I had been given clay to create the molecules, I might not have dropped out of med school!" (Lucile), or even merely acknowledging a post without offering much content "Great question Daniel, thanks! I will reflect on them", *peers and moderators support each other's need for competence*.

Educators display strategies for giving feedback that mirror presences in order to support an effective online collaboration: i) *social presence*, participants are able to project themselves socially and emotionally (Rourke et al., 1999), "Dear C., thank you for answering my question ... I like your way of summarizing my thoughts. Thank you"; ii) *cognitive presence* or the extent to which the participants are able to construct meaning through sustained communication (Garrison & Akyol, 2013; Gunawardena & Zittle, 1997), "Hi to all 😊 some thoughts on the subject: I agree with Mose's words (...) through communication we are consisting and constructing ourselves. For that we need observation without evaluation/ assessment/ estimating (for your list "(...)." (Ivana); iii) *teaching presence*, facilitation of cognitive and social processes is offered for the purpose of realizing personally meaningful learning outcomes, is demonstrated through moderator and peer interventions: "How we can provide encouraging and constructive interdependence among the participants?" (Frank), sometimes critically

questioning participant's choices: "Barbara and Ivana, do you mean that a 'flash mob' structure possesses all the 4 [Cooperative Learning] principles?" (Lucile).

Many of the examples above show how *feedback* pulls into the conversation the need for challenge, which is cited by many authors (Keller, 1987, 2008; Preece, Feng, & Lazar, 2004; A. Jones & Issroff, 2005; Schellens, Van Keer, & Valcke, 2005; Zhu, 2006; Hadwin et al., 2011; Mäkitalo et al., 2002; Järvelä & Hadwin, 2013; Järvelä & Renninger, 2014) and is seen as a supportive factor of motivation (Azevedo, Johnson, Chauncey, & Burkett, 2010; Järvelä & Renninger, 2014). Pursuing a topic further, going into more depth by posing questions that offer optimal challenge, not too stimulating nor too simple, whilst not overwhelming the targeted participant, elicits direct responses, as well as avoidance or promises to engage at a later date when more reflection has occurred, "Dear A., (...) I will have to contemplate a bit before I can answer your questions and maybe somebody else has answers?"

Acceptance of effort, deferred gratification is demonstrated when participants display significant persistence, putting much effort and time in reviewing their peers' work and appreciation of outcome of the collaboration.

Dear Doreen, here are some thoughts on co-operative learning and social media. I used your materials and a table that Frank. shared with us ... I just started playing around with it to see if this kind of support for reflection works. It's nothing accomplished... Best, .... (Lucile)

Effort includes reading and commenting messages and documents, researching, and evaluating resources. The author evaluates that some of these contributions demanded more than one hour for the participants to contribute to the conversation, "Dear P., here is my feedback for you ☺. Best wishes, C." [the post highlights a document in which detailed comments are added to a first proposal document submitted earlier that day]. These postings were coded as deferred gratification because there is no element of urgent need in the conversation; feedback is requested and offered for *possible later use*. In one instance, the document has been, commented, reviewed, and amended so many times, by so many participants, that in the end no-one can say to whom the content can be attributed:

Hi dear cooperative learners, Pestalozzi is full of surprises!  
Today Emmitt tells me that this is not his activity! hahaha :-D  
This activity is anonymous! Does anyone claim authorship?  
Maybe it's been edited so much that it's no longer recognizable  
by anyone;) (Lucile)

The example demonstrates how participants and moderators may engage in such peer reviews with the aim of learning through collaboration and co-construction itself, notwithstanding interest in the final product: the expected outcome of participants' engagement in this case is the learning process rather than any specific output. This corresponds to the type of open-ended dialogue evoked by Bakhtin (1986), and again point to participants engaged in thought and conversation *not to persuade others, but rather to "become inside themselves"*.

Coming to a common understanding and meaning making can require persistence. In the following dialogue, the activity of coming to an understanding about the meaning of a training activity requires Lucile to relate the activity to Velina's moral and ethical bearing:

Hi Lucile, Thanks for sharing this activity with us. I find it very interesting and I like also the structure of it. Just a quick question: what was the purpose of using words such as iPad, smart board, and flat screen? Velina.

Hi Velina, important point you target here. These iPads and groovy electronics, the nice clothes, the big house... serve as a symbol of how much we value possessions and material things as well as how we use exterior signs of financial wealth! What's more important for you? For example, if you had to choose between good teamwork with your colleagues and your iPad? What would you choose? Lucile.

Hi Lucile, Interesting question ☺ For me the answer is clear: although I like my iPad, my choice is always the people; I would choose the good team work rather than a material possession. (...) Can an iPad give you a warm smile that can make your day? Or can you see the other's sparkling eyes with a meaningful look/contact in your iPad?! What would life be if we couldn't share it? Best wishes Velina.

This sequence also shows how Lucile's choice to personalize her response 'What would you chose?' prompted Velina to not only understand the first meaning of the sequence (object of her initial question) but also to extend her thought by relating this found meaning further into her personal perspective and values: 'What would life be if we could not share it?'

#### 6.2.2.4 *Sprightliness*

'Sprightliness' is the most salient theme. It defines content that indicates members of the community showing playfulness and friendliness and refers to affective expressions within interpersonal relationships; postings such as: "Hello to you all! I'm really glad to join this thread (thank you L. for the invitation)!", or express enthusiasm "Thank you friends! This is a great discussion!" and "Dear All, I see how enriched this discussion is! Like it!" belong to this theme.

Emoticons and smiles, thankfulness, kind words, concern for peers abound: "@F., you were fast and deep: sharp and inspiring. Thank you for your support." Rourke et al. (1999) reported that Hara, Bonk & Angeli, (1998) when conducting content analysis of an online course, found that 27% of the total message content consisted of expressions of feeling, self-introductions, jokes, compliments, greetings, and closures. In this study the proportion the same if one considers *Sprightliness* 19% and *Inclusion* 8% as themes that relate to sociability (see Table 19, section 6.2.2), thus demonstrating the importance of social cues, and the need for relatedness, especially in a setting that requires difficult conversations such as in the Pestalozzi OPLC.

To truly understand what is happening in the interactions, further categorization was done. Key categories for this theme are enthusiasm, gratitude, compliments, humor and joyful responses, expression of affinity, connection, caring atmosphere, trust, and warmth. These postings are important to the conversation because they set what Preece (2000) has pointed out as a *sociability* issue linking how participants may sense emotion and intimacy, what Gunawardena and Zittle (1997) named *social presence* addressing how media conveys a sense of participants being 'physically' present and what Dettori et al. (2006) dubbed *community mood* or how few participants can shape the whole atmosphere of the community (community mood is not the sum of the moods of individual participants and therefore cannot be studied through surveys or interviews but inferred from the conversation) (Dettori, Giannetti, & Persico, 2006; Preece, 2006;

Rourke et al., 2001b). The following paragraphs present some of the findings concerning specific categories of this theme.

Gratitude for participants' contributions to the conversation is expressed (and satisfied) through many postings. In a context in which participants engage and give their time and attention on a voluntary basis the expression of thankfulness is noteworthy. The expression 'thank you' appears 20 times in MDT1 and 58 times in MDT2: "I want also to express my gratitude to @Mose who posted it on Facebook to remind all of us about the relevance of reading!", "Many thanks, Lucile. and everyone for the nice idea of resources sharing. Thank you Barbara and Ivana for wonderful films you offered. Here's something I've got", "Dear Agostinho, thank you for the nice video! I think it really appeals to students 😊", "Dear Mose. and Barbara, Thank you for sharing your ideas", "[Posting of an image that says: "Thank you"] for your contributions... and your patience 😊": "Thank you Ivana, for adding to my list". "Hi everybody! 😊 Thank you so much for being awesomely active on this thread and contributing", "Thank you for sharing your thoughts and ... your silences", "@Nohemi ... thank you so much for sharing your results and this fun video!".

The reward for posting, other than engaging oneself in reflection and co-construction, is getting response, validation, interest, and recognition from peers. Sometimes relatedness is expressed through actions that downplay a nascent conflict. In MDT2, in which conflict arises, it may be that the more frequent repetition of expressions of thankfulness addresses a different goal than the expression of gratitude: participants may in these instances aim to disagree while staying polite and friendly. Thus, *deflection of tension* can be attained through regular expression of thankfulness even and perhaps especially in the case of grit or conflict in the conversation, when participants display perseverance in a line of thought while disagreeing with their peer(s) or the moderator. The thankful expression here could serve to agree to disagree - while staying agreeable and open to others' positions. Such participants' behavior (e.g. using expression of politeness as a device to deflect conflict) also serves to *'model' the stated ethos of the community, a community* in which democratic culture is defined amongst other things as the protection of a safe learning space where disagreement is explicitly welcomed: "I like this thread very much because I can see how different we all are and I love it!" and where participants should long for congeniality and continue to be open to others even in the face of conflict and controversy. On the other hand, the author also investigates the extent to which the community may implicitly smother or discourage disagreements through peer pressure to conform to the norm, dominant opinion, or

position. Research in social psychology and ethnography applied to online settings have shown that online community members who feel identity-based attachment to a community will be more likely to conform to group norms than those who feel other types of attachment to the community (Kozinets, 2010; Ren et al., 2007). Types of attachment are analyzed further in section 6.2.2.5, *Inclusion*.

Giving compliments was revealed as a means to express relatedness, but not only. When participants praise each other, they recognize the value that a member brings to the community by engaging in the conversation: “Dear Ivana, Thank you so much for your visual and inspiring comment about empathy. It is a great contribution to our thread on communication” (Olivia), “Dear Darlene, Thank you very much for your contribution. You're doing a great job there. Keep up!” (Charlotte), “Dear Olivia, yes, good thinking on silence.” (Charlotte)

One form of complimenting is the act of responding itself. In this study, the author does not look at ‘who is complimenting who’ and therefore there is little detailed information about the role complimenting may have not only in expressing relatedness but also in establishing *reputation* (Baran, 2010) and *power* positions of certain members. Nevertheless, such a type of engagement represents an interesting *dimension of power*. Complimenting can therefore also be a form of *alignment*: a way to identify with the actions of peers and confirm or support social status in the community.

Humor is an important part of ‘member voice’. It is present in both MDTs and some participants use it in most of their postings. As shown by deNoyelles (2001), being perceived as “real” people in mediated communication, supporting group cohesion and emotional expression (e.g., humor) gives the ability to participants in online settings to project themselves socially and emotionally.

In both MDTs, humor is important as it can maintain interest, produce a safe atmosphere, and also allow critical expression while avoiding threat, as this example demonstrates:

“Mose, I’m not sure I understand it the way you mean it but it does make sense to me what you say ;D” (Charlotte).

Different types of humor can be noted in both MDTs, such as:



- a. *jokes*: “Dear all, ... Enjoy your Tuesday, it will never come back!” (Lucile), “Eloy, could you explain to me, please, what is "mystery stories"? It’s about stories about vampires and ghosts? ☺” (Chaya).
- b. *self-deprecation*: “I am very intensive. I need a break, maybe you too?!! LOL. Take care, Olivia.” and “@Ivana, I laughed with that clip, but I’m not sure that that is what I was supposed to do!” (Lucile).
- c. iii) *exaggeration*: “Who knows? I go for a second cup of coffee. Please say something or I will die alone with my neurons here ;)” (Olivia).
- d. iv) *unconventional storytelling*:

... in school when I was preparing myself for the exam to become a teacher in Germany. It was about giving back exams to students with red marks... there was a trial in which it was decided that the teacher had contributed to a student's depression because he/she marked his/her exams with red by correcting. Recommendation of the magistrate: marks in green. (Olivia).

As in the example of unconventional storytelling above, humor can be a way for participants to share simultaneously some information that renders them more personable, while also bringing topical content to the table. In another such example, this participant uses humor to offer a critical analysis of an artifact that is being promoted in the conversation: while participants are saying how important Non-Violent Communication (NVC) is in teacher practice, one member states with humor an aspect that puts the effectiveness of NVC into question:

Sometimes newcomers to the skill of listening can get carried away ... Having learned to project appropriate facial expressions while listening, they'll look as if they're suffering gastric distress” (Mose).

In this final example, this participant finds a humorous way to be critical toward ideas that are being shared by peers engaged in the conversation who are speaking about “what to do with shy and quiet students”:

I have never met quiet students but I can imagine schools where I would have nothing to say all day! (Frank).

### 6.2.2.5 Inclusion

In both MDTs, there were no instances of postings left without acknowledgement by peers or moderators, albeit at times merely thanking the participants for engaging overtly in the conversation. This evidences a community that presents itself with a strong intention to be inclusive. The author points here to the creation of a community *microculture of inclusion* as a means to grow the OPLC's democratic culture. The theme defines content that shows members of the community demonstrating a disposition to support participants' motivation to engage through a series of actions corresponding to the following categories: welcoming peers, making sure no one is ignored, nurturing a safe learning environment, a caring atmosphere and sense of belonging, building trust, and companionship, demonstrating empathy. Findings concerning the main categories are presented here.

Welcoming peers is an important activity for motivation to engage, done by moderators and peers alike. Moderators, acting as 'hosts' make sure newcomers are welcomed to a discussion thread and to the wider conversation. At any time in the conversation any of the members of the community can 'drop in'.

“Welcome to our discussion Cathi, thank you for adding your perspective. There is hope after all.” (Charlotte).

The message given is that no one is ignored, everyone is welcome, “Hello to you all! I'm really glad to join this thread (thank you Y. for the invitation)!”, “Hi V.! So nice to reconnect ☺ I miss your smile and your enthusiasm... Glad that you are doing well and always active ☺” (Lucile). The good management of the welcoming function is cited in many studies as a crucial activity to maintain engagement and supporting the community-life (Garrison & Akyol, 2013; Gunawardena & Zittle, 1997; A. Jones & Issroff, 2005; Ren et al., 2007; Rourke et al., 1999). These [welcoming] practices help protect newcomers from being intimidated or discouraged by their unfamiliarity with the space, its people (Honeycutt, 2006; Ren et al., 2007) and culture. They make the social nature of the community evident, *revitalize the community's lifecycle*, and at the same time may help minimize *potentially negative effects that newcomers' arrival may have on community cohesion*.

Sense of belonging is strong as evidenced by postings referring to the community's background and context, i.e., it is an emanation of the Council

of Europe Pestalozzi Programme, with its members often identifying with the community:

a. as a *supporter*:

And I'm also a Pestalozzi fan that likes to motivate students to use their heads, hands and hearts ['head, hart, hands' is the 'motto' of the program using Johann Pestalozzi's expression for holistic education, addressing the whole learner; see sections 2.5 and 4.5]" (Nicole),

b. as an *ambassador*:

"Dear A. and D., I like this activity very much! I will try (it) during my workshop in Vienna as a dedicated Pestalozzi Programme facilitator in a Porajmos/Holocaust conference!" (Frank),

c. as *change agent* (or a member of a 'tribe' expressed by the choice of the term '*my*') who gets into a daring disposition to change:

"... that necessitates to leave the beaten tracks - For that, one needs courage and that's why I do yoga and stay in contact with my Pestalozzi community ; ) Charlotte."

Outside of our data set, in other areas of the platform, but interesting to mention here, is the way in which participants refer to each other as 'Pestalozzos' and 'Pestalozzas'. All the evidence above supports the finding that participants experience *identity-based* as well as *bond-based attachment* to this community, that is attachment to the group as well as to individual members of the community (Ren et al., 2012; Schneider et al., 2013). Referring to peers with fondness can also be considered as evidence of a sense of belonging. For example:

"Dear Lucile, I have learnt to be obstinate to the aspect of the participants' demands and needs beyond my own experiences, and my attitudes, from YOU! So it is you who have to be blamed for it ☺! ... So let us be obstinate to this issue and let's see who can help us with her/his proposal! Best wishes, F" (Frank).

In belonging, there is potential for learning and identity (Wenger, 1998); more so in a community that is a value-based and ethos-centered space. The author will analyze the issue further in the next section 6.2.2.6 describing the findings for the theme '*Ethos*'.

#### 6.2.2.6 *Ethos*

The content that falls into this theme is value-based content. It expresses itself in the data through the content of the postings as well as the attitudes and behaviors displayed in the interpersonal interactions that are examined. Although the theme is not highly prevalent in the data, it is important since participants who engage in the conversation at the level of values are engaging with deeper content. Key categories are: value-based content, sense of common purpose, collective efficacy; responsibility for the commons, congruence; sense of belonging through sharing common values, respect, pro-sharing norm, reciprocity. The major categories that compose this theme are presented in the following sections.

Sense of common purpose in the community is evidenced when its members engage to transform their teaching practices and strive for more humane and democratic ones. This value-base constitutes the foundation of the purpose of education for the community; it is displayed throughout and permeates the conversation and is construed through the adoption of the values promoted by the Council of Europe: democracy, citizenship, human rights, intercultural dialogue, social inclusion and participation. For example, in this posting from MDT1, Frank is involved in explaining the importance of questioning the cooperative structures teachers put in place, by placing specific scrutiny on what they provide to learners in terms of inclusiveness and access to learning:

How we can provide personally inclusive parallel interaction during the presentation process ... to give the possibility to the listeners to be involved in [the] presentation in a personally and equally interactive way? (Frank)

In the next example, Lucille is trying to prompt a peer to distinguish between congruent communication (Rogers, 1961) and possible manipulation:

Dear Barbara, I like your idea of using inquiry as a way to stimulate active listening. It's not easy. Giving pointless feedback or questions that make the answer obvious is an

error that often happens in these occasions [followed by an upload of document presenting humorous caricatures of different types and styles of teachers/trainers]. (Lucile)

The implicit focus is the topic of congruence or 'realness in the facilitator of learning' (Rogers, 1961, 1969). The common purpose here is to develop awareness of practices and a disposition to question them with regard to their implications for inclusion and democratic culture in the classroom. The conversation creates a space for *individual self-actualization* when a teacher's *'ideal self'* is congruent with her/his actual attitudes and behavior, in other words whether he or she is a living contradiction (defined in section 2.6.1), or actually someone able to live and embody her/his values (Mc Niff & Whitehead, 2006, 2010):

In this final example, from MDT2, Olivia tells the story of a 'disruptive student'. She then writes how she can manage the situation while honoring and abiding by her values:

What is going [on] in the other person? A kind of "divine energy" ... is helping me to listen to all signs (not only words) with my whole entity and not only pretending to listen with techniques I have learnt ... avoiding alienation through moralistic judgments, avoiding punishments, avoiding thinking that the responsibility (the guilt) is not mine, avoiding comparing persons who are individuals not objects of study, etc. (maybe you can add more items). And then, not to forget that I want a fairer society, I work for social justice and equality. Waw! I have a great job. Nice! (Olivia)

Compared to the previous, that relates to how the community embodies values *implicitly*, in the next example, Nicole expressed the program's values *explicitly* through the idea of common purpose, reciprocity and collective efficacy:

I strongly believe that by encouraging social innovation and creativity within the Pestalozzi community and the school system we can move on, make changes and infect others. It helps us to use different tools for action, to motivate diverse learners, to approach the multiplicity: to see and observe things differently, to move on and develop further. All the best, Nicole.

Finally, the frequent *shift from the 'I' – to 'we'*, from the individual position to the collective voice is reference to the *community as container of common intention*. The shift from 'I strongly believe' to 'we can (...) make changes and infect others', further indicates *common purpose* and *collective efficacy* – instances in which groups of individuals share the belief that they can “solve the problems they face and improve their lives through unified effort” (Bandura, 1994, p. 8).

Responsibility for the commons (Hess & Ostrom, 2011) is revealed in the data (the content) and the meta-data (the patterns of timings of interaction in the conversation, Table 11, section 6.1.1.2). Along with the above stated values, commitment to the '*knowledge commons*' (Honeycutt, 2006; Ren et al., 2007) and reciprocity is salient, through:

- a. a sense of responsibility towards the community, respect, pro-sharing norm,

Dear Lucile, I like your materials (CL session plan, socmed+CL) very much but can feedback later! Anyway it is a great idea to compile the two tables in one, congrats! (Frank)

- b. giving/receiving, the need and/or goal to act upon values is not only demonstrated in participants' discourse, but in actions

Thank you, Charlotte!! Here are my comments to your feedback. Enjoy your weekend everyone! Lucile

- c. the general attitudes and behaviors displayed by participants (feedback, creating tools, combining knowledge into new tools) that lead us to infer this particular motivational aspect.

*These pro-sharing norms* and commitment to the commons are revealed as well in the meta-data, such as the patterns of interaction - with postings submitted late at night, on weekends - and the *intensity* of the interaction. Below are two examples of such meta-data revealing a sense of commitment and responsibility towards the community:

- d. Timing of postings: participants are all professionals, working full time - at times moonlighting (holding several jobs to make ends meet, as many teachers are pushed to do) - and therefore it is interesting to observe timings. In table 20, some of these extreme timings of postings are listed (e.g., late at night, even on Sundays; often on weekends, etc.) that point to infer *commitment* and *sense*

*of responsibility* to contribute to ‘the commons’. Full information on the time of postings was provided in Table 11, (section 6.1.1.2).

**Table 20 Timing of postings: extreme timing attests of participants’ commitment towards the community and their sense of responsibility for the commons**

MDT	Time of posting	Weekend postings	
		Saturday	Sunday
MDT1	Reply by ... on October 15, 2012 at <b>22:21</b>		
	Reply by ... on October 15, 2012 at <b>22:51</b>		
	Reply by ... on October 15, 2012 at <b>23:41</b>		
	Reply by ... on October 16, 2012 at <b>0:03</b>		
	Reply by ... on October 16, 2012 at <b>23:04</b>		
	Reply by ... on October 30, 2012 at <b>5:58</b>		
	Reply by ... on November 4, 2012 at <b>23:13</b>		
	Reply by ... on November 5, 2012 at <b>7:15</b>		
	Reply by ... on November 11, 2012 at <b>7:36</b>		x
	Reply by ... on November 14, 2012 at <b>22:13</b>		
MDT2	Reply by ... on November 2, 2013 at <b>0:17</b>	x	
	Reply by ... on November 2, 2013 at <b>23:27</b>	x	
	Reply by ... on November 3, 2013 at <b>0:17</b>		x
	Reply by ... on November 3, 2013 at <b>1:17</b>		x
	Reply by ... on November 3, 2013 at <b>22:34</b>		x
	Reply by ... on November 3, 2013 at <b>23:43</b>		x
	Reply by ... on November 4, 2013 at <b>1:50</b>		

- e. The intensity of the interaction: Intensity, and the responsiveness and attentiveness of participants to each other, implies the participants are actually engaged, rather than merely dutiful and thus denotes involvement and measures dedication and persistence (Ridley & Avery, 1979).

The level of attentiveness and responsiveness is high, and furthermore, such sense of responsibility, commitment and pro-sharing norm is at times expressed explicitly in the postings:

Dear Frank, Thank you for your interest in our plan for the parent-teacher meeting which you will find attached here. If you have ideas as to how it can be improved, feel free to suggest changes. Looking very much forward to hearing from you, best wishes, Best wishes. (Charlotte)

A certain selflessness can be expressed as an extension of the responsibility to support others. This moderator, in a focus group discussion, is expressing an ethos in which helping others and selflessness is central:

In the beginning I felt happy on the platform when I was doing something myself, my name was visible, and it was clear for me that I did something. But now, after all these years, it has turned upside down and I feel most pleasure ... when I can promote other people and encourage them to engage while I am staying completely invisible (Chaya, focus group transcript, 15 May 2017).

#### 6.2.2.7 *Control*

Control refers to content in which participants show regulative action to orient the conversation on towards their personal goals. Coding for *control* called on the researchers' breadth of knowledge of the participants' patterns of participation. It required interpreting the discourse in fine enough ways to catch nuance. Thus, autonomy supportive themes were observed not only through obvious content of the data (words expressed) but also the meta data: how, and when that content occurred. For this reason, the author uses a system to point out meta data, by underlining specific expressions that relate the content to the theme of control.

Key categories for this theme are: access to participation on one's own terms (and orienting the conversation); personal goals; choice, freedom, regulation, (initiative, spontaneity, risk-taking) and ownership of their personal and professional development. The theme is therefore linked to the notion of *power* and *empowerment*, as participants negotiate ways to orient the conversation towards specific goals.



Access to participation on one's own terms is evidenced when participants intervene to regulate the conversation by steering it back to their personal interest and goals. For example, this participant might seem to engage in similar activity to others, "Hi all, (...) I've tried integrating different activities (...) into my daily lessons. For example, I used my AIE [Autobiography of Intercultural Encounters] activity, debates, and shape cutting to promote the idea of empathy and put it into practice step by step." However, i) the resource she is referring to is 'off topic' and not specifically linked to the topic of the MDT which is cooperative learning ii) she has never posted in any discussion thread prior to this posting. The author therefore infers that she could be attempting to reorient the conversation towards her personal goals, and namely promoting her work on intercultural education. The moderators welcomed her intervention just as well, trying to link her posting with the topic of the conversation:

"Hi Freyja.! So nice to reconnect :) I miss your smile and your enthusiasm... Glad that you are doing well and always active :) (...). Can you share the shape cutting activity with us here? Big hugs, Lucile." (Lucile).

This participant has just become, through this posting, a member of the community's overt company. Before that she was part of its covert company. Thus, one could say that she has just 'de-lurked' (Rafaeli et al., 2004; Ren et al., 2007; Schneider et al., 2013; Sun et al., 2014) to use the term employed by author who define lurkers as "one of the 'silent majorities' in an electronic forum, ... who posts occasionally or not at all but is known to read the group's postings regularly" (Sun et al., 2014, p. 111). Covert company is part of legitimate peripheral participation (Wenger, 1998), for example, when they are spreading and promoting community artefacts to the outer world, such as what exactly this participant is expressing in her posting (see sections 2.2.1 and 6.1.1.1).

Otherwise, regulation becomes obvious when there is an *intervention* that interrupts a current task or *disturbance of a line of conversation* that is unfurling. This type of regulation and co-regulation (regulation that integrates individual and collective action), or socially shared regulation (Hadwin et al., 2011; Järvelä, Kirschner, et al., 2016; Järvelä, Malmberg, et al., 2016; Rogat & Linnenbrink-Garcia 2011; Panadero & Järvelä, 2015) has an important impact on the level of 'cohesion' (Gunawardena & Zittle, 1997; Strijbos et al., 2004) of the interaction since such postings fail to respond to peer interactions and, by steering the conversation away from

its current object, may impede the deepening of the dialogue, or in some cases the co-construction of knowledge. This is shown when participants' postings change the topic or post content that effectively steers to conversation in a given direction: "What about teamwork cooperation in *this* experience?", "Hi - I like this kind of cooperation in action ☺" [both the above are instances of posting new material, departing from the current topic or task].

As noted above, topical persistence is high in both MDTs. Moderators' interventions and participants persistence in developing a collective train of thought contribute to the continuance of the focus and the depth of co-construction. In this section, the author's focus is on postings that go off-topic, or that reveal singular interventions that change the course of the conversation. Such as in this example, the participant is bringing in a new topic, unrelated to the one at hand:

"Just something to add to your discussion - I use elements of puzzles and mysteries (...). Unquestionable increase of the motivation is when you ask students to try to get to the answer by using just closed questions (...) ☺".

Signs that participants intervene to regulate the conversation may be subtle. For example, they may employ *sentence starters* that point toward a happenstance relation to the conversation: "Just something to add to your discussion (...)", "What about this?", "Our conversation today reminds me of (...)", as seen in the following examples in which the sentence starters have been italicized:

"Love Charlotte's story about the outfits and hairdressers. *It reminds me of* one day at school last year (...) I went to school in jeans and crocs. Now, I didn't usually have discipline problems in that classroom but that day was the worst day of teaching in that class - I was very angry and unhappy! The students wouldn't listen to me, they were reluctant to do the activities and they were grumpy. Maybe it was my lesson plan that was boring or not fit for them, I don't know. But I never wore jeans again in class after that." (Darlena)

There is therefore a dual expression: one of freedom to regulate and one to resist the control of others in the conversation. Deci and Ryan (1985) note this aspect of autonomy when "controlling events are hypothesized to

stifle creativity, and diminish cognitive flexibility which can yield more negative emotional tones, and decrease self-esteem, relative to events that support autonomy” (p.63). This shows how participants may at times strive to free themselves of control. By breaking away, they may allow themselves to regain control over the interaction as well their need of creativity and agency.

Keeping to personal goals and getting what one needs can be a result of regulating the conversation, and it supports participant engagement in the conversation. This can be stated explicitly:

*First I want to say that I am \*passionate\* about the topic of how structures for online cooperative learning can leverage (or doom because they can do so...) collaboration! And second, that I am a practitioner and have a very down to earth approach to these things so forgive me if I'm over-simplifying here. (Doreen).*

Or, when steering the topic towards his own area of interest:

*Let me point out the changes in our way of communicating ... I mean the virtual one. But are the issues the same as in real life? How to improve communication online if we consider teaching online? (Léon)*

And when Frank, unhappy with the turn of the conversation, steers it to what *he* feels is important:

*I would like to add an extra viewpoint: for me communication is mainly about UNDERSTANDING of others and ourselves through sharing, and trying to find agreements. (Frank)*

But at other times, the act of regulating the conversation, to steer it towards one's needs and goals remains implicit. In the example below, Sanja asks if she is permitted to bring in the concept of 'consciousness' in communication. The term is in the title of the MDT, but she implicitly remarks that this aspect has not been treated in the postings of her peers or the moderator. She therefore intervenes, (this is her first posting in the conversation, she has been reading without posting for two days prior to posting) to regulate and satisfy her goal.

Dear all, *could I say something* about the title of this interesting thread? I think teachers must be conscious of communication strategies since their work is based on communication. But (...) are there also unconscious aspects that should be contemplated? How can we change the personal, inner history of each teacher? How can we teach them the importance of empathy in the educational relationship?" (Sanja)

Here, Sanja is not going off-topic but is steering the conversation to a specific aspect that she deems has been overlooked by participants. The author notes that her sentence starter is different than the one analyzed earlier: it is no longer "this reminds me of", but "could I say something?", that is a *permission asked (and self-granted)*. It is therefore less of a breaking away from control than a motivation to pursue a personal goal.

Getting feedback that is below one's expectation or getting a level of feedback that is deemed superficial, low quality or inexpert can impede motivation of participants to engage. In one example a participant who requests input on quite expert material gets a superficial response. She then no longer posts in the conversation for weeks before returning to it when a new motivating game (see curiosity, section 6.2.2.1) is launched. The author observes that when a participant is pursuing clear personal goals and does not get closer to these within her engagement in the conversation, motivation to engage is hindered.

In this instance the participant is changing the topic and brings it back to her own interest and goals:

@Nicole, you can share with us why you (and Chaya.) decided to start in the Ning platform a discussion thread on the Arts - *which I thought was great! I don't want to put you 'on the spot';*), but *would love to* hear your thoughts on if and how you see the Arts playing a role across disciplines, on leveraging cooperative learning also across disciplines... Tks (Doreen)

This same participant shows a level of persistence in her goals and many of her postings are attempts to regulate the conversation toward personal goals. It is important to restate here that these were coded for autonomy (and not *competence/persistence*) since autonomy focuses specifically on *regulation* by participants *of the course of the conversation* in relation to *personal goals*. This is in contrast with other types of postings illustrating how participants may be motivated to engage without having specific

expectation towards their personal goal. At times, *mere participation is enough to satisfy a need to connect with peers, enjoy the company, learn and reflect:*

“P.S. I really like this thread. Maybe I asked too many questions because I don't have any answers. I think I was just talking to myself... (Sanja)

#### 6.2.2.8 *Accountability*

As noted previously, the community recognizes participants' competence and becomes a space where shared and emergent leadership arises (see sections 6.1.2. & 6.2.2.2). It includes a number of participants perceived as 'wizards' or 'experts' who are recognized for their skills and knowledge in certain specific areas. Most online communities host and recognize such experts (Ardichvili, 2008). This recognition is 'distributed' in a sense that on one topic the emergent leader can shift from one person to another; this can be a function of participants' availability (time) and variable capacity for commitment. Also, participants who wish to improve their status and earn the recognition of others will be inspired to show and share their knowledge with others. The assumption is that knowledge is then combined through interactions in the community and creates value for its members and may also support individuals' practices (Kumi & Sabherwal, 2018). Coding for this theme comprise sense of responsibility and individual accountability.

Sense of responsibility towards the community is observed and analyzed. The density and intensity of interaction in the MDTs require participants to put effort in reading regularly, sometime large amounts of text, if they wish to follow the conversation. One who is away for just a couple or three days will have to plan for at least an hour of *reading* to catch up. Therefore, it could be tempting not to read and just jump in the conversation at any point. It may be the case that participants do this, however, for others, it is evident that they take the time and effort to read the postings. They may do so out of personal interest but also as a show of respect for the work of their peers, and consequently responsibility towards the community as shown in the following example:

“I've been reading through all the comments, and I was really interested in the ideas and questions that have been shared here. It raised, for me, many other questions and reflections.” (Natasha).

Individual accountability is demonstrated. In most instances, promises of feedback or finding a resource for a peer etc., are followed up upon and participants 'show up' to the task. It may also be evidence of a *norm of reciprocity* (see also section 6.2.2.6). If a member wishes to receive attention and support, she/he may wish to show others his/her own goodwill to support peers. Hence, reciprocity sustains individual accountability; the salience of reciprocity in the interactions lends weight to interpreting that motivation to engage and respond is supported by individual accountability and a sense of responsibility towards the community.

#### 6.2.2.9 Summary RQ2b and RQ2c

The study revealed eight main factors (see Figure 25, as well as Table 18 and 19) that were found to contribute to teachers' engagement in the conversation: sprightliness, inclusion, ethos, self-confidence in one's practice, persistence towards attaining goals, control, accountability, and curiosity. SDT was supplemented by a literature review relative to motivation in online settings, within a multiphase method of thematic analysis. As well, SDT did not wholly account for the content and this revealed curiosity as a theme that accounted for the content that did not fit the SDT model.

- curiosity is a major supporting theme and is confirmed as an important factor for engagement highly relevant to sustaining motivation. It encompasses strategies of moderators as well as participant-to-participant interaction. Curiosity is a significant broad category to be added to the SDT model to cover all the content in the data.
- self-confidence in one's practices and persistence towards attaining goals are the most important factors of motivation (Competence).
- sprightliness, inclusion, and ethos support connectedness in the community and identity-based attachment making participants more willing to conform to group norms and find collective agency. (Relatedness).
- motivation also hinges on, control, self-regulation and accountability of participants towards each other and the community as a whole, especially in a context of an OPLC that not externally rewarded (Autonomy).
- common purpose and collective efficacy are grown through engagement in the conversation

Maintaining interest requires to support participants needs and goals. Teachers, who remain active in the conversation, after their initial involvement in face-to-face training, demonstrate their *capacity to play key roles as owners and designers of their development and learning*. Implications for the creation and maintenance of conversational OPLCs are that all *factors interacting in the conversation generate a complex system* that is part of the story, is inescapable and warns against broad generalizations. These eight factors, as this section has demonstrated, are very much interconnected. Thus, it is possible that combinations of factors will have specific and diverse effects on engagement as a motivated activity. These questions will be discussed in Chapter 7.

### **6.3 What participants take home from their engagement in the conversation and what this means for teacher practice in the classroom: the example of practicing democratic assessment**

The question of democratic practice was studied through the lens of assessment and through the analysis of sample 2 as explained in the Methods section (5.3.2.2). The issue of assessment is often perceived as a major bone of contention in the field of education for democracy. Participants of the Pestalozzi OPLC have invested much time in conversation on the topic of the democratic practice of assessment, and thus more than 900 postings refer to assessment and/or evaluation. This investment is further demonstrated in the types of postings that are quite lengthy and show deeper reflections on behalf of participants.

I find [this discussion] very important. I can see really deep contributions; it requires a careful reading. (Natasha)

If we can't assess creativity, it means we have to spend more time on those things which we may assess ([like] transmitting knowledge). Maybe that's one of reasons why teachers don't want to "waste time" on creativity? (Chaya)

The findings help us understand what the stakes are concerning the issue of assessment and how engagement in the conversation is perceived to be related to transformation in participants' practice in the classroom.

### 6.3.1 What type of pedagogical methods are perceived as appropriate for developing democratic competences among students and fostering a culture of democracy at school (RQ3a)

In this section, are presented the results of both the lexical analysis and the thematic analysis, that were conducted on sample 2. Both approaches are described in the Data analysis, section 5.3.2.2. The thematic analysis (Braun & Clarke, 2006, 2013) of the content was useful. It generated 6 *themes* in the conversation on assessment.

#### 6.3.1.1 *Learner centered practice is viewed as a pillar of democratic practice*

The quantitative lexical analysis revealed a prevalence of terms such as shown in Table 21.

It is necessary to see in what context these terms are used. The results must be put into perspective in view of the situation in which the discourse occurs, namely, a conversation between teachers seeking to exchange on the issue of education for democratic citizenship, and the development of competences for a culture of democracy.

**Table 21 Related terms and their occurrences in the conversation revealing four areas of concern**

Area of concern	Groups of terms	# of Occurrences
1- Learner - centeredness	Student(s), learner(s), child(ren), kid(s), youth, young schooler(s).	254
	Assess, assessment, evaluate, evaluation, feedback.	245
	Teacher(s), teaching, educator(s), educate, colleague(s).	176
2- Testing and grading vs. learning	Test(s), testing, exam(s), examination(s), examiner(s), grades, grading, marks.	235
	Learning, developing, understanding.	97
3- Ecosystem of assessment	School(s), schooling, high school(s).	92
	Education, educated, educational.	79
	Family(ies), parents, mother, father.	57
4- Prescriptions and probing	Should, shouldn't, must.	53
	Question(s), questioning.	45



These occurrences, and frequencies, show four main areas of concern:

- a. First, it is interesting to note in the first three counts that it is the *learner* who is most represented in the discourse on assessment, compared to the *teacher*. This indicates an orientation placing the child/youth/student at the center of the discourse on assessment, rather than the teacher, which can translate a certain focus of the group in conversation.
- b. If we then examine the next pair of occurrences, we observe that the frequencies of terms corresponding to the act of testing or exams are higher than those relating to acts centered on learning. This point could be seen as contradicting the previous interpretation. The author will come back to this point in section 6.3.2.
- c. Family and school are the organizational structures that come next in terms of frequency, showing that they are the parts of the 'ecosystem of assessment' that are the most discussed as compared to other parts of the system such as governmental and other education institutions (ministry, higher education, curriculum designers, academic inspection, policymakers, etc.).
- d. Finally, prescriptive formulations (duty, must, should), as well as questioning abound and seem to form an important set in the discourse, with participants probing standard practices and searching for their next practices.

The context therefore requires further analysis on these tracks. For this, the thematic analysis is helpful, and the 6 themes are presented in relevance with the RQs. The symbol (N), in the tables, refers to the number of occurrences of each theme and subtheme.

### *6.3.1.2 Theme 1: A student-centered ethos of the profession*

This theme, detailed in Table 22, is the most prevalent and denotes a particular attention set on 'holistic education', focusing on the 'whole person', based on 'transversal competences' and where 'life skills', 'wellbeing', including the 'development of emotional intelligence', are considered as important for democratic practice. In participants' discourse, they contribute to building a vision for the purpose of education based on democratic values and considering the role of education for social justice.

**Table 22. Summary and verbatim expressions revealing an ethos of the profession and their respective occurrences**

<b>Theme and subthemes</b>	<b>(N)</b>
<b>Theme 1 - <u>A student-centered ethos of the profession</u></b> <i>where learning is student centered, competence-based, holistic, and where life skills and wellbeing, including emotional learning, are considered important because they contribute to a vision of the purpose of education and the role of education for a just society. Types of summative assessment, competitiveness and grading are viewed as a hindrance to these aims and vision; they corrupt enjoyment of learning and sustain/perpetuate social inequality/prevent social justice in education.</i>	194
<b>Schooling/assessment and human centeredness</b> => Assessing life skills/ Social and emotional learning/ Democratic skills/ Happiness and wellbeing/ Collaborative vs. individual and competitive/ Cooperation vs. Competition.	55
<b>Purpose of education</b> => Obsolete knowledge/ Real-world vs. School world/ Distraction from real world issues/ Purpose of assessment/ Underlying values in assessment practices/ Holistic approach to education/ Learner centered ideology/ enjoyment.	42
<b>Negative emotion/feelings towards summative competitive and standardized assessment</b> => Test driven education/ Teaching to the test/ Assessment in competitive context/system; poor predictive value for real world competences	48
<b>Ethos of the profession</b> => Teachers 'ought to' / Freedom/ Choice: Responsibility	21
<b>Assessing competences (transversal, soft skills) vs. knowledge</b>	20
<b>Power relations and assessment</b> => Arbitrary grading/ retaliation through assessment/ authoritarian	12
<b>Importance of social emotional skills</b>	8

The question of transversal skills such as 'learning to learn', collaboration, motivation and effort, perspective-taking, and curiosity are expressed in terms of actions, emotional regulations, and the reflection necessary for meaningful education. For example, Snježana and Daniel consider standardized summative assessment and grading as unhelpful for the development of such competences:

For me a social[ly] justified assessment should give learners opportunities to prove and improve their knowledge in case

the knowledge corresponds the basic needs of the society.  
(Snježana)

... the fact [is] that it is not possible to check competencies by testing (because test doesn't allow students to show attitude).  
(Daniel)

They are seen as adversely promoting competition between students and ranking them *to the detriment of their personal and social development*. Chaya, notes for example that testing diverts children from their personal interests, since testing pushes them to adopt strategies in which they tend to put efforts in subject matters that they succeed in, or have good marks in:

...children have no place to know what subject they like more. They keep only in areas in which they have good results.  
(Chaya)

The formative approach is generally perceived positively, and as more effective for giving meaning to assessment. In contrast, summative assessment practices are expressed with concern to their inadequacy to uphold fairness and social justice, and the possibility to put the learner - not the curriculum - at the center of the education process. Summative assessment practices are also viewed as inadequate for the challenges of our time, i.e., the development of 21<sup>st</sup> century skills. Summative assessment and grading through standardized testing are perceived as obstacles to human-centered vision and aims; they corrupt students' intrinsic pleasure and motivation to learn and improve, and they sustain / perpetuate social inequalities. The following examples show different aspects of this perception, specifically the struggle to face standardized criteria for assessment with other more human-centered and socially just models of assessment.

Nohemi, for example, stresses how standards can pose extra demands on students that do not enable the teacher to have an individualized approach, nor the student to better learn:

I am often having long conflicting talks with some colleagues, who have a standard level in their mind, believe that it is absolutely impossible to pass the class with a student who can't do this or can't do that and they put very low grades to

them. This is unfair for me because they a) do not try to make this kid be willing to try to become better so much that he/she can, b) they build a wall of demanding standards that discourages so these kids give up and c) they do not assess the student individually but having in mind what the rest of the class does. (Nohemi)

Snježana notes that institutional regulations and standards disadvantage minorities and place the teacher who is concerned about social justice in a hard spot.

In my previous writing here I gave an example for injustice, caused by governmental regulation, e.g. standards in the formal education. ... What should a teacher do, when a gipsy student [sic] is not able to cover the official standards, considered as unjust by the teacher? (Snježana)

The issue that arises most prominently is about ‘transversal competences’ (see section 2.5) as defined in the CoE literature (Mompoin-Gaillard & Lazàr, 2018), and is as well referred to in the discourse as ‘life skills’, such as for example ‘learning to learn’, cooperation, collaboration, participation, effort, curiosity, solidarity and respect for the other, etc. expressed in terms of behavior, action, emotional regulation and reflection on democratic values. The question of respect for the choices made by the teacher is set forth as a democratic issue: for the participants, the teacher should not only be seen as an agent for implementing a device, but (s)he must exercise his/her own *educational freedom* in view of a holistic and learner-centered education:

I know that test[ing] is a big limitation for holistic approach in education, but we shouldn’t allow ourselves to be enforced to lead test-oriented teaching. Teachers are not supposed to be followers but creators of educational processes on the micro and the macro level. (Daniel).

The learner, placed at the center of learning activities, is therefore clearly highlighted in the discourse. For example, Mose posts the following message, which comes in summary and is fairly representative of the exchange:

What really counts cannot be seen in the marks: the openness, the ability to think critically, the ability to cooperate, the readiness to put one's competences at the service of a cause, a task, a problem, the ability to go beyond what one has learnt and find creative solutions in a given situation, etc. etc. also the willingness to put effort, real effort in things... (Mose).

### *6.3.1.3 Theme 2: A critical understanding of what assessment is*

The participants speak of a critical understanding (detailed in Table 23) of what assessment really is, its value and its limits. They deem that such aspects would help those present in the problem space - actors and the stakeholders (policymakers and parents) - to develop an awareness of assessment practices and maintain a thoughtful and critical stance towards the issue.

Upon analysis of the exchanges, it appears that the discourse is marked by a feeling of concern relative to the pervasive importance given to testing and grades: the participants point to phenomena such as the influence of current liberal trends in education policies, increased primary level exams, PISA studies that are gaining importance in our minds, cases of cheating, cramming, etc. Nevertheless, participants recognize that the test model is practical because it allows many students to be treated at the same time and through similar tasks:

Testing and grading are (as yet) an unavoidable part in our education systems and - though many of us don't like them - they do serve positive purposes as you pointed out. (Charlotte)

and the teacher can mitigate its negative effects:

I am using tests in my teaching [...] you can check knowledge and skills of many students with similar tasks in the same time. Of course, students don't like tests, and I am practicing few principles to make test less horrible and more usable [useful] (Daniel).

**Table 23. Summary and verbatim expressions revealing a critical understanding of 'what assessment really is'**

Theme and subthemes	#
<b>Theme 2 - <u>A critical understanding of what assessment is</u></b> , its value and its limitations, would help influencing forces/stakeholders (policymakers and parents) to develop consciousness about assessment practices and sustain a reflective and critical stance. This reflection includes reappraisal of: why is assessment needed? What type of learning is valued? (i.e., over-valuing knowledge-base and employability over other areas such as citizenship and personal development); what is the part of objectivity/subjectivity in assessment (what is 'really' assessed?); what are negative aspects of competition and standardization on students' learning.	134
<b>Hierarchy of skills/</b> Over-recognition of employability skills (math, language)/ we value what we assess but we don't always assess what we value / What is valuable knowledge? New epistemologies/	33
<b>Consequences of competitive assessment on students' motivation, learning and future/</b> Assessment as pointing out mainly negative aspect of student performance/ students feel hopeless/ Students run for grades and neglect their own interests	31
<b>Policy influence and stance/</b> Policymakers far from field/ Assessment influence on policy making/ (mis)use and understanding of assessment/ PISA/ blaming previous level for bad teaching	25
<b>Consciousness, illusion of assessment/</b> What are we testing really? (mis)understanding of assessment/ objectivity, subjectivity	25
<b>Parents impact</b> on assessment practices	17
<b>Testing is practical and fast</b> => it allows to 'treat' many students at a time	3

Although formative forms of assessment, AfL and AaL, are put forth by participants as more desirable forms of assessment, the evocations and expressions carrying back to grading and summative approaches, are largely preponderant; however, as the analysis revealed, this model of assessment is largely perceived negatively by participants.

There are various ways to evoke these negative feelings and the exchanges include a re-evaluation of assessment: why is assessment necessary? What type of learning is valued? What is the part of objectivity / subjectivity in the evaluation (what is "really" evaluated)? What are the negative aspects of competition and standardization of student learning? Several categories of reflections emerge from the discussions; they are about:

*overestimating knowledge and employability* and neglecting other areas of education such as citizenship and personal development:

We start in the primary with all these values the Pestalozzi Programme develops [democracy, inclusion, human rights, active citizenship] and we end up in the high school with a focus on exams [...] I am afraid that our educational system is directed towards employability and produces students as the new working force only. (Krhystyna)

*the role of institutional actors* (authorities, policies, governance) often perceived as actors who do not take into account the realities 'on the ground', in schools:

What are the understandings and beliefs among those who decide on an educational curricula? Among those who write and promote an educational book? Among those who see all bad things being done on the young students, but still remain silent. (Nohemi)

Education leaders should also answer the "why?" question: Why should students take standardized tests? ... I wish education policy makers in my country and elsewhere gave this some thought. (Agata).

*the illusion of the teacher's objectivity* when assessment is carried out:

Yes, marking and objectivity - a big topic and we should discuss it - what we mark when we mark, where we take our criteria, how we apply the criteria, etc... and how to keep the subjectivity out of it. And ... do we manage? [...] And is it worth all the trouble that we go through trying and believing (and making believe) that we are objective... when all that counts is ... at least for me ... whether we are fair, and caring for the learning person... (Mose)

*the instrumentalization of exams as a means of exerting pressure* on pupils/students for them to work and/or to behave in an "appropriate" manner, or as a means of acting out personal prejudice, sexism, or racism:

However, in many classrooms tests are used as a means for keeping the pupils in check. And it works perfectly for our system - it's an easy answer for a complex issue: how to motivate a bunch of 16-year-olds to learn. (Charlotte)

Sometimes teachers are moved by prejudices like racism and sexism, so students' achievements are not assessed correctly... (Snježana).

*the teacher's use of assessment as a means of exercising authority and/or as a measure of sanction/punishment, revenge or retaliation:*

Teachers very often want to show their authority by using and sometimes abusing their power in deciding about assessment issues. "Why did I get 78% on this test?" or "Why did I fail?" The answer often doesn't go further than "Just because I say so." (Agata)

*knowledge considered obsolete or not appropriate for the challenges of our time and for the development of skills for life:*

Large chunks of what is still taught in schools all over the world today is obsolete and will us get no iota closer to any solutions but rather keep us distracted from them. (Charlotte)

Thus, the question of *what constitutes valuable learning* becomes central in the discourse of the participants, partaking in the creation of their microculture of assessment. The conversation around this question can be summed up in an adage putting congruence with values at the center of discourse on practice: *Do we evaluate what we value? Do we value what we evaluate?*

#### 6.3.1.4 Summary

We are in the presence of what Mottier-Lopez (2016) names a "microculture": a set of communal practices and understandings that compose 'a [computer mediated] social setting' by which we may apprehend a relationship between learning and context, within the ecology of learning through conversation. Participants appraise different types of assessment and compare their effects. Educators focus on the value and limitations of assessment and the role of stakeholders in the practice of



assessment. In the process, they start to define a microculture that outlines an understanding and an awareness of the practice.

*The observed microculture* within the OPLC testifies to a particular acceptance of the concept of democracy, a Deweyan perspective, plural and quite broad. The findings indicate an orientation placing the child/youth/student at the center of the discourse on assessment, rather than the teacher.

*Prescriptive forms of speech* ('duty', 'must', 'should') characterize the conversation with teachers exploring 'needed' principles for democratic forms of assessment.

The assessment practice that is seen most appropriate *for education for democracy is the formative type and specifically AfL.*

### **6.3.2 Which are some of the tensions observed in educators' discourse when it comes to experimenting with innovation in education for democracy (RQ3b)**

The tensions revealed in the analysis bring multi-stakeholders in the picture. The terms of 'co-education' for example refers to the teacher/student relationship being extended to include parents. Also, the tensions between standardization, and fairness and social justice in education systems are at the forefront.

#### **6.3.2.1 Theme 3: The impact of standardization and grading on co-education for social justice and shared responsibility (school community, families, students)**

A third salient theme is the *context* in which assessments occur and the factors which may hinder "fair" assessment (Table 24).

**Table 24. Summary and verbatim expressions revealing shared responsibility and co-education for social justice**

Theme and subthemes	#
<b>III- The impact of standardization and the grading system</b> , puts the decision in few hands, hinders all chances for social justice in education, and obliterates opportunities for co-education, teacher agency and student participation and responsibility for their own in learning. It pushes teachers who value fairness and social justice to <i>clandestinely</i> create measures for reestablishing equity and transparency in their assessment practice.	113
<b>Privilege/ social justice/</b> social class	15
<b>Equity/</b> Supporting students in summative assessment, situation related risks	19
<b>Fairness</b> in grading/ Transparency and criteria made public/ Unfairness of standardization	23
<b>(Student) participation/ whole school/ community/</b> cooperation btw teacher and student / <b>co-education</b> , including parents	13
<b>Lack of teacher agency to change things/</b> acting against our feelings and nature as teachers/ living our values as teachers/ conformity/ Tension between democratic intention and will – system/ society cannot change and structures our assessment practices and beliefs	30
<b>Achievers</b> High/low/ individualization/ individual achievement	8
<b>Cheating</b>	5

The discourse points to how standardization and grading, put the decision in a few hands, hinder all chances of social justice in the educational environment, and reduces possibilities for equity, diversity, empowerment of teachers and true participation of students exercising personal responsibility for their own learning. It urges teachers who value fairness and social justice to secretly create measures to restore fairness and transparency in their practice of assessment.

I am myself present while students are having the test, I use this opportunity to help them [...] I try to give them a ‘kick’ according to each one’s personality and characteristics that I have learnt of them during our lessons [...] there are lots of risks coming from colleagues, principals and parents. I would like to know if you provide support to your students during

testing and if yes, in which way you take care of this, to eliminate risks. (Nohemi).

The role of involved actors (actors inside the school / actors outside the school such as school community, parents, students) who manifest themselves around assessment is evoked, according to the disruptive aspects they represent. A series of these disruptive factors are present:

*the intervention of parents* who sometimes resort to bullying or cheating in an attempt to improve their child's results and who, through their support strategies, reinforce the unjust system of summative assessments sanctioned by marks.

I also include parents, since they are also "shaped" into what educational policies imply. (Nohemi)

... parents who usually are counting their children with marks, just because school says so. And they narrow the children abilities and self-expectations because usually they are more "obsessed" with "good marks" of kids. (Sharon).

In our classrooms, and indirectly among students, parents and teachers in general, the biggest power struggles are connected to assessment. (Agata).

... what are the ethos understandings of parents who work with their kids for MY grades, MY exams, MY university studies, MY job interview, MY job, MY salary? [...] There are parents willing to help their kids cheat in the exams in this injustice system and by this they 'feed' the injustice system to grow better! (Nohemi).

[...] all these parents accept success at the exam as the only way for their children to have an opportunity to change their lives. (Sharon).

*the teachers' limited ability to change things*, to change their practices according to their own values and motivations and the weakness of teachers who cannot afford to change a situation they consider undesirable. Participants share their questions about the ability of teachers

to act for a particular vision of education, the fruit of a reflection on its societal goal:

Thank you Lucille for this summary. ... I got this stomach grip reading it. I can't find the way to persuade policy makers to step away from "teach to test" schools. (Nohemi).

As for marks, grades, ranking, measuring students by exams and tests, well, I don't see a way out of it. I don't think society, at least as far as I can see, would accept a different way of ranking people. (Beatrix)

So, can we make the change unless we in parallel change all those who make decisions? Of course, it is not a short-time change. (Nohemi).

*the integrity of school leaders* who sometimes have their careers more in view than the well-being of children:

There are school heads and school council members who know well of all these but act only to the level of satisfying their local and state political relations. (Nohemi).

*the limited capacity of students* who act on their situation through feelings and strategies such as cheating, boycotting, cramming, etc.

What happens when students boycott a standardized test? Protests should also serve as a reminder for decision-makers that parents and students are stakeholders in education policy. (Epifania).

... many students seem very disappointed or hopeless about the future... "The cake is over... no slice for me will be left, so what am I ... for? (Charlotte).

Thus, several tensions can be seen revolving around issues of powerlessness to change the situation due to factors external to teachers' volition and to which they feel ill equipped to respond.

6.3.2.2 *Theme 4: Teacher education and the recognition of the importance of the role of professional development for the preparation of teachers for pedagogical innovation*

Educational innovation is seen in conjunction with formative assessment. Part of the conversation shows the participants striving to explore and develop strategies that highlight a specific pedagogy and an assessment other than based on measurement. Teacher education is mentioned, and its importance underlined to help teachers prepare for innovations and increase their capacity, to dare to take risks, to engage with transformative actions and to question their assumptions ('limiting beliefs', prejudices).

According to the prevailing discourse, it is the model of AfL and Aal which make it possible to put learners at the center, to empower them in their learning and to privilege transversal competences: active, participative pedagogies are often cited, and formative assessment methods are defended. Table 25 presents the subthemes.

**Table 25. Summary and verbatim expressions revealing the need for teacher education towards preparedness for innovation**

Themes and sub-themes	#
<b>IV- <u>Teacher education</u></b> supporting teachers' preparedness for innovations and teacher agency to dare to take risks and engage in transformative actions and challenge their assumptions (awareness of limiting beliefs, prejudice, and bias). <i>Feedback</i> is seen as the crux of teacher's responsibility to support students' learning. A link between 'good feedback' and learning is made, the former supporting the other – or even producing the other.	71
<b>Innovation in assessment practices</b> (+ lack of) => Teacher preparedness and agency to innovate / Teacher education/ Competence/ Time and practicality/ Reflective practice/ New practices	8
<b>Methods and activities for formative assessment</b> => Self-assessment/ Rubrics/ Portfolios/ Continuous assessment/ Frequent report cards/ Individual learning goals	30
<b>Feedback</b> (written and verbal) => Individualized/ supportive	15
<b>Teachers' awareness</b> => Questioning own assumptions and beliefs / Prejudice and bias	10
<b>Where does responsibility for learning lie?</b> => Where the learning happens/ I teach therefore you learn? / Teacher as facilitator of learning/ Student responsibility for own learning	8

Feedback is seen as the crux of the teacher's responsibility to support the development of students. A link is established between "good feedback" and learning, the former supporting the latter - or even producing the latter. Thus, the concept of feedback appears most significant and the subject occupies an important part of the conversation:

Do you send home more frequent reports? Currently, the parents look at the portfolios together with the students at the end of each Unit (5 times per year), but the portfolio is not (yet) structured around assessment. (Alexis).

What is important is to make the report a formative document and thus a few learning goals would be OK if others are dealt with later in the year. (Erich).

On the one hand, the participants seem to be divided on the role of the teacher and from where the responsibility for learning lies, thus revealing another type of tension:

I would like to clarify that I do not think that the teacher has NO responsibility. The teacher has responsibility and has a lot of it. What I am saying is that the "responsibility for one's learning lies with the learner not with the teacher". (Mose).

It takes a lot of skill, creativity and time for a teacher to come up with lessons that tap intrinsic motivation in pupils. No? (Charlotte).

... learning happens in the learner (or doesn't happen, or the learner learns something the teacher did not intend, ...) and learning is not a (mathematical) function of teaching. (Mose).

Nevertheless, they see innovation as beneficial to the student-teacher relationship and to learners' progress, taking responsibility for their own learning. For teachers, formative assessment, AfL and AaL, are the ultimate forms of assessment, ones that can support social justice, human rights and a democratic culture since they give responsibility to learners and allow for transparency in the process of assessment. Trying not to get lost in the quest for "better" outcomes in terms of performativity is yet another

tension that is highlighted. Barbara, for example, states her intention to share power with students by giving them responsibility for their own learning and assessment. Whereas Barbara speaks of a compromise combining student self-assessment and teacher marking:

I think it's important to discuss the evaluation criteria with the students who are the builders of their learning and should be able to evaluate themselves. (Barbara).

Talking about portfolios, ... They had to fill in their portfolios at least once in two-week time. And it was a really good thing. I had to give them marks at the end of course, but those portfolios helped me a lot - they offered me a clear insight of some particular student's competences, his/her weak part/strong sides, things that should be worked on ... And students liked it- it gave them a sense of accomplishment. (Alexa).

Thus, in participants' discourse, assessment shapes pedagogy and, therefore, formative assessment will favor learner-centered pedagogies, while summative assessment with scoring encourage teacher-centered education. Summative evaluation and especially grading produce the opposite of ingredients for a democratic culture when they are not carried out under fair conditions. Scoring has the collateral effect of concentrating power in the hands of few people at the expense of equity, democratic practices, and human centeredness. In the discussion (Chapter 7), an interesting question will be the extent to which this discourse on AfL is coherent with what AfL was designed to be, in the wider neoliberal education ecosystem of performativity and teacher accountability, that teachers are evolving in, in most countries.

### 6.3.2.3 Summary

Educators are finding contradictions as expressed in their wish for congruence, and search for spaces where they can align their practices and their values of democracy. In so doing, they unearth the tensions that they perceive, often painfully, between what they would like to do and what they can do, and between what policy says about what they should do and what they are in effect asked to do. Therefore, they turn their attention to *measures they may take to mitigate* what they view as the perpetuation of social injustice.

*Several tensions* can be seen revolving around issues of powerlessness to change the situation due to factors external to teachers' volition and institutional hegemonies to which they feel ill equipped to respond, such as: the ability of teachers to act for a particular vision of education, the fruit of a reflection on its societal goal; the limited capacity of students who act on their situation; the intervention of parents who, through their support strategies, reinforce the injustices; the integrity of educational leaders who sometimes have their own preoccupations more in view than the well-being of children.

*Participants co-construct a principled position on assessment*, as a centerpiece of their critical reflection, as they 'dissect' their practices and create 'sets of recommendations' for new practice. Their position features *values of fairness and inclusion that assessment often pay slight attention to*, thus increasing the recognized frameworks of AfL (as operationalized for the purpose of this study [see indicators in the 'Methods' section 4.5.3]) with *democratic* principles of assessment. In the process, teachers aim to *mitigate what they view as the perpetuation of social injustice*.

### **6.3.3 How is engagement in the online professional learning community related to a perceived effect on practice towards democratic, inclusive practices (RQ3c)**

The participants discuss not only principles of assessment but also, and certainly importantly, they discuss their practice. This section presents results concerning participant's practice, or rather 'perceived practice', since it is part of the analysis of their discourse on their practice, and no observation in situ were available in the data.

#### **6.3.3.1 Theme 5: Building a practice in the service of a democratic vision of different assessment approaches: complementarity or paradox?**

Reflections, ideas are brought forth on how to change practices, suggestions, advice on how to face what one participant named the "paradox of assessment". Again, competence-based models as well as formative assessment are, on the contrary to summative and measurement approaches, perceived positively by the participants (Table 26).



**Table 26. Summary and verbatim expressions revealing how formative assessment is perceived as ‘the’ democratic approach to assessment, that complements other modes of assessment**

Themes and sub-themes	#
<b>V – Building a democratic practice: Formative assessment</b> is ‘THE’ form of assessment that can sustain social justice, human rights and a democratic culture. Summative assessment and especially grading do the opposite when they are not done in fair conditions. Assessment shapes pedagogy and therefore formative assessment will promote learner centered pedagogies while summative assessment and grading support teacher centered education. Grading has a collateral effect of concentrating power into the hands of teachers to the detriment of fairness, democratic practice, and human rights.	<b>41</b>
<b>Summative assessment in the context of constructivist approach/</b> Summative assessment of life skills (not desirable/difficult)	13
<b>Power concentration</b> => Teacher centered context, ungrounded policy	12
<b>Summative assessment can be useful when done in fair conditions/</b> clear criteria/ correspondence between preparation and testing/ testing what has been taught and not other unexpected content/ Not only method used	7
<b>Complementarity</b> of Summative/grading and formative assessment	5
<b>Formative assessment is better</b> than summative	4

However, also present in the discourse, even if marginally, is the idea that summative assessment is not ‘all negative’. It is therefore not rejected by all participants. Summative assessment is seen as being able to play a formative role, under certain conditions:

... exams can be done fairly well at the end of a well structured, designed and implemented course of study that appropriately prepares the learners for a final test that is valid and reliable. (Agata).

Marking and assessment in my opinion is also a crucial part of students learning and knowledge building if we do it as a collaborative work. (Alexa).

I would support working towards a clearer and common understanding of the purposes of assessment - one part of which may be testing (and tests can be fun). ... it is not assessment (whether tests or other means) per se that is the problem. It is the weighting that is put upon them - normally by those who do not have the privilege of teaching. (Erich).

The paradox is pointed out as a system based on "competition" that perpetuates conditions harmful to the creation of cooperative and collaborative learning environments, even as many recognize the need for collaborative, cooperative environments today:

... the almost invisible line between collaborating and cheating in training or educational contexts. We all agree on the benefits of collaborating and the collective construction of knowledge. And yet, we often call it cheating when students collaborate. A paradox, no? (Erich).

*Faced with this paradox, the data attests to an attempt by the participants to explore alternative paths and to co-create emerging practices, in context.* This is coherent with participants' shared intention to support the development of democratic citizenship and transversal skills "for life": i.e. educational content that these educators deem *suitable for the needs of our globalized, complex, changing, and unstable societies*. The courses of action are numerous, but of quite diverse nature, going from experiments in international cooperation to the identification of gaps in which educators can exercise choice,

We would aim to strengthen self-assessment and to have a shared system of evaluation: it should be shared by teachers, students, parents and it should aim not to equality, but to equity. (Erich)

and explore emerging practices that follow their intention to nurture democracy, equity, and social justice, in their daily work.

I hope this is a good approach: When I am having an hour of written exams with my students (I am obligated to do so 3 times a year) I am discussing the result with each one of the students ... I ask students to work in couples in order to do the

tasks that they didn't answered properly on the test ... they get yet another opportunity to learn. I don't have the right to correct their written tests but I do have the right to consider this new state of the students as successful when I will be asked to put a grade for them. The ones that have done very good or excellent to the tests know that their will to work within the couples and help others is also a point that I consider for their grading. (Nohemi)

The recommendations, the actions carried out, are logically accompanied by encouragement, positioning with respect to the group (this point is further analyzed in Theme 6. The tracks mentioned very often refer to the power of a collective:

*Having a module on this will certainly be worthy and [give] us a chance to direct our voices to decision-makers. (Nohemi)*

Hence, there is a perception that the framework of the OPLC is undoubtedly one that significantly upholds attitudes and behaviors for innovation in education for democracy. This perception, in many respects, translates into an activist discourse. Such is a main finding presented in the next and last theme of this investigation into participants' discourse on practice (Theme 6), and perception of how their engagement in the OPLC has influenced their practice, namely the *democratic practice of assessment*.

#### *6.3.3.2 Theme 6: A perception that belonging to the OPLC, and engaging in the conversation supports the transformation of educators' practices in the classroom*

The study's analyses focused on instances in which participants share information *on how their engagement in the conversation has an impact on what they think, feel, want and ultimately do in the classroom* (Table 27). Ideas for improving practices, suggestions, and recommendations in the face of difficulties are provided, as we have seen in the case of what Erich coined as "*the paradox of assessment*" (see Theme 5).

**Table 27. Summary and verbatim expressions revealing a perceived impact of engagement in the conversation on teachers' practices in the classroom**

Themes and sub-themes	#
<b>VI – <u>The impact of belonging to the OPLC on practice in the classroom</u></b> , and how engagement in the conversation supports teachers in their experimentations with innovation or novel practices. The opportunity to compare education systems in EU countries and realize the <i>similarities of challenges</i> faced by teachers across Europe, pushes teachers to problem-solve together. Teachers find motivation and encouragement in the CoP that helps them to change practices.	52
<b>Support in CoP</b>	20
<b>Comparative education Europe</b>	16
<b>Change in practice</b>	16

Beyond the simple sharing of resources,

I could steal many ideas that were mentioned already here.  
(Camelia)

Thanks a lot for the link to the new OECD study, Barbara. Very useful! (Agata)

I consider these funny 'activities' proper for primary classes. Most of them are meant to be used to assessment knowledge but at the same time we, as teachers, can observe many other skills, speaking skills, social skills. I want to know if you or some of your colleagues are using such kind of activities in order to develop the collaborative learning for little [young] students.  
(Tomas)

participants partake in activities that may demonstrate that their engagement in the conversation has an impact on their practice. Salient in the data are instances in which participants are comparing their situation in their respective countries:

Teachers in Serbia are also frustrated with final exams, assessing etc. I wrote an article about it and people who can understand Serbian/Croatian/Bosnian/Montenegrin etc. can find it here. (Daniel).

In my country, teachers only give out report cards twice a year and in addition to academic grades, students only get feedback on their general conduct and perseverance and these are also translated into grades. (Agata)

In Portugal, the teachers also guide their practice for the exams. Can you imagine exams in primary education with children 8 to 10 years? Primary education is becoming a sort of training center for the examinations of Portuguese and mathematics. (Epifania).

I am afraid that the economic recession in my country is used as an excuse by specific ideological and political circles to change the holistic (and thank God we still have it in primary education) approach of education. (Krystyna).

In Greece the whole education system is preparing kids for their next exams & educational studies. So we have the primary school blaming kindergartens (kids have just played around), the junior high-school teachers blaming the primary ones, the high-school teachers blaming the junior high-school ones and the university lecturers blaming the high-school educators. What's the blame [about]? "They [students] can't [do]anything - they know nothing" (Nohemi).

Maria, the parent-teacher meetings are very similar in my country. IF and WHEN they are asked, teachers justify academic grades and the grades they gave or are about to give on conduct and perseverance. And that's it. (Agata).

and creating opportunities to work in cooperation with colleagues from other countries,

... we'll be working until Saturday around innovation and tradition in the school systems (we are Germany, Italy, France

and it seems that Slovenia and Romania are going to join us) ...  
(Luisa).

Further to national differences, and cooperation, another area of comparative collaboration is expressed in recognition of the fact that participants work in diverse educational contexts,

Sofia and I had different approaches to this question, as Sofia works in non-formal education and I work in formal education. We both agreed on the fact, that both spheres need close cooperation. (Boica)

and similarities between participants' contexts are underlined:

Thank you, Lucille. for this summary. Reading it is relieving [revealing] to see these "to the test" similarities are all over the countries (more or less). (Nohemi).

Thus, by comparing their distinctive situations, members of the OPLC are able to identify the nature of the 'leeway' they – and others – have or gaps they may create, to exercise choice, freedom and control over their practice.

Teachers do have a choice about how children experience both curricula and assessment and I agree, cause I am doing so. Still this is done in the room of "safe gaps" between system's orders and teachers' will for holistic education. ... the 'safe gaps' are getting smaller. (Nohemi).

@Daniel, I like your ideas to humanize testing situations.  
(Charlotte).

Precise activities are discussed and co-created. In this sequence, Alexis celebrates that her team has been given the chance to choose the assessment approach:

as we are a new school, we can pretty much decide how we want to go about it.

She evokes the IPC (International Primary Curriculum) AfL system that she and her colleagues are very happy with. But, she is feeling stuck: she

explains that she realizes that it is her first time to give a report in the new assessment framework her team has chosen to implement; she asks for support:

I would need some help from you. We are working on writing our first reports for our students ... I'm looking for something that looks at progress, comparing the student to themselves, but not ignoring grade levels altogether. Have you seen any reports that you particularly liked? What report system makes sense to you? I would be very grateful for ideas! (Alexis).

She gets answers, from Erich and Agata, and although they are encouraging, they also point to what they perceive as shortcomings in Alexis' team's implementation:

What an opportunity to shape the way that staff, pupils and parents view achievement but, regrettably, this is a question that should have been part of the discussion about curriculum planning, implementation and evaluation when the school began. (Lesson 1.) ... my strong recommendation would be to take a competence-based approach to reports which individualises the student report card and demonstrates personal growth and development in relation to the field of study and the integral competences. ... Lesson 3. Learning leads to change. Are you (and your colleagues) ready for it? Lesson 4. As a new school you have a great opportunity to do something different on assessment which really enables students and involves them. "Carpe diem!" - Seize the day! Good luck and let us all know what your decision is and why. (Erich)

I was writing very similar thoughts to Erich's when I saw his post :) so this is just a few additional ideas: I agree that the assessment criteria should have been thought over, agreed on and made public to learners and parents alike but it is never too late to introduce them to detailed and personalized feedback. They will most likely be happy to receive a report that supports their learning this way. Also, I wanted to ask how many students (and what age groups) will be assessed by how many teachers this way? Will all your staff be ready to spend

quite some time on reflecting and writing about all your students' achievements? Here is how I usually assess my learners (trainee teachers):

- Describe expected learning outcomes of course (as discussed in September)
- Comment on how far I think we have achieved these as a group and what it was like for me to work with the group
- List any personal learning aims of the individual trainee (I usually ask about this at the start of the course and keep record of their development throughout the semester)
- Comment on how far I believe the trainee has achieved individual learning goals
- Describe (again) the main aims of each major individual assignment, project or task the trainee submitted or performed and give feedback on them (strong points and possible areas for improvement)
- Summary and encouraging suggestions for further development (for example links to videos or online resources)
- Overall grade (which they need for admin purposes).

*This is very often a full 1 or sometimes 2-page document per trainee. Very time-consuming but very useful and enjoyable once you get into it. Hope this helps, too. It is great when you can introduce such a system in a school. Not many colleagues have the opportunity to do so. You're lucky!! (Agata)*

What is striking is the level of detail of the advice. It could be that Alexis, the asking participant, would feel defensive after receiving a rather sizable salve of critique of 'what could have been done better'. She clarifies and justifies:

The IPC AfL system actually includes self-assessment done by the students, and so the few learning goals that have been assessed so far have been assessed both by teachers and students (there are Teacher rubrics and Student rubrics, which describe the same ideas in different words). I find that to be one of the best components of the system ... I guess I did not describe the situation clearly enough. My apologies. ... the Assessment for Learning system that comes with IPC



(competence-based, luckily) is a very complex one, and the writers and trainers of IPC don't suggest starting with it in the first year of the IPC implementation, so we are building it up little by little, and are not using it fully, yet.... (Alexis).

Clarification, perhaps further than what we noted in section 6.1.2, on the issue of depth of cognitive processing in online conversation, is an important part of the interaction that supports not only common understanding, but also provides the participants opportunities *to clarify their questions for themselves*. In Alexis's posting, the author highlights (italics) the terms that demonstrate this *effect on self-reflection* that the activity of clarification brings and the *epistemic state* (readiness to be curious and learn) that it denotes:

... trying to stay true to the ideology behind the Assessment for Learning system (looking at learning as a process, thinking in stages and rubrics), I don't want to work with grades, or do summative assessment. And that's why I'm *puzzling* with how our reports should look like in the meantime. Right now I'm *tending* towards listing the Learning Goals covered in the Units that the students have done per subject, and after each subject offering a short summary about where the students are doing well already, and what they still need to work on. I'm *doubting*, though, whether we should already include the couple of assessments with rubrics that have been done or wait until we have the system well set up. I'm also *wondering* whether listing the Learning Goals makes sense at all at this point, considering that the students have not been assessed on most of them have, yet, and am *wondering* if we shouldn't just stick to a written evaluation for now. (Alexis).

Alexis also pursues her efforts to obtain the 'just in time' support and the exact advice she is seeking for:

What is missing, yet, is the continuity, just like you mention. I understand that the learning goals need to be revisited and reassessed to ensure continuous assessment and so look at the learning process. What I'm not so sure about is how to keep the reporting continuous. Do you (or others) have any thoughts on that? Do you send home more frequent reports?

Alexis gets very detailed further response from a member of the community:

Thanks for the clarification and it is good to know that you did have a system. One enlightened view of report-writing gives space within the report for the pupils/students to indicate freely how far they have achieved the intended goals and what their effort was in relation to the task. Additionally, they indicate what transversal skills they have encountered/attained during the study period. Children are amazingly honest if given the chance. Maybe you might want to think about this for next year's report and make the development an iterative one. What is important is to make the report a formative document and thus a few learning goals would be OK if others are dealt with later in the year. If you adopt a competence-based approach then there is a good argument for continuous reporting and that when competences are demonstrated and achieved. Sadly, although we now have the technology to do this form of portfolio development with strong evidence in the portfolios, the fixed ideas of reporting only two or three times a year is unlikely to be succeeded by continuous assessment in the immediate future. (Erich).

Although she will not entirely resolve her issue, this sequence of interaction illustrates how engaging in the conversation supports the transformation of teachers practices in the classroom when participants are ready to ask questions and act as critical friends.

*Erich, thank you for the resources and your suggestions. I agree that competence-based education is a good step forward. And we are definitely in for some change, that's why we started a new school :) Thank you for your encouragement. (Alexis).*

The engagement in the conversation supports the sense of belonging to a like-minded community and *the formation of evolving individual professional identities*. As teachers 'dissect' their practices and create 'sets of recommendations' for new practice, they refer to the power of a collective, and gradually form an emerging *collective identity*. This is further evidenced by the frequent use of the terms 'Pestalozzi Programme', 'Pestalozzi community', 'Pestalozziers' or 'Pestalozzi spirit'. This finding

echoes our previous finding that that participants experience *identity-based* as well as *bond-based attachment* to this community, that is attachment to the group as well as to individual members of the community (Ren et al., 2012; Schneider et al., 2013):

My secret is this: The moment I stepped into Pestalozzi Community, I started regaining hope and energy to go on, between people that are sharing same values. (Nohemi).

Ending this comment I would like to bring to the discussion another "gap" I see in the EU on education. It is what the Pestalozzi Programme propels (holistic education). (Krhystyna)

Remembering what was analyzed in the seminars [of the Council of Europe Pestalozzi Programme] then and reading all the messages below I can see some common features of the 'Pestalozziers' (allow me to use this term for all of you colleagues). (Krhystyna).

Teachers do have a choice about how children experience both curricula and assessment. I do not believe that it needs to be managed so gloomily nor do I believe that most Pestalozzi members feel that they have to conform. (Erich).

Very Rogerian in essence :-))) I feel that you have grown as a teacher so much in the last years: my mind fills with wonder. Congrats for the hard work you did on yourself, and are trying to do with/for your colleagues now! Keep it up! That is dissemination of the Pestalozzi spirit. (Lucille).

Thus, participants' engagement in the OPLC partakes in sustaining their self reflection,

(...) I really enjoyed following your thought of the fine equilibrium that goes between teacher's responsibility and learners' autonomy. You also made me more aware of that on a personal level as I do struggle to keep out of the way and leave the floor for the learner. (Vladimir).

sentiment of *collective agency*,

I was very provoked by this discussion on life skills and I thank a lot Barbara, Agata, Maria, Nohemi and Lucille!!!!

which in many respects translates into *an activist discourse of actors mutually involved in perspective-taking, metacognitive activity and co-creating their practice*,

I think that's it. Let's change these negative practices!

### 6.3.3.3 Summary

Through community activities, such as sharing ideas, confronting views, comparing situation across borders, participant build their awareness of the similarities of challenges they face and manage to give each other 'just-in-time' support to co-construct a response to these challenges. In the process of doing this, they clarify their questions for themselves, build and strengthen their professional individual and collective agency. If the microculture came about in the conversation, the conditions in which this occurred are noteworthy.

People of different sub-cultures (linguistic, professional, occupational, institutional, and political) came together to share their meaning and emerge with new meanings. In doing so, they encounter the problems that come with trying to do that, before even being confronted with the problems they need to solve in their contexts. Being removed from their particular circumstances, participants may engage with issues without trying to reach a foreseen outcome or solution. It becomes a constant situation of learning creatively in conversation in which people share meaning, values and develop a common purpose.

Social and political critical views are expressed relative to social justice and discrimination and participant views sustain the *activist presence* already observed. Engagement in the OPLC participates in sustaining participants' sentiment of *collective agency*, which in many respects translates into *an activist discourse*. As educators refer to the *power of a collective*, the activist presence comes in even stronger in their discourse. At the group and at the individual level, the emerging microculture thus translates into an *emerging collective identity* and sustains *an activist discourse and posture*.

## 7 Discussion

The aim of the research was to explore developing forms of continuing professional development (CPD) for teachers to identify and better understand *the affordances of online professional learning communities (OPLCs) that foster the establishment of an ecology of learning conducive to the development of democratic practices in educational settings*. For this purpose, the investigation has been exploring in detail the background mechanisms driving the OPLC to understand the ingredients of conversational CPD that takes place among in-service teachers sharing the common aim of being able to promote various aspects of democratic principles and understandings within European schools. Therefore, the author investigated the interactions occurring within the conversation between in-service educators in light of three theoretically motivated and data driven specific research questions each with their sub-questions. The study analyzed the features of the collaboration between participants ('the what' – RQ1) and highlighted factors that motivate them to engage ('the why'– RQ2), the next step was to further inquire about the benefits participants take home from their engagement and in particular what this means for teacher practice in the classroom ('the what for' – RQ3).

The answers to each of the RQs was presented - and initially discussed - in the findings chapter. In this Chapter 7, these results, seen as contributing to an emerging holistic picture, will be reflected upon, in the relevant theoretical structures, to build on previous research and theory on the topic and present substantiated claims that support new theoretical perspectives. A more general reflection on theoretical implications of the research will be discussed in Chapter 8. Before making any claims, the author here recognizes, once more, her 'inevitable involvement' in that which she observed. However, to alleviate the issue, the methodologies used in this research incorporated a variety of devices to diversify the research perspectives (the 'windows of concern') and create allowances for cross-examination and subsequently higher accuracy of the results.

The chapter has six parts.

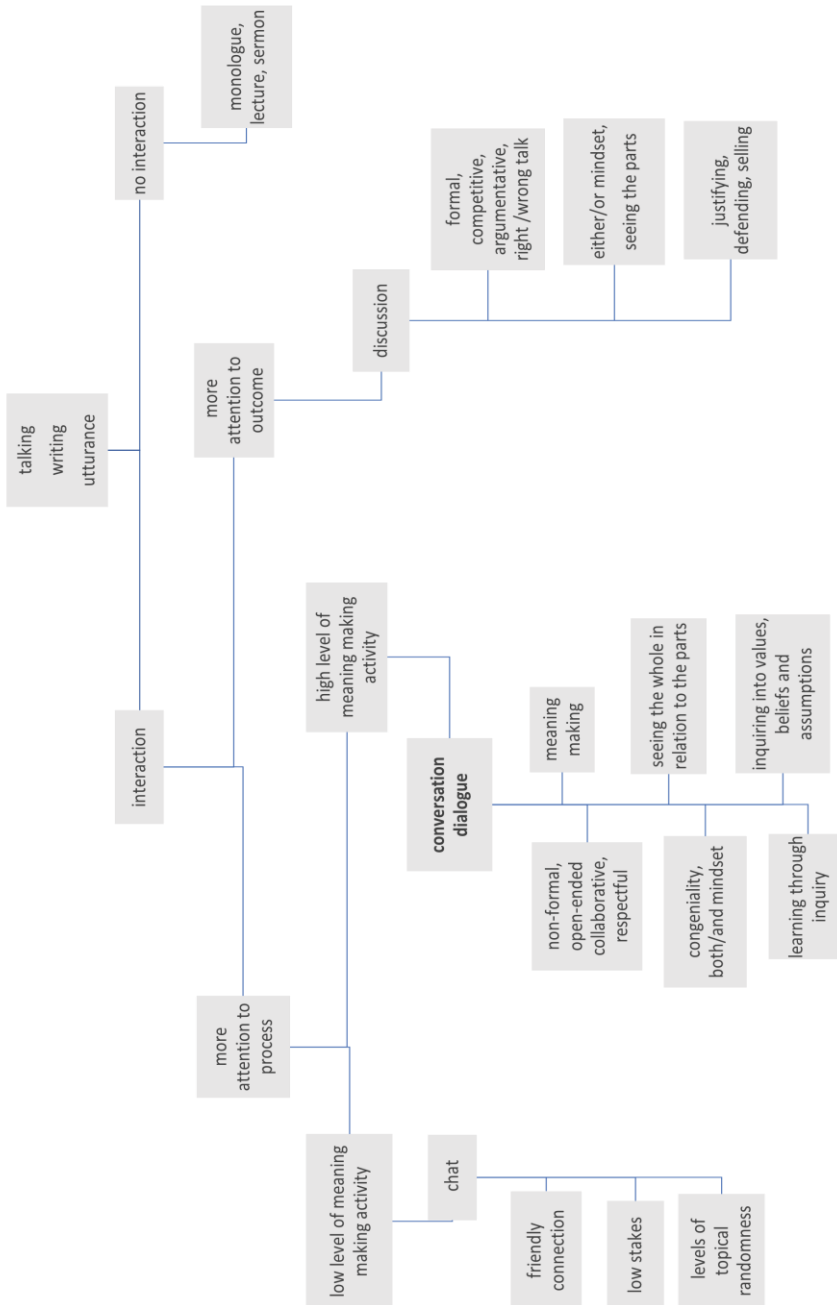
- The first section engages with a new theoretical perspective on the concept of conversation and ecology of learning (7.1).
- Sections 7.2, 7.3, 7.4 are the discussion for each of the RQs and their sub-questions.
- Section 7.5 is a brief discussion about the methodology of the research.

- Section 7.6 handles the integration of the various pieces coming together around the emerging central themes, the relation between the parts, and proposes a relational map, (section 7.6.1), showing 5 *structures of the ecology of learning*.

## 7.1 Conversation and ecology of learning: Two concepts that evolved throughout the study

Because the PP was successful to bring teachers to a space of transformation it is worthy to understand why and how this was the case and, in doing so, to theoretically decipher **why certain conversations are better learning opportunities than others**. Departing from our theoretical framework the study led to envisage conversation in a slightly different manner. The author conceptualizes *conversation as an ecology of learning* that is conducive to engagement in online professional learning and development.

Conversation as it appeared in this work, is defined as (Figure 27): the activity of talking/writing with one or more others, that involves interaction in a non-formal format that is open-ended, collaborative, and focuses on the process of interacting and exchanging ideas more than on the results or outcome of the activity. Inclusive conversation, playing out in a democratic ethos, displays individuals' show of respect for the other, learning through inquiry, openness to inquiring into values, beliefs and assumptions, accepting disagreements as opportunities (congeniality) in order to engage in collaborative meaning making. A conversation is more than the sum of its parts and makes connections across a wide variety of participants' experiences, beliefs, thoughts attitudes and behavior. Therefore, conversation is a socio-constructivist concept useful to talk about learning and teaching as a social, emotional as well as cognitive activity. With such a definition, learning takes on meanings such as joining new communities and partaking in new conversations for new meaning making, thus shifting our relationship to others, and possibly shifting within ourselves. One could then argue that there is no such thing as 'mere' conversation because conversation involves learning when we are loyal to its principles and practices and perhaps its continuance is the only successful outcome a conversation may claim.



**Figure 27 Decision tree of components of meaning making conversation as per distinction with other forms of talking, as found in the study**

Conversation stretches beyond dialogical structures. It appears to the author that conversation, thus defined, is *a means for a teacher education process that educates for uncertainty, ambiguity and complexity* and opens a path for new possibilities. These characteristics are much needed today, in line with the increasing demands on the profession, and the complexity of present-day systems. Thus, it is critical to continue to *articulate the relational and potentially transformative power observed in the conversation*. Figure 27 shows an understanding of forms of talking that illustrates a definition of *'meaning making conversations'* that the results of the study suggest, and that *distinguishes conversation from other forms of talking*.

The framework of *ecology* was the most useful to accommodate the richness and diversity in the data as well as the complexity of the factors interacting to form the environment. The study considered what makes up the ecosystem: structuration of online collaborative discussion, engagement as a motivated activity, systems of professional development on the national level, international institutional setting, social, cultural and material conditions surrounding the collaborative. The author here presents the spaces (Edwards, 2005; Payne, 2005; Whitworth, 2016) that have been found to make up the ecology (Table 28). By spaces, the author means the varying ways of seeing the overall phenomenon of the OPLC, and the conversation, drawn from this study and partly previously referred to in background sections 2.3 and 2.4, then completed with the study's findings and discussion.

All these elements taken together, and the relationships they entertain between each other, form the context of *conversation as an ecology of learning*.



**Table 28 Components of the ecology of learning for online PLD in an OPLC: a weaving of spaces**

Technical space	Political, professional, and programmatic space	Social-cultural space	
		Brought in the OPLC by participants' contexts	Created in the OPLC through conversation (microcultures)
How the design of the platform and the technical features shape (afford and constrain) the interactions.	What the education systems bring at both levels, international network and in the member states. Policy, hegemony, authority.	What humans bring in with them through their stories and experiences. Extended human space with vicarious presence of all types of stakeholders.	What is being created within the conversation, a shared story, utterances, relationships, intercontextuality, intertextuality, resources, artefacts, an idea of democracy in education
<ul style="list-style-type: none"> <li>- The internet.</li> <li>- Ning.com.</li> <li>- Social media type platform but without features such as 'likes' and 'tagging' 'pertaining to reputation, bandwagon behavior and cliquishness.</li> <li>- Time and effort (the technology requires keeping up w/ postings)</li> </ul>	<ul style="list-style-type: none"> <li>- CoE (institutional sponsor)</li> <li>- The program: <ul style="list-style-type: none"> <li>. Pestalozzi training events, courses, projects</li> <li>. Pestalozzi online professional learning community (OPLC)</li> </ul> </li> <li>- Education systems of the member states</li> </ul>	<ul style="list-style-type: none"> <li>- People</li> <li>- Intention(s)</li> <li>- Purpose</li> <li>- Interests</li> <li>- Goals</li> <li>- World views</li> <li>- Interactions</li> <li>- Regulations</li> <li>- Presence(s)</li> <li>- Power</li> </ul>	<ul style="list-style-type: none"> <li>- Democratic ethos, power-with value system</li> <li>- Perspectives on assumptions, attributions, beliefs understandings...</li> <li>- Sense of belonging</li> <li>- Finding common ground</li> <li>- Finding personal and collective agency</li> <li>- Evolving professional identities</li> </ul>
The technical skills of participants	Teams harboring pedagogical intention (training and moderation)		- Distributed leadership
Language and repertoire			
Pedagogical traditions			
			Pedagogical change

*The technological environment and the technical skills of participants* constrain and afford certain types of interactions. The methodology used did not allow for knowing much about this interaction between the technological features and the interactions between participants. What the author can say is that it is possible that if different features had been available to participants, the conversation would likely have been shaped by them. Especially features that support reputation building and cliquishness such as ‘tagging’ members, and ‘liking’ content, etc. strongly shape the conversation, and these were not part of the technical features afforded by the Ning platform.

*The institutional contexts* shape the conversation as well, with the legitimization of the main values of democracy, and human rights on the one hand (the Coe) and the education ministries in member states on the other hand. The institution is also present through the training activities and formal events that participants have joined, as the findings have illustrated. The facilitators and teams, as contracted institutional relays, harbored a pedagogical intent that was translated by the moderators into actions in the OPLC, that contributed to drive the conversation in certain directions.

Concerning the socio-cultural making of the community, two main spaces are observed.

*The unique workplace contexts and the experiences of being teachers*, were brought-in by participants’ utterances, thus creating an extended human space, in which all sorts of stakeholders (actors of their school and/or higher education institution), participate vicariously in the conversation. They created a repertoire of language and understandings in the process. These contributions were particularly visible in participants interactions, expressions of intention(s), interests and goals, their pedagogical traditions, types of presence(s), and the general conduct of governance and facilitation of interactions or the sharing of power amongst participants, as seen throughout this research.

*A microculture* was progressively created within the interactions among participants and their overall engagement in the conversation and the developing sense of belonging to the community. Finding common ground, the slow negotiation of a democratic ethos and value system, distributed leadership, the questioning of world views and perspectives on assumptions, attributions, beliefs, understandings, all contributed to the creation of the community microculture in which participants’ professional identities evolved. There, they found personal and collective agency, paving

the path for personal and professional transformation and pedagogical change.

## **7.2 Structuration of the conversation and co-construction of knowledge: behavioral, emotional, cognitive, and social components relative to quality and depth of collaboration**

### **7.2.1 Patterns of participant's activity and interpersonal interactions in the OPLC**

Generally, the interactions within this community are highly cohesive with most postings going beyond level 3 of cohesion (Henri, 1992), (see section 6.1.1.4), thus showing excellent responsiveness between participants. Cohesion, was inferred through the measurement of 'interactivity' (Henri, 1992) and completed by the analysis of 'density' of the conversation (the extent to which participants respond to each other) (Strijbos et al., 2004). Discursive alignments, the degree of convergence, divergence, and congeniality (Locke, 2016; Locke & Daly, 2007; Weinberg & Fisher, 2006) incite different cohesion patterns in the conversation, i.e., there is disruption of cohesion in controversial conversation. In turn, such disruptions affect other features such as pace, involvement, turn taking, and topical persistence. Therefore, the study is aligned with previous research that show cohesive interactions supporting good quality of collaboration and co-construction of knowledge (Henri, 1992; Järvelä, Järvenoja, et al., 2016; Strijbos et al., 2004; Weinberger & Fischer, 2006; Zhu, 2006). Moving from conflict or controversy, to 'constructive controversy' (Daele, 2013; D. W. Johnson & Johnson, 2009a), and to congeniality (Locke, 2016) is the work to be done in a democratic culture where everyone has a say. Such developments contribute to nurturing the specific learning, teaching, and professional development agenda.

Centrality, nodal postures, and strong ties are present in both conversations and are shared, proving shared leadership in the OPLC. This confirms and extends observations made by Locke and Daly (Locke, 2016; Locke & Daly, 2007) about evolving roles in online learning communities; participants can indicate changing degrees of centrality (nodal positions in the network of interactions) in the group (Haythornthwaite, de Laat, et al., 2016). Moreover, the author here adds that this degree of centrality, or occupation as node, *evolves also as a function of what is being discussed and with whom*: a member can occupy a nodal position while the group is

involved in certain topics and concerns, and similarly may not adopt this position in other conversation configurations; similarly one can come in to occupy this nodal posture at another time, in another space, when the topic is other, when the involved members are other, or simply when availability is there. Therefore, one observes *power structures within the community* in which *distributed leadership* occurs.

### **7.2.2 *Relation between the nature of interpersonal interactions depth and quality of collaboration in the conversation***

In this study, *core* members are those who post regularly, or even daily; they have strong ties with their preferred peers and a high impact on the proceedings of the conversation thus confirming Haythornthwaite's results. Density can also lead us to understand the types of ties between actors of the conversation: as Haythornthwaite (2016) argues, stronger ties (high density) lead to greater amount of cooperation, reciprocity, self-disclosure in the "give and take of their relationship". This study goes further to indicate that these *core members with strong ties access more depth of cognitive processing than participants with weak ties*. Therefore, networked ties constitute the product of networked learning *and vice versa*. This means the *network structure* as well as *the quantity of engagement is to be seen in relation to the quality of learning* in the OPLC.

Haythornthwaite's (2016) claim that dense interactions have the potential to create some aspects of groupthink, was not observed, and *heteroglossia* (Bakhtin, 1986; Hamston, 2006; Lee & Brett, 2015) permeated the conversation, proving isonomy or the capacity of members to enjoy equal opportunity for expression. Haythornthwaite also points out that because close ties imply growing similarity between tied peers there is a risk that over time, with continued exposure to the same people who understand the same principles, processes and language. Since they beget established norms and codes of communication, and shared meanings, one might observe reduced diversity in the ideas shared and the level of cognitive challenge. If this is partly observed in MDT1, it is not verified in MDT2 that showed a great variety of points of view, and controversial conversation. Nonetheless, the findings in this study, and namely the type of topical persistence observed with many parallel discussions on different related topics in MDT2 (as shown in section 6.1.1.3), confirm that dense relationships in the community supported teachers in engaging in collaborative activity but did not show any narrowing of their exploration of new and diverse venues of thought. The risk of 'groupthink' may have been

somewhat mitigated in the Pestalozzi OPLC by the international and intercultural composition of the community: educators from different countries have had dissimilar pre and in-service education experiences and may have been exposed to - and thus brought into the conversation - a wider variety of theories and practices. This is important as it points us to *the possible benefit for such international arrangements for CPD in education*: participants have a good amount of sameness (their education systems are similar enough for them to have relevant dialogue) but at the same time their diverse experience can avoid the pitfall of group or 'community-think'. In conversation, discourses are available for a participant to appropriate and internalize. Discursive tension and discourse-change are possible because conversation is a process of the construction of an individual's awareness of the varied discourses available in society. Then, through self-reflection, the individual chooses the discourses (s)he wishes to speak through. Conversation therefore encourages an *ethos-building structure* which foregrounds the basis of individual 'becoming' and of discursive change.

High topical persistence demonstrates that even in controversial conversation *participants are staying on track with their interests*. This again demonstrates the *power of creating learning spaces in which divergence is not a threatening experience*, in which a democratic culture nourishes the possibilities of disagreement and self and social regulation as a device for gaining awareness of the diversity of points of view (and possibly even of worldviews). This activity participates in the *communication structure* of the ecology of learning.

In order to gain a high collaborative quality and deeper level of thinking in conversations it may be better to *avoid open conflict, unchecked controversy, and flaming* ('conflict' in this sense is to be distinguished from 'cognitive conflict' that is an essential aspect of learning through dissonance and getting out of one's comfort zone (Daele, 2013; D. W. Johnson & Johnson, 2009b). Yet, the author does not infer that less learning has occurred in MDT2 and although density, cohesion and co-construction, are good ingredients for online learning, they *do not exclude other forms for learning*: perhaps, if the controversial and conflictual conversation did not visibly produce practical outcomes on the platform, deep learning occurred nonetheless, at another time, in other spaces, possibly supported by participants' experience of a heightened *emotional engagement*.

### **7.2.3 The moderators' role to enhance engagement and co-construction of knowledge**

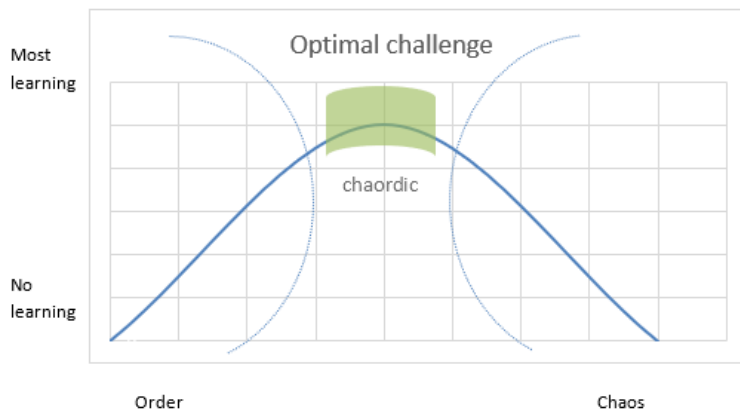
The study found two moderator presences that lead to patterns that were diametrically different, as shown in Figure 20 (section 6.1.1.3). The teaching presence that is pedagogically driven and the peer-presence that is impulse driven. These different patterns may have a significant impact on *what is learned* and *by whom* in the group. We are ultimately interested in discussing *which conversational context benefited more the participants* which leads directly to considering the moderators', or the educator's role in leading groups in conversation for mutual learning. When settings are very structured, one learns something quite clearly, but that might be only very limited (or inconsequential) learning; when learners are presented with more unstructured and chaotic settings then they might start to learn more and gain more from it, but perhaps only up to a point. It is that point that is interesting to highlight for our study of enabling or impeding conditions of conversation to support learning.

#### **7.2.3.1 Enabling or impeding conditions of conversation to support learning**

Since so many different patterns can emerge from conversational learning, educators who wish to plan such settings may consider possible patterns to ask themselves whether they want to construct a setting that resembles pattern A or B, for example. The decision might depend on multiple factors such as the group they are facilitating (if one is dealing with young students, or amateur people, or adults for example, big or small groups, etc.) or what their aim is (learning existing content or exploring within an inquiry-based model). Consequently, educators planning to organize a conversational setting must realize that either patterns may emerge, and one may have to decide which type one wishes to aim for before starting. Such preparation would in turn guide educators' decisions on moderation style and tactics. The concept of optimal challenge was referred to in the conceptual framework of the study in which it is defined as a way to envisage challenge within the conversation. Optimal challenge is suggested to envisage the integration of challenging tasks for supporting interest (Järvelä & Renninger, 2014) and offering manageable levels of risk that motivate participants *to engage at the edge* of their self-confidence (more on optimal challenge in sections 4.4.1 and 6.2.2.3).

*Optimal chaos – a sort of 'chaordic' conversation, governed by or combining elements of both chaos and order – would be of consequence on*

the moderators' choice. In search for this optimum, thinking within the framework of an inverted-U model can be useful (Figure 28): whether one learns more in orderly or chaotic environments may be the result of individual differences in learning habits and learning styles, as a matter of how the teaching and setting interacts with their idiosyncratic style.

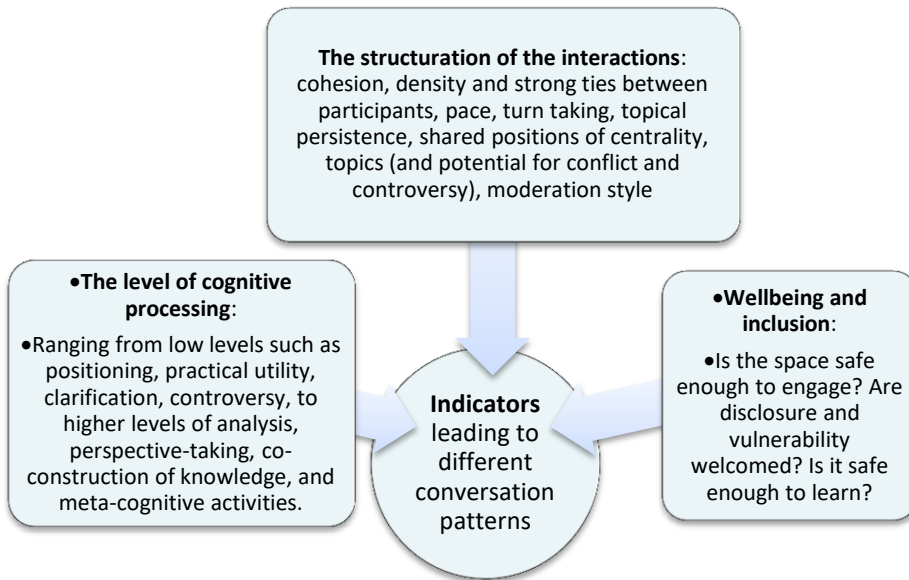


**Figure 28 Finding optimal challenge for facilitating co-construction of knowledge in a chaordic conversational setting**

Nevertheless, beyond such particularities, it is important to ask first what patterns A and B mean; secondly what their difference depends on; and thirdly, is there a setting that is “better” than the other. In other words, *what kind of variables can explain the different patterns and their potential to offer a setting that is an effective learning setting?* Does it depend on the topic, or the moderator, or the participants? To some extent, the results of this research demonstrates that 1) the topic and 2) the moderation style (see section 6.1.3) influenced the pattern of MDT2: conflict emerged, moderation was impulsive and from there the conversation grew chaotic.

But these findings are only generalizable to a certain extent and a more important way to harness them is to relate them to educational planning. This is part of a wider debate about structured instruction vs. more chaotic discovery settings, in online spaces, and there is no right or wrong response. A strong point the author wishes to make is to encourage educators who offer conversation as a means for learning, possibly within a course, to take into consideration the meta-data. Staying aware of network patterns provides the educator with data to evaluate the conversation setting they have provided. An educator might have a vague idea of topical

persistence, of participants taking on roles, coming into positions of centrality, for example. Nonetheless, while observing *engagement patterns* educators will know whether they have managed to facilitate a conversation that is fruitful and inclusive. The next step is to determine indicators that may lead to different patterns (Figure 29).



**Figure 29 Indicators that may lead to different patterns of conversation, leading to more or less opportunity for learning**

Such indicators will help *to know quite soon what is happening*, if and to what extent people are gaining from the conversation and *to plan intervention accordingly* to the evidence gathered.

As a contribution to the problem of moderation of online learning conversations, the author concludes with acknowledging that there is a need to be aware of the patterns and suggesting that, in future research, it would be important to distinguish which of these patterns, if any, are most beneficial for learners. Confirming the theories the study is based on, deep thinking happens better with careful *scaffolding* and continuous *feedback* from the moderators (Anderson et al., 2001; deNoyelles et al., 2014; Garrison & Akyol, 2013). From this study however, it is evident that other conditions count, such as cohesion, pace, turn taking, density, and strong ties between participants, topical persistence, shared positions of



centrality, moderators' style, and whether the moderator is attentive to conflict and controversy that may be unfolding and aware of how it affects the emotional wellbeing and the mood in the community. All of these contribute to a *communication structure* that support co-construction of knowledge and meaning making in online social settings.

### 7.2.3.2 *Are some patterns more democratic than others?*

Another aspect also guides this search for indicators and that is the aspect of *social justice, equity, inclusion, and democratic aims in education*. Uncertainty and demand for thinking is good as long as the learners start thinking. With pattern A the moderator retains participants (inclusive setting), with pattern B the moderator loses a proportion of participants. This poses the issue of equal access: are there more dropouts in one type of pattern, A (very orderly) or B (chaordic)? One could imagine that, for further research, for instance, an investigation was conducted into how participants of both conversations would evaluate their learning, one might find that the pattern B got a better evaluation, but this evaluation would be given by only the 'happy few' because a majority of the participants would have dropped out of the conversation as it became chaotic; while for pattern A, perhaps the majority are evaluating, positively or not, because only a very small number of participants or none had dropped out. Thus, the issue is a democratic one: who is left to evaluate the learning?

These are important questions for educators who deal with the ethical and philosophical question of what is 'quality' in education: they position themselves as aiming either predominantly for high quality education for the few, or for an average quality for many. This is a *professional identity-forming question* that leads to thinking about the purpose of education in any society, looking at quality from two perspectives: individual/elitist or societal/equalitarian, the answer to which might to a large extent determine who has access to what, i.e., vocational programs vs. higher education for example. In a setting in which education for democracy is at the center of the conversation, participants dropping out is not a positive outcome since equal access and inclusion is criteria for quality. Avoiding an outcome in which very few gain something – even if this something was very valuable - and aiming for an outcome in which everyone got something out of their engagement in the activity is a more democratic education aim. An educator is therefore faced with a decision to *define quality* of education and establish whether, and to what extent, benefit for a sustainable democratic society is part of the criteria for this decision. If she opts for the

'happy few', she might also think 'well that's my vision of society!', an aspect that would most certainly reflect her own political inclinations.

In the OPLC, educators were encouraged to reflect on their teaching and *create new meanings*. Yet, this might not have been possible for all participants when conflict induced the high engagement of a few but impeded equal access to other participants who observed silently, as bystanders, perhaps not feeling comfortable engaging in conflict in public. This interpretation is in line with the result of a study conducted by Hill's (2003) in which only 18% of participants of online conversation who responded that they like 'discussing ideas', want *strong debate*, whilst 45% reported they want *harmony*.

#### 7.2.3.3 *Attending to emotions*

Confirming previous research on the matter (Crook, 2000a; Fredricks et al., 2004; Gunawardena & Zittle, 1997; Järvelä & Renninger, 2014; Rogat & Linnenbrink-Garcia 2011), *affective components largely shape the collaboration*. The role of moderators is important, and their choices are impactful. To have a high-collaborative quality, moderators will be attentive to emotions and participant wellbeing. This is in line with other studies such as Jones and Issroff's findings that (2005) although early advocates envisaged peer-learning as the dominant mode in online learning, allowing teachers to take on a more 'equal' and 'peer-like' position, "too little input from the tutor can also be problematic, both for the quality of the outcome and also because there is a need for intervention if the social dynamics become problematic – where flaming occurs for example" (A. Jones & Issroff, 2005, p. 403). Consequently, using provocation and conflict to stir up learners' interest is not a conclusive strategy.

Thus, the *affect structure* comes out strong in the data. As part of regulation processes, moderators should try and promote *emotional literacy in online settings*, exploring feelings along with reflection. This echoes Volet & Järvelä's (2001) argument that interactions that are responsive to variations in the strengths and needs of participants enhance the possibility for learning, therefore attending to emotion is of essence. Participants would therefore benefit from some preparedness training prior to engaging in such OPLCs, to support their engagement and wellbeing.

### 7.2.4 Integrated discussion of RQ1a, RQ1b and RQ1c

Figure 30 sums up the characteristics of each MDT and visualizes the findings for all three RQs in one glance. The results show different presences in the moderation ('teaching presence' and 'presence as peer') leading to different patterns of conversation and particular characteristics of collaboration, and deep or shallower cognitive processes and outcomes.

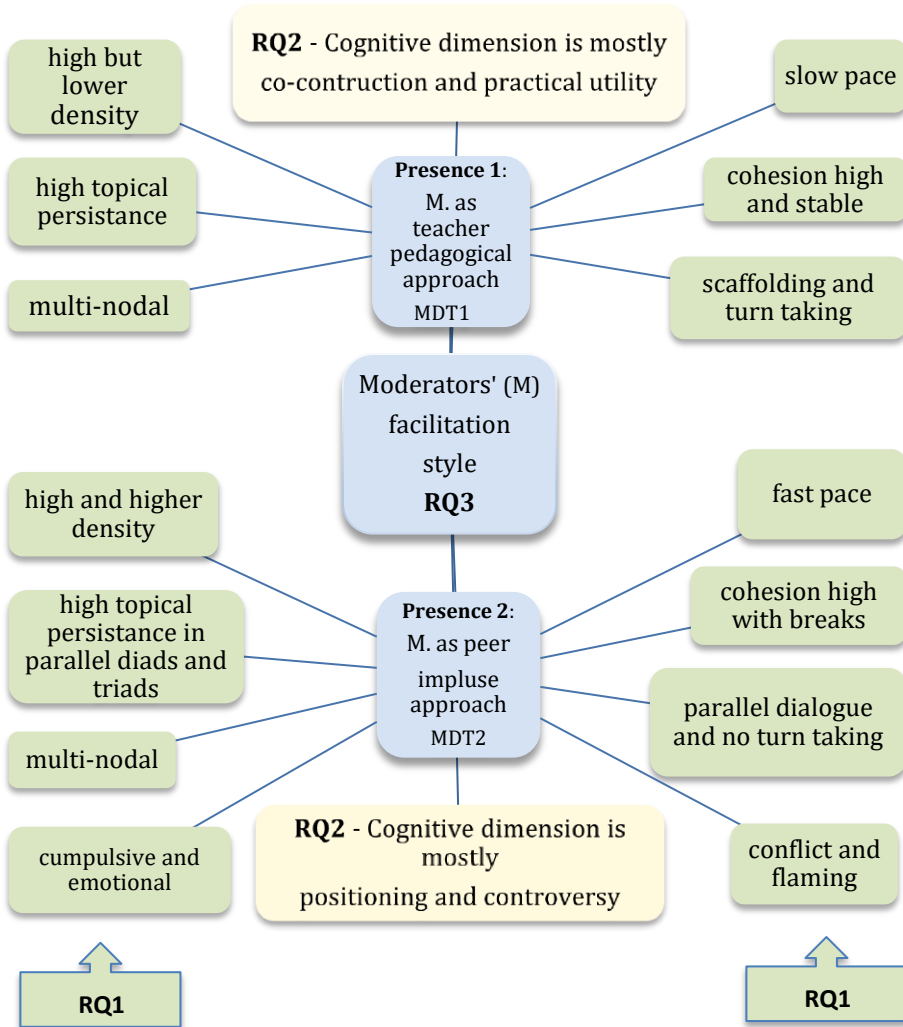


Figure 30 Moderator presences and features of the interactions within MDT1 & 2

This is what the activity looks like in terms of structuration, and what was achieved in terms of collaborative knowledge construction. To learn in collaboration, participants, need to show willingness to go beyond politeness and to wholly engage in the conversation, perhaps voicing disagreements when necessary. The willingness of participants to clarify and discuss inconsistencies, resulted in one case (teaching presence) in a fluid, inclusive, conversation that produced a visible outcome, and in the other case (peer presence) in a nonfluid and nonsequential discussion. Nevertheless, although the moderator displaying peer presence did not achieve visible outcomes in the analyzed sample, conflict and discord did serve as a catalyst to the knowledge construction process, but only to a more superficial level, and less inclusive, than in the conversation in which the moderator displayed a teaching presence.

Higher engagement led to better outcomes in terms of 'visible learning' (deeper cognitive processing) which is a novel finding since no other research on the relation between level of engagement and learning were found in our literature review. The author treads carefully on the issue of assessing learning and therefore emphasizes the notion of 'visible learning', i.e., what was visible in the data in terms of depth of cognitive processing. One cannot know what has been learnt overall: participants may have engaged in a reflective manner, individually but not sharing these thoughts with other participants. Perhaps something is learnt by participants at another time, in another space even when deeper cognitive processes are absent from the conversation, perhaps this is especially true when the affective experience is strong.

The results of the study illustrate that there are probably many types of progression, based on social interaction and meaning making, in online conversation. Perhaps different patterns would emerge if the researcher compared for example the first 20% of an MDT to the last 20%. If there were no progression, online professional conversations would stop at merely producing an exchange of information between participants, and existing paradigms would appear to remain unchanged (Kanuka & Anderson, 1998). It would, therefore, be a benefit to research further two aspects that are not researched here since they emerged as issues as the RQs were being treated: to see whether the 8 themes are found in other online asynchronous discussion threads for teacher professional development, and to compare beginning conversations and more mature ones.

### **7.3 Engagement as a motivated activity**

Thus far, the author has described and analyzed what participants do together in terms of who is talking, who is talking to whom, at what pace, taking turns, staying on topic or not, how are participants going into deeper thought and building on each other's ideas and what is the moderator doing to help go deeper in cognitive processing and co-construction of knowledge, or not. Now the author is interested in discussing the results of the study of practitioners' engagement as a motivated activity that set out to reveal factors that foster high quality motivation in members of the community. What 'pushed' participants to engage in the conversation initially and to stay engaged over time? What are factors that enhanced and/or impeded engagement as a motivated activity? The results shed a light on 8 *factors* that were revealed as important to understand participants' engagement in the OPLC, as a motivated activity.

#### **7.3.1 Benefits acquired by participants through their engagement in the OPLC**

A set of motivational factors accounted in detail for the essentials that appear as being met for participants benefit while they engage in continuous online conversation. Learner motivation is not a one-dimensional issue, but is complex, multifaceted, and influenced by both psychological and non-psychological factors that manifest themselves in individuals and the learning environment (Hadwin et al., 2011; Häkkinen & Järvelä, 2006; Hartnett et al., 2014; Järvelä, Järvenoja, et al., 2016; Järvelä et al., 2014; Järvelä, Malmberg, et al., 2016; Järvelä & Renninger, 2014)

The research started out with a focus on Deci and Ryan's Self-determination theory (SDT) (Deci & Ryan, 1985, 2002) model to study motivation, but it became rapidly apparent that this model, although helpful because it brought out wide categories for possible coding, would be less helpful in describing the complexity observed in the data. Furthermore, the SDT model did not wholly account for the content, therefore, to SDT's broad categories of competence, relatedness, and autonomy, a fourth category, curiosity, was added as a significant factor contributing to participants' motivation to engage in online conversation. Curiosity is therefore added to the model as a major supporting theme that accounted for the full content. SDT revealed itself as a model that is useful to analyze the motivation of educators to engage in the conversation, on a general level, but did not do justice to the richness of the content. To solve this issue, after an inductive approach, SDT was supplemented by

theoretical sources adaptable to the object of our research (motivation to engage in online conversation for one's professional development).

In both studied MDTs, relatedness, defined as the feeling of being tightly connected to the social surround (Connell & Wellborn, 1991; Hartnett, 2010), is revealed as very significant and manifests itself through a set of communicative actions. This goal for sociability shows how participants may sense emotion and closeness - what Gunawardena et al. (1995) and Garrison et al. (2001), and others since, named social presence - addressing how the online media conveys a sense of participants being 'physically' present, a how the *community mood* can depend on few participants who shape the whole atmosphere of the community (Dettori et al., 2006; Preece, 2006; Rourke et al., 2001b) and the subsequent responsiveness and attentiveness to each other going beyond the merely dutiful participation (Fahy et al., 2001, p. 9) to meaningful engagement.

### **7.3.2 Factors contributing to participants' engagement as a motivated activity**

The study revealed *eight main factors* (see Figure 25, as well as Tables 17, 18 and 19) that were found to contribute to educators' engagement in the conversation: *sprightliness, inclusion, ethos, self-confidence in one's practice, persistence towards attaining goals, control, accountability, and curiosity*. The generated themes are in this section integrated to convey how they are interconnected, how each relate to and support each other and how combinations of factors may have specific and diverse effects on engagement as a motivated activity.

These themes underline the importance of the social surrounding in upholding participants engagement, as found in previous research (Järvelä, Kirschner, et al., 2016). They demonstrate how behavior, emotion, and cognition are dynamically interrelated factors that are at play within the learner and are not isolated processes. *Sprightliness* indicating members of the community displaying repeated show of *humor, playfulness* and *friendliness*, all affective expressions within interpersonal relationships, helped in the establishment and curation of a collective, safe and inclusive learning environment that contributed to participants *self-confidence, self-efficacy* and engagement.

Less experienced participants learned from interacting with more experienced participants (experts) and with other peers (Lave & Wenger, 1991). In this environment, *persistence towards attaining goals*, experimentation and *risk-taking* (planning new teaching practice),

*perspective-taking* and self-awareness (reflecting on past teaching practices), can flourish without risking damage to self-esteem, or at least reduce the impact of the fact that 'every act of conscious learning requires the willingness to suffer an injury to one's self-esteem', (Szasz, 1973), a quote that was often cited in the Pestalozzi Programme training events and conferences. The allowance for *self-deprecation* as a form of humor, modesty, and self-assessment that manifested itself in the data, further substantiates this interpretation. This emotional charge has been recognized by scholars.

Lifelong learning along the innovation dimension typically involves moving beyond existing routines and often requires people to rethink their ideas, practices, and even values in order to change what they are doing. These kinds of activities can be highly emotionally charged and the capacity to consider change without feeling threatened is an important ability. (Hammerness, Darling-Hammond, Bransford, & others, 2005)

The conversation is more than the sum of its postings and not all is explicit. Co-construction of knowledge allowed for the emergence of *tacit knowledge*, that is largely intuitive, 'hard to formalize and communicate. (...) [and] deeply rooted in action, commitment, and involvement in a specific context (Nonaka, 1994, p. 98). Among tacit elements, interactions in the OPLC that supported *inclusion* helped regulate the *mood* or *climate* of the conversation. These may remain tacit but will exert force onto the proceedings of the community. Mood is also importantly sustained through sharing of fun and unexpected content (which represented 20% of the content) that breaks from the seriousness and invites others to join with *curiosity* in light conversation. Confirming previous research, community mood sustained a *pro sharing norm* (Anderson et al., 2001; Dettori et al., 2006; Rourke et al., 1999; Rovai, 2007; Schneider et al., 2013); the atmosphere of inclusion was nurtured by members of the community, with the moderators: not being 'ignored' and getting feedback (Anderson et al., 2001; deNoyelles et al., 2014; Hartnett et al., 2014) were essential aspects of the *maintenance* of a *safe learning space* that upholds a democratic culture, trust, and bases itself in cooperative/collaborative principles set forth by the PP (Huber & Mompoin-Gaillard, 2011; Huber et al., 2014; Lázár, 2015a; Mompoin-Gaillard & Rajić, 2014).

Such norms guide collective action and appear to have facilitated collaborative activity within the community. Participants witnessing others

respond and support their peers were compelled to do so themselves. Reciprocity, and trustworthiness in social relations define behaviors and attitudes and discourage selfish behaviors (Kumi & Sabherwal, 2018). Thus, a lack of reciprocity in a community stops participants from contributing. Social psychology experiments have demonstrated how even small, insignificant favors can trigger a reciprocity reaction from the receiver of the favor (Schunk et al., 2014). In online settings, reciprocity is referred to in literature as how much help the community can provide to users when they are in need of responses to their posts (Davenport & Pruzak, 2000; Sun et al., 2014). In this way, participants of the OPLC embodied their sense of *accountability* and *responsibility towards 'the knowledge commons'* (Hess & Ostrom, 2011) as well as exerted *control over* - and therefore regulation of - the content and direction of the conversation.

The study not only revealed participants' *sense of belonging* to the community, (e.g., the shift from 'I' expression to 'we' expression), that we relate to their motivation to engage, but as well it showed how *identity* formation is evolving towards *identity-based attachment*. The conversation reflects what Lee & Brett (2015) refer to as strategies enhancing perspective transformation in teachers participating in online conversation. It also illustrates Bakhtin's notion of 'ideological becoming' that involves "meaning making processes including selecting, assimilating, and agreeing or disagreeing with other's words, which exist in "other people's mouths, in other people's contexts, serving other people's intentions" (Bakhtin, 1981, p. 294).

Such findings confirm other authors' conclusions concerning learner engagement in which *identification* is defined as *belonging*: a feeling of being important and valued in the learning community (Fredricks et al., 2004). The OPLC appears to demonstrate what Dettori et al. (2006) named a community skill, that of creating a sense of belonging which often cited as a factor of engagement and a sign of maturity of a community when it has developed its own self-regulation and participant can exert control and develop accountability over its proceedings. Then the community can fully exploit its learning potential to the benefit of the collective as well as its individual participants. Belonging participates in educators' identity forming processes leading the author to identify an *identity structure* at play within the ecology of learning.

Confirming research in social psychology and ethnography applied to online settings, the results have shown that the members of the OPLC experience an identity-based attachment that invites them to conform to



the group's norms (Kozinets, 2010; Ren et al., 2007). Because *value-based* and *ethos-laden content* abounds in the conversation, it sets the stage for an emphasis on professional development 3.0 (Korthagen, 2017) vs. professional learning (Fullan & Hargreaves, 2016). It also affords double-loop learning (Argyris, 1976) giving a wider context for reflection on the *purpose* of education. This reflection on values and purpose upholds an *ethos structure* of the ecology of learning in which participant's common purpose is to develop awareness of practices and a disposition to question them with regard to their implications for equity and democracy in the classroom. In other words the conversation creates a space for individual self-actualization when a teacher's 'ideal self' is *congruent* with her/his actual attitudes and behavior (Mc Niff & Whitehead, 2006; Rogers, 1961).

Perhaps one of the most basic of these essential attitudes is *realness* or genuineness and *becoming personable in online settings*, which were found to be an important factor for motivation of participants to engage, when they found ways of writing postings that brought in their personality, it increased peer engagement and enhanced a trusting atmosphere, as found in other studies on social presence (deNoyelles et al., 2014; Dettori et al., 2006; Garrison et al., 2000; Gunawardena & Zittle, 1997; Preece, 2006; Preece et al., 2004). Being personable was essential for participants and facilitators alike: when the facilitator "socially projects him/herself" (Haythornthwaite, De Laat, et al., 2016) as a real person entering into a relationship with participants without presenting a front or facade, (s)he is much more likely to be effective to engage with others. This means that the feelings which she is experiencing are available to her, available to her awareness, that she is able to live these feelings, to be them, and able to communicate them if appropriate, thus coming into a direct personal encounter with members of the community, meeting them on a person-to-person basis. It means that (s)he is being him/herself, not denying him/herself (Rogers, 1961), choosing to project the "authentic I" rather than "I of representation".

Thus, the OPLC represents an opportunity to understand how the interplay between these several factors, strongly contribute to participants' motivation to engage.

### **7.3.3 Factors determining the extent to which participants remain active in the OPLC**

The complexity of the factors that interact to sustain participants' engagement leads us to examine the OPLC with a systemic view within a

framework of ecology. The complex interplay of multiple aspects of educators' interests and motivation to engage, the paths they take when talking, bringing in their personal circumstances and weaving them with the circumstances of the community, as well as the outcomes they arrive to, are best considered within an *ecological perspective* where conditions enhancing or impeding sustained engagement and learning are seen to be showing up in the data and analysis.

Facilitating and nourishing a conversational environment – an ecology of learning - that provides participants with *opportunities to address their interests, fulfill their needs, their intention (individual and collective) and attain their goals* sustains participant engagement and should be a provision designed to offer affordances for the success of such means and settings. People's intentional stance is an important component of collaboration (Schwartz, 1999) and sustains participants engagement; for example, the study has shown how participants moved from the individual position to the collective voice. This suggests that the community is a space of *common intention, common purpose* developing into *collective efficacy and agency* – instances in which groups of individuals share the belief that through their unified efforts they can solve the problems they face and improve their professional lives. Teachers, who remained active in the conversation, after their initial involvement in face-to-face training, demonstrated their *capacity to play key roles as owners and designers of their development and learning* (J. Broadbent & Fuller-Tyszkiewicz, 2018; Crawford, 2002; Salmon, 2000), therefore exercising their agency in the collaboration.

Nonetheless, the methodology used in this study cannot shed a light on why some participants never post in the discussion spaces but stay active by reading the postings of their peers. Specific investigation into how participants “pop in” the conversation after a long absence or actually posting for the first time, and into the circumstances in which they act, would be beneficial in order to better understand covert participants' motivation to engage, and such an understanding would supplement the present quest to find factors that support participants' *sustained overt activity*.

Stressing that the context of this community is informal and based on voluntary participation, not rewarded by incentives, grades or certification, one could argue that the findings concerning motivation could be insufficiently generalized to other more common academic e-learning situations such as courses, MOOCs, etc. Nonetheless, it is conceivable that

the findings would apply to contexts in which participation is formalized by exterior sanctions since educators, once afforded the possibility to commit to participation on their own terms, and one would find similar benefits of conversational PLD in formal contexts. Thus, theoretical generalization is appropriate.

The study points to elements that impede engagement in conversational professional development, that we have cited in the previous section: boredom, information overload, frantic pace, conflict and flaming, being the most obvious. It also points to types of relevant activities to sustain engagement in conversational professional development: giving feedback, scaffolding collaboration, being attentive to learners' wellbeing being the most essential. *Hosting* such a mode of PLD revealed itself to be a complex undertaking that may bring satisfying results and *identity-based belonging* to the community when enhanced with the appropriate *ethical, value-laden* methodology, and effective approaches and techniques.

For example, the role of *feedback*, by moderators and peers alike, was found to be a crucial enabler, thus corroborating previous studies on the matter, such as the fact that it contributes to deeper cognitive processing while enhancing inclusion by acknowledging others' presence and contribution (Häkkinen et al., 2003; Hara et al., 2000; Mäkitalo et al., 2002). Consequently, the opportunity to question one's *beliefs* and *assumptions*, to develop *original concepts* and *alternative perspectives* to understanding one's practice strongly contribute to participants' motivation to sustain engagement, corroborative of other studies (Crook, 2000a; Mäkitalo et al., 2002; Schwartz, 1999). Scaffolding also supported depth of engagement and willingness to be critical about one's practices in education. Doing such activities *in public* requires enough trust in the community and in one's own self-confidence to be able to risk putting oneself under the scrutiny of peers, giving critical feedback in asynchronous online communication is more challenging when face-to-face meetings are infrequent (Lázár, 2015a) because the potential for offending the other is real. Hence, the question of developing a safe enough environment, a trusting atmosphere and a positive mood in the community comes to the forefront when considering factors that support sustained engagement of participants.

It is not just conversation and play; it is about setting the stage for *deeper reflection and critical friendships*. This demonstrates the importance of building and nurturing a *social space*, defined as the network of interpersonal and social relationships among group members embedded in the group norms and values, rules and roles, beliefs, and ideas (Kreijns et al.

2013). When community development results in such a social space, collaboration and learning is upheld by trust, sense of belonging, and the strong interpersonal relationships (ties) that are created over time. This corroborates Haythornthwaite et al.'s (2016) conclusions that strong ties between actors are important for sustained engagement because they elicit ease of *self-disclosure*.

Interactions, such as described in this section, illustrate the nascent signs of an 'activist' perspective, one where autonomy, personal goals, agency and competence combine to create a space for authenticity and transformative learning. This conception will be further developed in the next section (7.4). The dimensions, of social, emotional and cognitive nature, found in the results in RQ1 are congruent with these results showing that members of the OPLC perceive the conversational activity as useful not only for their professional development and learning, but also demonstrate the emotional and personal benefits (RQ2a) they acquire through engagement that pushes them to join (RQ2b) and stay active (RQ2c) and grow their collective "knowledge-in-use" (Mompoin-Gaillard & Rajić, 2014).

#### **7.4 Engagement serving an activist stance**

Having now looked at the activity between participants ('the what') and highlighted factors that motivate them to engage ('the why'), the next step was to further inquire about the benefits participants take home from their engagement and in particular what this means for teacher practice in the classroom ('the what for'). This discussion demands therefore a deeper look at what the findings say about the impact of conversational CPD on the genuine practice of teaching and the co-emergence of new and 'next practices. This investigation was directed at what, beyond the process of co-construction of knowledge, participants perceived as being brought into the classroom in terms of democratic practice of teaching.

The analysis of the data revealed important aspects of transformative learning that have been outlined in section 7.3 and call for an in-depth discussion, showing how participants are *meaning making in the conversation* and *what this means for their teaching practice*. The choice for the study was to use the example of assessment practices to narrow the large topic of democratic teaching practice.

Firstly, the interactions between participants, taking place at a distance, show that *a development process took place* (see *identity formation in social interaction* in sections 6.2.2.5 and 6.3.3); and secondly, that the

exchanges often lead to a *reflexive attitude* on the part of the participants that may not, outside such provision for CPD, be as easy to hold in isolation (Chung & Chen, 2018; Hollins-Alexander, 2013; A. Jones & Issroff, 2005; Redmond, 2009; Stodel, Thompson, & MacDonald, 2006).

Through feedback and metacognition, participants engaged in conversation, not only concerned with generating an individual perspective, but also with a goal of understanding how others relate to their perspective (Bakhtin, 1981, 2010). In their study of participant roles in dialogic online activities, Strijbos, Maarten and De Laat, stress that participants when they adopt a 'dialogical' and 'meta-cognitive' stance, understand that they can *structure the environment* to facilitate collaboration for durable knowledge construction and *develop strategies for generating knowledge and monitoring one's own and other's knowledge*, thus contributing to each other's development of learning strategies. The characterization of this type of *developmental processes visible in the conversation* is extremely relevant for our interest in how participants perceive the impact of their engagement in the OLPC on their teaching, because it highlights the fact that they are not only learning new 'stuff' (information, resources), but they are also acquiring new knowledge and strategies – strategies that they may then use towards the transformation of their practice, or not.

When participants become aware of how they learn, they may better perceive how others learn as well, helping them learn to teach in ways that match with how people learn and, accordingly, altering pedagogical choices they make as teachers. Lifelong learning involves "moving beyond existing routines and often requires people to rethink their ideas, practices, and even values in order to change what they are doing" (Hammerness et al., 2005) and thus innovation can be referred to as "the sudden cessation of stupidity" (p. 361). The findings of this study echo Hammerness et al. (2005), concerning the activities of reevaluating values and engaging in emotionally laden dialogue to consider change, here change in the practice of assessment. Interesting is the authors' phrasing "*even values*" as if this were an aspect of participants "going the extra mile" in their self-reflection. In contrast to this idea, within the OPLC - as demonstrated in several ways throughout the research – participants essentially base their reflection on their ethical positions and professional identities in a continuous fashion, since they are discussing democratic values and how they may experience these values in their teaching. They are constantly evaluating to what extent they *are living contradictions* (Mc Niff & Whitehead, 2006): are they contradicting their own values through practices that negate them? When and how are their values denied in their practice?

What is immediately striking in the analysis of the utterances concerning assessment that emerge in the conversation, is the fact that the *formative approach to assessment* is generally perceived by participants one that offers a potential for nurturing a democratic culture in the classroom and one that gives meaning to assessment thanks to its centeredness on the learner and its potential to ‘redress’ some of the inequalities that standardized assessment inevitably produces. Its main tool is *formative feedback*, that allows for individualization and considering each learner’s characteristics, preferences and learning styles, with their wellbeing in focus. These results are at once intriguing and not very surprising. They are intriguing, since, ironically, this position can be put into perspective with historical developments of assessment. Initially, demand for standardized tests were essentially motivated by equality of provision and outcome and therefore essentially as a force for the democratization of education. However, nowadays this purpose is no longer perceptible in the way standardized testing is conducted and interpreted. Not surprising, is the fact that participants, united by a common interest of developing democratic practices and social justice within schools, apply a critical regard on the main assessment practices they see, and partake in, within their national and local education systems.

#### **7.4.1 Pedagogical methods perceived as appropriate for fostering a culture of democracy at school**

The *desire to emancipate* from imposed systems is salient in the data and reveals the tensions that teachers contend with. We are in the presence of what Mottier-Lopez (2016) names a “microculture” - adapted from classroom to teacher education and centered here on social justice. By microculture we intend to signify a set of communal practices and understandings that compose a - computer mediated - social setting by which we want to apprehend a relationship between learning and context. The practices in the OPLC, as well as the practices brought in through participants postings, are observable, “not as observable behaviors in a behaviorist conception, but as meaningful actions situated in a sociocultural context and open to interpretation” (Mottier-Lopez, 2016, p-67).

Educators in the OPLC have given assessment a lot of thought and have strong emotions linked to the practice of it. Conflicting with and disconfirming what recent literature puts out as a ‘typical low level’ of what might be called the ‘assessment illiteracy’ of teachers (Black &William, 2018, p.566), the OPLC is a space where educators together created an

ensemble of principles they want to abide by in their practice, *empirically uncovering all the formative assessment principles* considered as high-quality by the education research community, and more: they add a set of democratic principles of assessment.

Assessment is formulated as a central element of classroom practice, which is an integral part of planning, teaching and learning and focuses on the student's motivation and the way he / she learns. The question of the necessary professional competence to be developed for teachers is underlined. The position of "*the learner-at-the-center*", in line with the Pestalozzi, and Deweyan perspectives, is reiterated in terms of emotional *wellbeing, autonomy* (self-management), *transparency* and reflexive capacity. By placing feedback front and center, participants demonstrate their awareness of the importance of offering detailed, individualized, continuous and constructive advice to learners on how to improve their development. However, the members of the OPLC seem to go further and beyond these recommendations and spend time and energy delving into questions linked to democracy in education. These *added benchmarks for democratic formative assessment* practice are considered essential by the community and integrated into its microculture. Educators *defend a principled position on assessment, as a centerpiece of their critical reflection, which includes values of fairness and inclusion* that assessment plans often pay slight attention to. The author underlines that such themes of social justice and democracy, of openness to cultural diversity, could interestingly be taken up by the research communities on assessment in education systems for further investigation.

Although the production of speech acts and sharing of perspectives could be free and non-controlled, there is great convergence in the participants' discourse. This is also not a very surprising point, as researchers find (in studies concerning online communities) both the tendency for convergence (Garcin, 2014; Haythornthwaite, De Laat, et al., 2016) or 'dominant cultural rhetoric' (Payne, 2005), but also they report on the difficulty for reaching consensus. The OPLC is a rhetorical space (Locke, 2016) that can also be thought of as epistemic: it is "socially produced, and as such it is shot through with ... ideologies of identity and power..." (Payne, 2005, p. 485).

The OPLC appears through this research as such a space that is socially produced and regulated, and holds conception, interaction, and action that converge towards an activist perspective and guide transformation in participants' practice. However, the platform itself, as a paradoxically both

closed and connecting environment, is a space that plays an interesting role in regulating the conversation: even if the space, a priori, welcomes people who want to express themselves and to act in the direction of a democratic assessment practice, the exchanges around this theme seem to reinforce the determinations as well as the feeling of belonging to a group which aims to be influential and to fight isolation and powerlessness with collective action.

#### **7.4.2 The tensions observed when it comes to experimenting with new ideas and the perceived effect of engagement in the OPLC on democratic practices in the classroom**

The study unearthed an internal contradiction in participants' discourse between "what we know we should do" and "what is really possible to do". This creates a form of tension reflecting a shared cognitive dissonance. If everyone agreed on the merits of a democratic practice, the analysis shows that putting in practice the pedagogical methods perceived as appropriate for developing democratic competences in students - and fostering a culture of democracy in school in a concrete way - proved difficult in environments and systems that are not fundamentally democratic (school, college, high school, higher education, organization, institutional school hierarchy). Negotiations and differences appear in the means to relieve this tension.

Participants were *considering the locus of power* which is an activity that supports *finding their agency to become change actors*; they negotiated how to find their power – develop power that ‘can only be grown’ – and their coercive control – seen as ‘the enrichment of every human soul’ – to act within the power-over structures and coercive control (Parker Follett, 1924, p. xii) coming from their institutions. In doing so, they once again nourished their ‘ideological becoming’ (Bakhtin, 1981) thus liberating their opportunities for critical evaluation and alternative courses of action. This confirms Biesta's argument that teachers' talk cannot exist independently from policy, research and discourses about education. This study also finds that the achievement of teacher agency is the result of a complex interplay of ‘individual capacity and collective cultures and structures’ (Biesta et al., 2017, p. 52). It is as well confirming research on PLD pointing to the importance of grappling with teacher values and beliefs (Akkerman & Meijer, 2011; Carr & Kemmis, 1986; Cohen, 2010; Fullan & Hargreaves, 2016; Hargreaves & Fullan, 2015; Harris, 2010; Harris & Lázár, 2011; Jónasson, 2016; Kennedy, 2005; Korthagen, 2017; Mäkitalo et al., 2002; Mc



Niff & Whitehead, 2006; Mompoin-Gaillard, 2015b) in a lifelong learning perspective (Boyle et al., 2004; Day, 1999; Hammerness et al., 2005; Huber & Mompoin-Gaillard, 2011; Huber et al., 2014; Jónasson, 2013).

However, the exchanges also revealed the possibility of changing approaches to assessment in the face of institutional and societal injunctions. Therefore, the discursive tension, beyond the dissonance it provokes, acts as a cognitive constructive controversy (Charlier & Daele, 2006; Daele, 2013; D. W. Johnson & Johnson, 2009a), *leading the participants to agree on objectives for the promotion of democracy and to seek the means of achieving more democracy in educational environments which are not inherently democratic*. Thus, they address a “blind spot” in current work on the principles of formative assessment, namely the question of democracy in education, and its different dimensions: intercultural sensitivity, justice, practices reducing the effects of poverty and social discrimination, ethos and the relationship between policy and practice.

Facing such challenges to their individual and collective efficacy, and comparing their situation in their national contexts, participants at times realize how similar their situations are across diverse educational and institutional parameters and they strongly believe that they can mobilize their collective effort to bring about social. In this they are like what Banfura (1994) refers to as tenacious actors: “Realists may adapt well to existing realities. But those with a tenacious self-efficacy are likely to change those realities” (p.77).

Thus, tenaciously, educators in the OPLC encourage each other not merely by sharing resources and ideas, but more importantly by stating - and restating - their capacity to exercise choice and express their freedom by inhabiting *the ‘gaps’ in their systems*: the *interstices* between their systems injunctions and the commitment to their educator’s will. Such endeavors echo our findings concerning participant engagement as a motivated activity: autonomy, accountability and control are important factors of their motivation to engage. Hence, the study demonstrates how feelings and motivation play an essential role, even if this is a neglected area of education research in the field of teacher education (Hargreaves, 1998; Korthagen, 2017). Authors who have been interested in the matter have pointed to relations between the degree of fulfillment of participants’ basic needs and the quality of their intention to change their classroom behavior (Evelein, Korthagen, & Brekelmans, 2008; Korthagen & Evelein, 2016).

Finally, as Black and Wiliam (2018) report, teachers involved in formulating operational procedures for their use gain confidence and may take ownership of assessment in its complexity. Participants demonstrated their capacity to be critical in public, proving that one can develop more profoundly with trusted peers in conversation, than they could on their own. This is an example of online collaboration that features genuine engagement of participants stimulating socially shared regulation, as well as self-regulation, of learning (SSRL): the group regulated together as a collective to construct shared task-perceptions and shared goals (Järvelä et al., 2014; Panadero & Järvelä, 2015). Participants were engaged in a process by which they *regulated their collective activity, involving interdependent or collectively shared regulatory processes, beliefs, and knowledge* (e.g., strategies, monitoring, evaluation, goal setting, motivation, and metacognitive decision making) orchestrated in the service of a co-constructed or shared outcome (Hadwin et al., 2011).

Furthermore, the fact that these trusted peers are from ‘another workspace’, a different context than their ‘physical’ local context allows them to *show up as vulnerable without risking losing face* with their colleagues in their workplace. It is certainly possible to speak here not only of a “community of practice”, but also of a “community about practices” which, for its part, takes a questioning and reflexive look at teaching actions. It provided the participants with opportunities to clarify their questions for themselves, and develop their sense of agency to transform their practices. This has a potential to address what some researchers (Harris, 2010; Harris & Lázár, 2011) point out as teachers’ resistance to change. The activity in the OPLC pays its dues to the importance of teachers’ exploring own and challenging personal theories or gestalts, seeing tensions between what they espouse and what they actually do in practice, between what they want to do and what they can do, and offers an environment that provides ‘careful encouragement’ (Harris & Lázár, 2011, p. 102).

Visible in the data, the OPLC participants represented not only their ‘own’ culturally informed voices, but also started articulating what can be seen as a ‘community voice’, expressing a viewpoint and using words by which the group and others can recognize itself, thus adding to the communication structure mentioned earlier. This again relates to Bakhtin’s ideological becoming and its role in the creation of evolving identities through contact with significant peers. The dialogue is open-ended by Bakhtin’s model (Bakhtin, 1981, 1986): firstly, there is *outsideness* in that participants understand self and the boundaries between self and other; secondly, *heteroglossia*, in terms of the quality of conversation involving

multiperspectivity is seen and valid voices coexist; and lastly, there is *simultaneity*, as participants are involved in reciprocal listening, responding, and thus, the understanding is embedded in the dialogical activity. Central to making this possible, the conversation attributes also demonstrate once again the issue of belonging and how the way we see ourselves (identity) and the world is to a large extent informed by significant others, including individuals and groups.

The social and critical political views, expressed relative to social justice and discrimination, sustain an *activist presence* and participants' engagement has a perceived effect on their practice. However, one cannot say for sure because they might not actually be doing the practices they tell about, or perceive that they are doing things, more than they actually are. The present discussion is therefore limited to the perceived impact: how participants themselves demonstrate impact in their discourse.

To end the discussion, the author wishes to highlight the many references in the conversation to 'belonging to the community', through expressions by which practitioners identify themselves as 'Pestalozziers', 'Pestos and Pestas'. This nicknaming is a tangible activity that reinforces the author's construal of the *emerging collective identity*, the formation of evolving individual professional as well as personal identities and the sentiment of collective agency, which, beyond the activist discourse, denotes participants' *activist identity*. These elements contributed to the "identity structure" supporting the ecology of learning (section 7.3.2), interacting with the affect structure outlined in section 7.2.3. In this interpretation the author sides with Korthagen (Korthagen, 1993) who underlines that the boundaries between personal and professional is often murky and that processes involving identity formation are at play through conversation with colleagues.

Finally, the tension between the will to move to co-active power and the prevailing culture of bureaucracies and administrations were in fact at the heart of the Pestalozzi Programme's demise. As mentioned in section 4.5, the program's agonistic (Sant, 2019) or activist approach to education for democracy, afforded teachers a sense of freedom and autonomy, a powerful sense of belonging to an agentic community, in which the expression of dissent divergence and conflict was seen as most formative. This principle position did not encounter similar power-with intention at the institutional level. Ministries of Education of the member states, and the changing management of host organization - the Council of Europe - did not show enthusiasm at observing such educator freedom. For, what could

be the use of a liberated teacher in system that values authoritarian and hierarchical structures over truly democratic ones? Possibly, for the institutional leadership, this image of a liberated and agentic educator presents more of a threat than an opportunity to improve European education systems. The PP was a different style of PLD affording a central place to the question of values and “opened up the profession to wider questions about the common good” (Biesta, 2015, p.82). Such tensions, between autonomous forms of professional development, the ‘collaborative cultures’ (Fullan & Hargreaves, 2006, p.6) and orientations that they harbor, and the institutions who sponsor them, can arise. For some administrators, this approach can be disconcerting and what is developed by these collaborative cultures may not always correspond to administrators’ own preferences as they often ‘overlook or overrule the complex, creative, and compassionate realities of what makes excellent teaching’ (Fullan & Hargreaves, 2012, p.11).

## **7.5 A brief discussion about the methodology of the research**

The theoretical approaches molded and supported a creative multiphase method to analyze the data. The research offers valuable methodological insights into how to analyze asynchronous discussions threads, namely the methodology for discovering the structuration of the interactions, and the relation between these and possible benefits in terms of learning. Notably, the methodological device used for analyzing the cohesion of interaction allowed, for example to unearth passive aggressive voices that otherwise would have been missed by the researcher (see section 6.1.2.3). This constitutes a contribution that can be useful for future research. Indeed, the analytical and conceptual framework supported the construction of the method used to study the MDTs conversational patterns and moderation styles. The methodology for the study of asynchronous dialogue in education settings may be a useful scientific contribution both to the field of research on online learning, OPLCs, and to the conduct of conversational PLD.

Using existing data presents pros and cons. However, since our technological environments produce an ever-growing amount of data, it is worth advancing methodologies to analyze such data that may become a ‘new norm’. One might wonder why the author did not complement the data that is collected for research purposes by interviews, surveys, observations, or other investigative devices. To this, the author responds in three ways.

Firstly, a choice was made not to rely on self-report concerning engagement and motivation, since participants have very different level of self-awareness of what *actually* motivates their engagement in conversation. The previous impact evaluations of the program (Pestalozzi Programme, 2015) showed participants giving quite stereotypical responses to such open questions as ‘why they engage’; these are the same types of responses the author found in many of other studies on CSCL.

Secondly, since all research is based on interpretation, the method consisting of inferring motivation and causalities carefully from existing data is not less operational or objective than doing the analysis on generated data as long as triangulation elicits verification of claims. Thus, the author may argue that the data, the theoretical approach and interpretative analysis allowed to answer the research questions, at least as well as with other analytical devices.

A similar situation is found in this study concerning how participants’ engagement in the conversation affected their classroom practice. Because no observations of practice were conducted, the inference relative to participants’ practices in the classroom are produced from what they say about them. This is the reason for which the research question (RQ9) was formulated in terms of participants’ *perception* of how engagement in the CoP effect practices in the classroom, much as a self-report. Engagement appears to have an effect on practice, but the researcher cannot be too adamant because participants might have a very personal point of view of what they are doing, about the practices they tell about, or even perceive that they are doing things, other than they actually are.

Thirdly, online platforms will endow researchers with rich and plentiful data, and this is one point for advocating online conversation: the data stays and becomes a significant resource for educational research. The researcher only used a small portion of the data, which can be seen as a waste of opportunity. In section 8.4, thought is given to this limitation and other approaches making use of much broader sets of data are proposed.

Finally, the case offering a very large data set could have elicited analysis on more quantitative scale. It is the researchers assumed choice to have oriented the research towards more in depth interpretative scrutiny to obtain rich descriptions, that were deemed to better demonstrate the regulative process within the conversation than the thinner description that would have been obtained though big data approaches. Thus doing, the quantity of postings that was included in the data sets for this research is high compared to most existing studies that most often rely on smaller sets.

## 7.6 Bringing it all together: Affordances for successful professional learning and development (PLD) to occur in online conversation

In this section, the aim is to answer the overall concern of this research, questioning what affordances need to be considered for successful professional learning and development (PLD) to occur in online conversation more generally for online professional learning communities (OPLC). The results of this research suggest that such means as long-term, continuous professional conversational activity in online settings are viable and important resources by which teachers can develop their practice through informal ad hoc collaborative interaction. Engagement in a value-based community and the sense of belonging it inspires, helps the development of new professional identities as teachers come into an ‘ideological becoming’ (Bakhtin, 1981, 1986) and into their agency.

The author argues on the basis of the results of the study that the OPLC is first and foremost *a transformative learning community*.

The conceptual framework of *ecology* was operative to accommodate the richness and diversity in the data. Ecologies are living systems containing a diversity of factors that interact with each other that are self-organizing, adaptive and fragile (Jackson, 2013). The study has been considering what makes up the ecology *and* the (eco)system: structuration of online collaborative discussion, engagement in online communities as a motivated activity towards one’s professional development; social, cultural and material conditions surrounding the collaborative, design-principles to support and sustain online dialogue. An ecology of learning comprises a set of processes, contexts and interactions that provides people with opportunities and resources for learning, growth, and realization. Each context comprises a unique configuration of purposes, activities and interactions, material resources, relationships and the mediated learning that emerges from them. These combine into a dynamic ecology of learning.

Further than demonstrating this, the research was interested in identifying and discussing possible *conditions* that should be there to favor participants’ engagement and *affordances for teacher online PLD, and more generally for the design and moderation of online professional learning communities of all sorts*. In this section, to the author integrates the RQs to modelize how the diverse elements of the study appear to interact and build on each other, and to answer the overall concern of *the observed affordances for an OPLC to reach its full transformative potential for*

*participating educators*. This modelization stems from the previous discussion of the RQs.

With proper methodological devices, the study has shown how the patterns of participant's activity and interpersonal interactions observed in the MDTs' on the platform (RQ1a) can be studied in detail. The activity is afforded and constrained by the technological environment, which is a given and is unmovable, but as well participants create other spaces for transformation. Patterns indicate that the nature of such interpersonal interactions can be related to the depth and quality of collaboration in the conversation (RQ1b) and especially the capacity of a group to co-construct knowledge and understandings. Especially, the moderators' role to enhance engagement, and co-construction of knowledge (RQ1c) and meaning making in the community is paramount.

Because conversation and dialogue are open-ended processes, a space is opened for influences of diverse motivational factors. Participants acquire through their engagement in continuous online conversation benefits (RQ2a) such as developing their personal and professional identities backed by their 'ideological becoming' and creating next practices (RQ3c) supported by others from a community to which they feel a sense of belonging. Such are the factors that contribute to participants' motivation to engage in online conversation (RQ2b) in the OPLC: they are engaged through a call to their curiosity and creativity (open mind), their need for belonging and inclusion (open heart), their will to demonstrate confidence and persistence and the possibility for them to exercise autonomy and sense of control over attaining their personal and common goals (open will).

Self and social regulation guides the process and progression of the conversation to answer participants needs and goals. The ability to meet these, most often with the support of moderators, determine the extent to which participants remain active (RQ2c). This regulation is supported by an ethos that orients the process of dialogue occurring in the OPLC as well as it shapes their discourse on future practice with pedagogies that they perceive as democratic (RQ3a), tackling in the process the tension (RQ3b) between their intention and the systems in which they operate, and gaining agency for change (RQ3c).

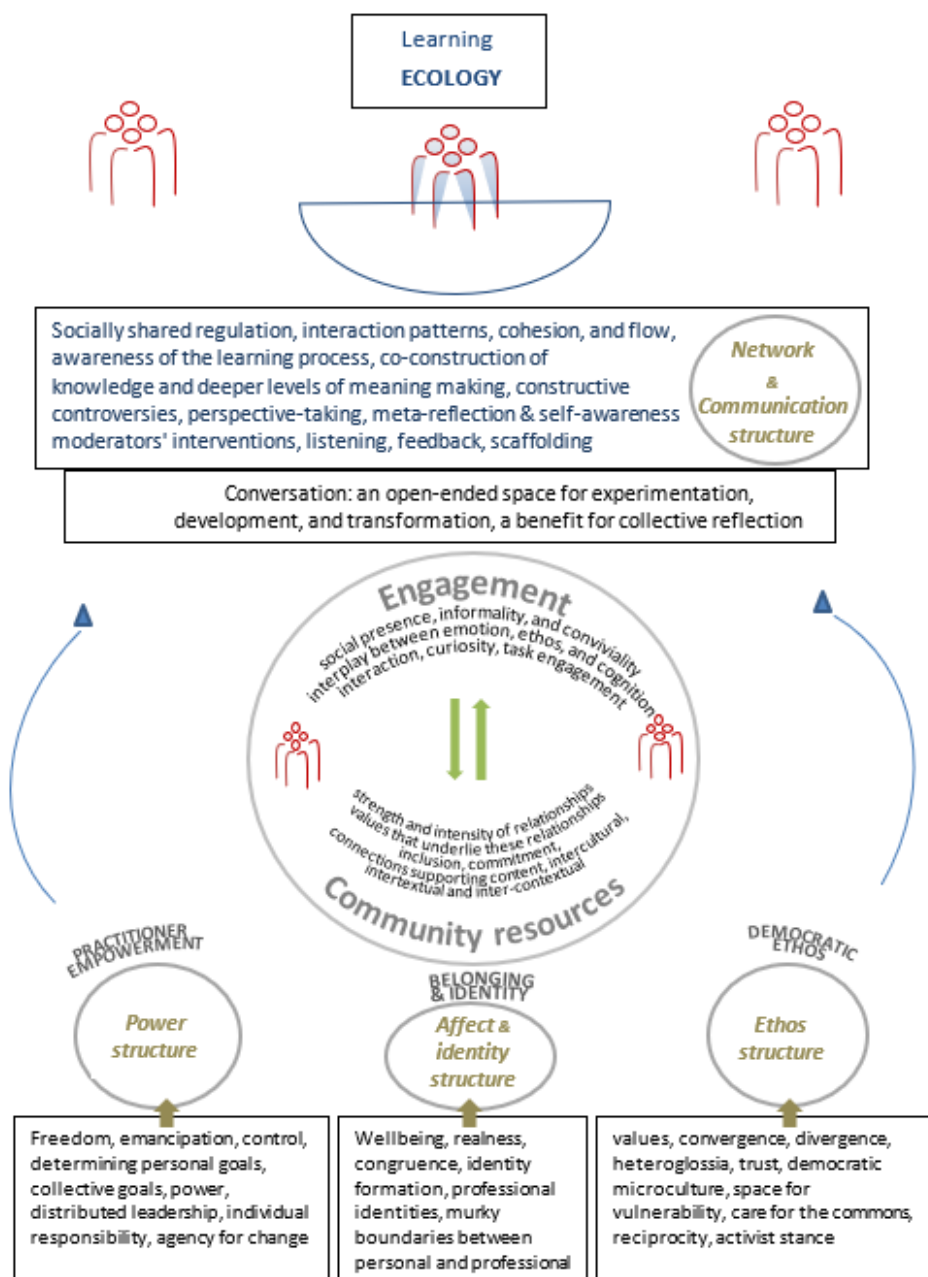
The ecological perspective presented in this work allows us to observe such diverse mechanisms, some explicit but most implicit, and to examine the relationships between them. The various findings and their discussion bring us to consider and propose *a relational map of all the elements of the*

*ecology of learning in which are outlined five structures that together contribute to the whole system.*

- *An ethos structure*, supporting the maintenance of democratic principles and the setup of a framework of values and orientations for education for democracy.
- *An affect and identity structure* promoting emotional wellbeing based on a sense of belonging, professional and personal identity formation, trust and developing the inner psychological conditions of learners to understand how they learn and how others learn, together in conversation.
- *A power structure* in which the quality of ties between participants, shared centrality and distributed leadership are good enough for participants to experience emancipation and control over personal and collective goals, all leading to gain agency for change.
- *A communication structure* based on reflection, shared regulation, co-construction of knowledge and collaborative meaning-making, and a disposition for inquiry to keep conflict in check so that constructive controversies continue to feed into a learning process.
- *A network structure*, allowing for shared regulation, and sporting cohesive interactions nurtured by sustained attention to network patterns and member ties where the quantity and nature of engagement is to be seen in relation to the quality of learning.

Figure 31 shows the diverse elements composing the ecology of learning and the relationships they entertain in an OPLC viewed as a system, with the identified structures. The author has represented the parts and their relationships to *capture the affordances of conversation-based online professional learning communities that foster the establishment of an ecology of learning that is conducive to the development of democratic practices in educational settings*. The figure assembles the elements observed in the data that led to an OPLC that reached a transformative potential for participating educators.





**Figure 31** A relational map of the most salient elements of the ecology of learning outlining five structures that together contribute to the whole system



## 8 The theoretical challenges – further research

In this section the author critically examines the theoretical choices and decisions made during the current work. Advantages and disadvantages are examined to develop a critical view and assessment of the framework and its possible extensions.

### 8.1 The chosen theoretical perspectives and their usefulness

The theoretical perspectives the researcher brought in were very useful to uncover some of the implicit workings and characteristics of the OPLC, and namely the underlying meanings of patterns of interaction between participants, as well as for inferring motivational factors for participants engagement and discovering their operating mental models (representations) within the conversation. The framework of *ecology* is most useful to accommodate the richness and diversity in the data as well as the complexity of the factors interacting to form the system.

The theoretical framework, as mentioned, was noticeable for its unusual, un-conformist, and perhaps controversial *epistemological breadth*. The author argued that its construction was warranted by the nature of the data and the aim of the research, making it necessary to adopt a wide perspective to acknowledge and deal with the *complexity* of issues pertaining to the study of the OPLC and its affordances for professional learning. The author has already argued the advantages and disadvantages (section 4) of the study's epistemological breadth and reasoned that the framework challenges technicist ideas that bolster most current programs of teacher CPD. In these, professional learning is often viewed like student learning — something that is deliberately structured and increasingly accepted because it can (to some) more obviously be linked to measurable outcomes (Fullan & Hargreaves, 2016), with “these outcomes connected to teacher quality, performance, and impact” just like student learning is often understood as student achievement” (op. cit., p.3). Instead, the framework allows to focus on the structures, the relationships, and the overall ethos that becomes essential to assist teachers to *develop beyond learning*, to examine their beliefs and identify new practices that are consistent with their changed beliefs. This option was chosen because professional development as seen in this work and in the Pestalozzi community, involves many aspects of learning but may also involve developing other sides of our self, such as consciousness, cooperation, collective intelligence, reflecting on the human condition and reviving teachers' love for their work for

example. These endeavors in teacher development are those that carry the potential to turn schools into ‘moral communities’ that share a democratic ethos. For all these reasons, the chosen theoretical perspectives and their breadth were useful.

The evolution of an understanding of the concept of conversation was equally essential to the work and the author believes that the definition proposed for conversation in section 7.1, is an important contribution to social contexts for learning, especially in times of pandemics, as today. Since the start of the school lockdowns, there has been a sustained increase of opportunities and invitations to learn online and conversation - hence learning-by-talking - should play a significant and increasing part in our learning ecosystems, both as adults and youngsters. Departing from Turkle’s (Turkle, 2016) observation that our skills for conversation are disappearing due to social media, the author believes that new forms of conversation, and new learning ecologies that are conversational at heart will emerge. The proposed definition sits at a crossroads with other conceptual constructions around conversation and dialogue (Bakhtin, 1986; Bohm, 2013; Gadamer, 2001; Habermas, 1987). These theoretical perspectives were not only important to understand the nature of the conversational activity and its unique features in this OPLC, and how it contributes to the ecology of learning, but also to tease out what was particular to the case setting and what was more generalizable such as the relational model proposed by the author in section 7.6.

Theories pertaining to online collaboration and self and social regulation of conversation were very prominent at the beginning of the work, although some way along the journey they became mostly useful for designing methodological means to make the data talk. When it came to the analysis and discussion, it appears that the author arrived at slightly different theoretical fields, developed in section 8.3.

## **8.2 The limitations of some of the theoretical perspectives used**

Self-determination Theory (SDT) (Deci & Ryan, 1985, 2002) was revealed as unhelpful to describe and analyze the full richness of the data, the research was enriched by a more complex theoretical framework, namely harnessing research in the fields of Computer Supported Collaborative Learning (CSCL) and Networked Learning (NL). Many studies report on the topic of high-quality collaboration and co-construction between students, mainly in undergrad studies and courses sanctioned within HEI diplomas. On the

other hand, there is not much literature the author has found involving online collaboration in the framework professional development, and none in settings in which adults are involved in voluntary and less-than-formal encounters and not in courses. This is perhaps why the study - analyzing engagement in the OPLC as a motivated activity leading to co-construction of knowledge, meaning making and change in professional identity and practice - found itself lacking certain theoretical elements to discuss some aspects of the findings. The author therefore proposes a modified theoretical framework by which to approach the topic.

### **8.3 Towards a new theoretical framework**

The aim of this discussion is not only to point out gaps but also to highlight what needs to be added to complement existing thinking on this type of professional learning and development of educators. In the OPLC, educators were engaged in a professional stance, whereas the available theoretical approaches at our disposal, (CSCL & NL) base themselves on different cohorts, who most often do not yet have their professional experience to bring to the conversation.

Thus, one contribution of this thesis is exactly to bring such works (that have been produced considering a very specific particular target group, i.e., students) to the area of CPD by adapting the theories and transposing them to this data that is different. This explains why the work started with theories that were very useful to analyze the data and at the same time arrived at theoretical perspectives that belong to fairly different fields. It is important to restate here that this aspect of the place and relevance of values in online collaborative asynchronous dialogue is scarce in the research field. Becoming a teacher is about moral purpose. It is about teachers' commitment to an agenda focused on equity and making a positive difference to children's lives.

Firstly, transformative learning (Lee & Brett, 2015; Mezirow, 1991, 2000, 2003) and Mezirow's (2003) *four dialogic interactions*, that support transformative learning, would be helpful theoretical perspectives for this study, because these involve ideas on how one represents the self to others, how different perspectives are shared in a conversation, with respect to values and reconstruction of one's system of beliefs. These dialogic processes could have been harnessed in mutual relation with the Bakhtinian approach to textual context and to interrogate different perspectives, that the author did harness. Whereas Mezirow's model provides a useful structure for examining teachers' transformative learning

processes, the Bakhtinian account of text-based open-ended dialogue explains some of what effective teacher discussions need to include, but not all.

Theory of the conditions of successful communication (Bohm, 1992), discourse and democracy (Habermas, 1987), would have also made sense to deal with *the intricacies of making democracy through talking, and listening, creating an ecology of conversation that truly questions how teachers negotiate truths and how they may envisage democracy as a universal truth for all education.*

Finally, teacher professional identity and capital (Korthagen 2017; Fullan & Hargreaves, 2016), community and identity (Dillenbourg, 2003, Akkerman & Meijer 2011), and creating oneself as a teacher and making sense of experiences (phenomenology) are perspectives - some were harnessed but in a wide-ranging sense – that may have yielded interesting results and discussion if focused on more deeply. What is interesting here is the idea that *the conversation shapes the being of a teacher.* A richer theoretical framework would then include a stronger component concerning *epistemologies on power, self-organization, agency and freedom* (Freire, 2005), that would give a deeper understanding of the relation between community and agency, as well as community and identity (Dillenbourg, 2003, Akkerman & Meijer 2011). It would also stimulate a development on the relation between dialogue and democracy in educational settings further than what this research offers. Consequently, to this awareness, new publications could be envisaged along these lines.

In sum the new theoretical framework would more frontally address the dialogical and political aspects of the issue of creating oneself, with others, as a teacher. How teachers may self-organize (Stacey, 1996, Capra, 1996; Bateson, 1972) is an area of concern that is lurking in the data: with such a perspective on self-organization, the structures and behavioral patterns observed would be interpreted perhaps with a stronger, political facet and critical epistemology. The theory of self-organization stipulates that the system finds its own optimal dynamic balance. In this case complexity would be regarded an enriching nature of things. The detailed results concerning incidents of conflict in this study might be seen as disproving this characterization of the type of process taking place in the conversation as self-organized: the conversation grew chaotic to an overwhelming point; on the other hand, a further study of discussion threads *over time* could show that there is a turning point at which a balance emerges from the chaos and produces embryonic stems for renewed democratic eagerness.

## **8.4 What might be the foci of the next steps, using similar data**

There is enough rich data available on the OPLC platform for many years of research. Although this is an endeavor that the author would look forward to, in this thesis, the focus was on the issues of patterns and structuration of the conversation, moderation strategies and their effect on learning in the community, motivation to engage and remain active and finally perceived impact on practice and innovation. Noting that many fascinating avenues open up, this section points to some of them; the exploration of this arena may also be seen as an exercise to demonstrate how this relatively novel world of endless data can be harnessed in many ways.

But, other epistemological perspectives, research aims and approaches could in the future be developed to study the OPLC in relation to its benefit towards effective teacher's PLD. The author points to some of them here, while noting that there are many more.

- a big data approach, such as quantitative ethnography (Shaffer, 2016), would be of great value to get a broad picture of patterns across several topics, and concerns at once. This approach would incidentally do a fuller service to the data corpus and specifically its vastness by offering a qualitatively "thick" description of the data by using statistical techniques to warrant claims and link the evidence to cultural phenomena of interest, such as learning for and through democracy.
- a longitudinal /developmental approach, following the activities of individual participants to investigate their personal pathways and growth as they engage in the OPLC, some for 8 years.
- a phenomenological perspective, with stimulated recall, could enrich the above longitudinal perspective with a study of what participants say themselves about their experience in the OPLC. Such a study would also further shed a light on the perceived effect on the practice of teaching.
- a comparative approach similar to the one we have opted for but including more MDTs and specifically comparing moderated and non-moderated threads to research how participants may learn differently through talking in different settings and to further analyse, for example, how moderation shapes the ecology of learning, also to explore to what extent moderators are either useful, or indeed indispensable.

Finally, taking the most striking and useful results of this research and applying the models to other discussion threads would undoubtedly generate useful and perhaps more generalizable models.

### **8.5 What policymakers, researchers and practitioners might take away from the research**

It is the author's hope that the work will be of usefulness to several sectors, and stakeholders. *Teachers and school heads* will take home the categories of action and the ways to address the affordances that enhance learning in online dialogic settings. These may inspire both their own professional learning and development and the online environment that they might be called in to create and design. Since this study substantiates that enhancing the discursive resources of teachers—through initial teacher education and ongoing professional learning and development— is an important avenue towards a more agentic teacher profession, *policymakers* in the field of education and training will take home the relevance of conversational forms of CPD. They will understand how OPLCs may give voice to teachers as professionals able to develop a keen understanding of possibilities, complexities and needs, and the strategies to address them. Beyond cultures of performativity, engaging educators in conversation may help to bridge the intersections between teaching, curriculum, assessment, management, policy and practice. *Platform designers* will take home an increased awareness of the complexities of meaning making in asynchronous conversation and the affordances that enhance collaboration to determine and design technical features that enhance the several aspects of the experience of participants analyzed in the thesis. One of the specifics being here the adaptation of network analysis (SNA) to the aspect of learning. *Educational researchers* will take away possible future developments to research and models to apply to other data sets and settings. For example, testing whether the addition of curiosity to the SDT model is useful when applying to other online settings. Research on European-based communities is a valid undertaking in the light of the Union's challenges in terms of inclusion and integration. Keeping in mind the amount of counsel coming in from European education superstructures such as the European Commission and the Council of Europe, interrogations how this counsel trickles down to the sites of practice is a valid concern that we hope research will continue to take up.



## 9 Conclusion

The research has evidenced that online professional learning communities (OPLCs) are efficient for continued professional learning and development (PLD) and that they require certain circumstances to reach their potential, which the study outlined. It conceptualizes *conversation as an ecology of learning* that is conducive to engagement in online professional learning and development (OPLC). On the account that democratic values and competences cannot be acquired through formal teaching alone but need to be connected to real settings and practiced, it is our interest to motivate teachers to engage in a process of lifelong learning and to support their individual responsibility towards improvement of practice and openness to transformation. The study has described and analyzed concrete ways in which emerging technologies can be leveraged to support educators to effectively grow, plan, monitor, and adapt their own, their peers', and collective engagement for transformation in education.

The aim of the study was to explore developing forms of continuing professional development (CPD) for educators and to address in which way *affordances of conversation-based online professional learning communities may foster the establishment of an ecology of learning that is conducive to the development of democratic practices in educational settings*. It unearthed some of the background mechanisms that affect learning-by-talking in online environments, namely how such a set-up operates, what affects it, the many variables that matter, the complications that arise, the situational differences. It offered new insights into innovative methodologies to use in eLearning with professionals and described the factors in OPLCs that may facilitate or impede the engagement of teachers in high quality collaboration and co-construction of knowledge, in the context of the development of democratic practices in educational settings. Through the work, the author has managed to extract precious theoretical and practical value out of the data, that hopefully becomes valuable in developing this arena of *conversational professional development*, even though only a fraction of the available data was harnessed.

The theoretical perspectives that guided the analysis rest within an eclectic choice acknowledging the complex ecology of the situation at hand, but, in the process, recognizing that this involved sacrificing the advantages of using a specific epistemic analytic framework. This meant combining research on computer supported collaborative learning, networked learning, self and socially shared regulation, as well as theories of

communicative activity and concepts of democratic education. We argued that the advantages of this broad approach outweighed its weaknesses, for it allowed for capturing the richness of the data and context as well as construct a creative method for unveiling interaction processes that otherwise would have remained hidden and implicit. In the process, the author has found ample reasons to remold some of these and show how these should be further developed.

The framework of ecology lead to the analysis of many factors and dimensions that interact to build a system that is conducive to engagement in successful online professional learning and development. Working with ecology, one is encouraged to identify and study the relationships within the OPLC seen as a system, not only naming the parts of the system but also analyzing and interpreting the relationships between these parts, and the variables interacting with each other in a systemic and dynamic manner. This framework guided our investigation and instigated a multifold approach to the study of the OPLC. The ecology is constituted in the technological environment that constrains and affords certain type of interactions. It is also composed of the institutional contexts that legitimize the values of democracy, and human rights and rule of law. It furthermore comprises the participants' unique workplace contexts, their pedagogical traditions, and the experiences of being teachers, they bring into the OPLC through their utterances. The teachers created a repertoire of language, norms and understandings, and in the process, a microculture. The study showed the importance of recognizing the significance of all these different dimensions of the teachers' environment, whether moving in the worlds of theory, policy and/or practice.

A new conceptual approach to conversation is proposed. Conversation between participants of the OPLC was open-ended, collaborative, and focused on the process of interacting and exchanging ideas more than on the results or outcome of the activity. Therefore, the author defines conversation, as inclusive when playing out in a democratic ethos, displaying individuals' show of respect for the other, openness to inquiring into values, beliefs and assumptions, and accepting disagreements as opportunities (congeniality, heteroglossia, isonomy,) in order to engage in collaborative meaning making. The conversation was more than the sum of its parts and made connections across a wide variety of participants' experiences, beliefs, thoughts attitudes and behavior. Therefore, *conversation* in this thesis is a socio-constructivist concept useful to talk about learning and teaching as a social, emotional as well as cognitive activity. The conversation is an ever evolving, changing intertextual and

inter-contextual system, as the addressers and addressees change all the time. In online social spaces as OPLCs, members belong and form networks of interpersonal relationships that are continuously changing through the social interaction that takes place within the community. Discourses from within and from outside, from the present and other times and places may meet and sometimes clash. Thus, conversation involves learning when we are loyal to its principles and practices and perhaps its continuance is the only successful outcome a conversation may claim.

With such a definition, learning takes on meanings such as joining new communities and partaking in new conversations for new meaning making, thus shifting participants' relationship to others. Conversation stretched beyond dialogical structures, as a means for a teacher education process that educates for uncertainty, ambiguity and complexity and opens a path for new possibilities.

In terms of methodology, the theoretical and conceptual framework supported the construction of a multiphase method used to study the MDTs conversational patterns and moderation styles. Thus, the research offers valuable methodological insights into the analysis of asynchronous discussions threads, namely a methodology for discovering the structuration of the interactions, and the relation between these and possible benefits in terms of learning. Such devices used for analyzing the cohesion of interaction allowed, for example to unearth passive aggressive voices that otherwise would have been missed by the researcher. This methodology for the study of asynchronous dialogue in education settings constitutes a useful scientific contribution to the field of research on online learning, OPLCs, and to the conduct of conversational PLD.

Three research questions were developed for the research project, each with their 3 sub-questions. The features of collaboration in online professional learning communities (OPLC) revealed structuration of interactions, modes of regulation and moderation shaping the co-construction of knowledge and meaning making within the conversation. Aspects of motivation reflected in members' engagement in the OPLC shape how they engage initially and sustain their engagement over time. The study of the perceived transformation of pedagogical practice, through the example of talk about democratic forms of assessment, revealed how participants' engagement in the conversation supported change in the classroom. It was important to have these specific perspectives to draw out particular aspects of what the data was telling and to triangulate results in

order to strengthen the analysis and conclusions, which would not have been possible by observing and analyzing from only one perspective. Once these aspects were drawn out, separately to avoid missing information, the results were cross analyzed and the conclusions from each of these research questions were then merged to offer a comprehensive view of the many *variables that matter and affect such a set up as the OPLC*.

The results show different presences in the moderation (“teaching presence” and “peer presence”) leading to different patterns of conversation and particular characteristics of collaboration, deep or shallower cognitive processes and outcomes. Higher engagement and cohesion lead to better outcomes in terms of collaborative knowledge construction, but this is true under certain conditions that convey a *communication structure*. Members, with strong ties, access more depth of cognitive processing than participants with weak ties. The particular importance of strong ties and role centrality was revealed as a *network structure* that is essential in a context of education, and educators involved in eLearning will be attentive to what type of network patterns are unfolding in learning conversations. Also crucial, were careful scaffolding of knowledge and experiences that participants bring to the conversation, giving feedback, pacing and turn taking, and a good level of cohesion in the interactions.

Conversation as an open-ended process, opens a space for influences of diverse motivational factors. The study has shown the structural importance of preparedness and emotional wellbeing for learners to be ready to engage. Self and social regulation guides the process and progression of the conversation to answer participants needs and goals. The results shed a light on *eight factors* that seem to be important to understand participants’ engagement in the OPLC as a motivated activity. The ability to meet participants’ needs, with the support of effective moderator strategies, determine the extent to which participants remain active. Such are the factors that contribute to participants’ motivation to engage in online conversation in the OPLC: they are engaged through a call to their curiosity and creativity (open mind), their need for belonging and inclusion (open heart), their will to demonstrate confidence and persistence and the possibility for them to exercise autonomy and sense of control over attaining their personal and common goals (open will).

A microculture was progressively created as an *ethos structure* through the interactions among participants, their overall engagement in the conversation and developing sense of belonging to the community.

Participants acquire benefits such as developing their personal and professional identities backed by their “ideological becoming” and creating ‘next practices’ supported by others from a community to which they feel a sense of belonging. Finding common ground, the slow negotiation of a democratic ethos and value system, distributed leadership, the questioning of world views and perspectives on assumptions, attributions, beliefs, understandings, all contributed to the creation of the community microculture in which participants’ professional identities evolved and where they found personal and collective agency, paving the path for transformation and pedagogical change. The results point to an *activist stance*, embodied by educators who importantly invest in delving into questions linked to democracy in education: the terms intercultural sensitivity, social justice, practices mitigating the effects of poverty and discrimination, ethos and the relationship between policy and practice abound in the conversation.

The affordances that make learning ecologies effective for leaning, within this *ethos structure*, are those that support an *affective and identity structure* promoting emotional wellbeing based on a sense of belonging, trust and cohesiveness and developing the inner psychological conditions of learners who need to understand how they learn and how others learn, together in conversation. The maintenance of democratic principles is useful for supporting a *communication structure* based on in depth co-construction of knowledge and collaborative meaning-making, such as diversity of voices (heteroglossia), the maintenance of a safe learning space and a disposition for inquiry to keep conflict in check so that constructive controversies continue to feed into a learning process. Moderators cultivate cohesive interactions by nurturing a *network structure*, guiding pace, being attentive to patterns, and a *power structure* in which the quality of ties between participants, shared centrality and distributed leadership will be good enough to maintain inclusion and equal access to participation.

The analysis found scaffolding, feedback, optimal challenge to be essential and confirm previous research in the field. However, the particularity of the results is their demonstration of *the place and relevance of values in online collaborative asynchronous dialogue* which remains an understudied field. Appropriate ethical, value-laden interactions, and effective approaches and techniques for collaboration combined into the ecology of learning. Double-loop learning occurs because values are at the center of the conversation and participants are inclined to reflect on the

(mis)alignment between their value-system and their practice of teaching. The 'project', then, of developing one's professional identity through engagement in an OPLC is one of articulating and maintaining congruence between personal and professional values, moral purpose, and then "pushing through" the border between moral purpose and "on the ground" action, to create congruence between these. Such ethical backing is conducive not only to establishing community norms that promote inclusion, reciprocity, and mutual support for one another's learning, but also to a reflection about personal and professional identity in support of an education for democracy.

As this study entered its last phase, the worldwide pandemic of COVID-19 wreaked havoc on the world's education systems, imposing school closures in many countries. Abruptly, teachers were expected to bring their teaching online. Many teachers expressed their difficulties in adapting their teaching to online environments and their lack of preparedness and training to do this. The pandemic put the question of online learning once again to the forefront.

As well, the explosion of online learning offerings, with multiple conferences, webinars, learning meetings, platforms, zooms and discussion threads, showed that people are now in all aspects, moving towards learning online and this has great implications on conversation as an ecology of learning. It is therefore with a sense of timeliness and relevance that the work comes to its conclusion. What will learners have to acquire in terms of experience, competence to effectively learn through online encounters, dialogue, and conversation? What skills and dispositions will educators and facilitators need to develop to be able to engage learners in meaning making conversations in online settings - and help them sustain their engagement over time? Will these ecologies be democratic?

Some answers to these questions are provided in this thesis, and it will be a matter of getting the insights, reflection and results out to the designers, educators and learners, the researcher community and policymakers. The study showed how important principles for democratic formative assessment, considered essential by the community were integrated into its microculture providing guidance to practitioners, and critically examining mainstream neoliberal leanings in the field to point out institutional failings when it comes to integrating democratic concerns in the world of teaching and assessment. Thus, the OPLC appears as such a space that is socially produced and regulated, and holds conception,

interaction, and action that converge towards a *source* that empowers for paradigm shifts and guides transformation in participants' practice.

On this journey, I feel I have managed to weave my academic background, theoretical deliberations, and my considerable professional experience in the field. I conclude by looking at the potential that such an ecology of learning can bring to practice and policy in education by arguing that: inviting and engaging teachers in conversation about their practice and their values incite them to recognize their professional identity as evolving, and therefore opens up avenues for transformation and innovation. It is therefore important to consider professional conversation as a means to amplify teacher voice. Through the development of their activist stance, participating educators perceived that they could initiate deliberate actions to maximize the chance of *achieving their preferred futures and an education that reflects a different purpose: the purpose of creating democratic cultures that help young people become active participative citizens, a major condition that may sustain today's democracies*. The creation of a democratic microculture at the level of the OPLC and members interactions helped educators 'learn the trade' to in turn create such environments in classrooms and schools, and to incorporate education for democracy into the school curricula.

In the larger context of policymaking, such development of teacher voice contributes to debunking current, pervasive, and misconstrued images of teachers as simply agents of curricular delivery. This would give weight to a crucial recognition of teachers as empowered professionals ready to reshape an education practice and tackle the complexities of our time.





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## Appendix A – Samples 1 and 2 and list of participants

Here is provided the list of participants per sample. There are 66 participants in total. 49 participants engaged in the MDTs, of which eight participated in both. 41 participants are part of the conversations of sample 2, of which 15 also participated in at least one of the MDT of sample 1.

Sample 1		Sample 2					
MDT1		MDT2	ASSESSMENT				
PSEUDO	ORDER OF ENTRY	PSEUDO	ORDER OF ENTRY	#	PSEUDO	#	PSEUDO
Emmitt	Pax1	Mose	Pax1	1	Agata	22	Krhystyna
Chaya	Pax2	Eloy	Pax2	2	Agostinho	23	Laurent
Frank	Pax3	Barabara	Pax3	3	Alek	24	Leah
Doreen	Pax4	Léon	Pax4	4	Alexa	25	Lucile
Barabara	Pax5	Ivana	Pax5	5	Alexis	26	Luisa
Miriam	Pax6	Adelyte	Pax6	6	Anja	27	Maria
Charlotte	Pax7	Frank	Pax7	7	Barabara	28	Miriam
Ivana	Pax8	Sanja	Pax8	8	Beatrix	29	Mose
Nicole	Pax9	Marina	Pax9	9	Bernadette	30	Natasha
Natasha	Pax10	Nohemi	Pax10	10	Boica	31	Nohemi
Freja	Pax11	Cathi	Pax11	11	Camelia	32	Renata
Eloy	Pax12	Darlene	Pax12	12	Charlotte	33	Rita
Krhystyna	Pax13	Annetta	Pax13	13	Chaya	34	Ron
Mose	Pax14	Antoinette	Pax14	14	Christina	35	Snježana
Velina	Pax15	Gilma	Pax15	15	Daniel	36	Tarana
Brigit	Pax16	Lucile	Pax16	16	Dorothea	37	Tomas
Anja	Pax18	Bernadette	Pax17	17	Elise	38	Valeria
Agata	Pax19	Sharon	Pax18	18	Epifania	39	Vjolca
Epifania	Pax20	Will	Pax19	19	Erich	40	Vladimir
Kimi	Pax21	Chaya	Pax20	20	Eveline	41	Will
Matthew	Pax22	Dorjan	Pax21	21	Iva na		
Lucile	M1	Magda	Pax22				
		Snježana	Pax23				
		Darlana	M1				
		Charlotte	M2				
		Olivia	M3				

	Moderators
	Participants who engaged in both MDTs
	Participants who also engaged in at least one of the MDTs 1 & 2

Total number of participants is 66



## Appendix B – The multiphase method (sample 1)

Multiple theories were reviewed and the researcher extracted from these further elements for refining the coding, namely key elements were identified that allowed to describe the interactions observed in the data, and to infer from the data participants' engagement in the conversation as a motivated activity (Research perspective 2).

After this iterative process proved successful, it was then applied to the analysis of the types of cognitive processing found in the data (Research perspective 1). From this point on, the methodology for coding both for motivational factors and for cognitive processing activity were identical.

**Phase three. Clustering and finalizing the coding.** The outcomes of this review then informed a further modification of the initial independent coding. We were able to develop sub-categories that gave us insight relative to our research questions and by this we added to the 3 categories of relatedness, competence, and autonomy and supportive themes that Deci and Ryan contribute to the study of motivation. The author describes below how this was done.

We distinguished which units of data could fit into the Deci and Ryan model, from the units that did not fit and analysed these. We were able to find a common supportive theme (coding) for these units and were left with only very marginal data that was left out (only 2 units had no coding and we decided to omit them since they were quite insignificant and had no relevant content to our research).

At this stage of the method, we added to the data sample the 40 next postings of MDT1, to reach a total of 80 postings to code with our new categories. The coding system was then studied further: for example, we identified overlaps and consequently further defined the themes and categories accordingly to the findings concerning these overlaps. When coders disagreed on the coding, it was decided to take turns in making decisions.



Figure 1 The complex multiphase approaches to thematic analysis of sample 1

**Phase 4. Reliability of coding.** In one last iteration, of the process, it was decided to attribute 2 decisions of coding per unit of data (one posting). Both coders performed this coding on one third of the sample MDT1, which corresponds to 27 postings for 4 codes (two for coder A and 2 for coder B), therefore 108 decisions. At this stage, inter-coder reliability was deemed acceptable in terms of percent agreement, i.e. ratio between the number of codes that is agreed upon and the total number of codes (L. Rourke, Anderson, T., Garrison, D. R., & Archer, W., 2001). The percent agreement representing inter-coder reliability went from 17% in the first iteration of coding (phase one) to 83% in the final coding exercise (phase four). Both researchers then coded the entirety of the data, i.e. the transcripts of postings for both MDTs.

### Appendix xx – The multiphase method for the analysis of sample 1

Because of its importance to the study, the method is provided here in detail.

**Phase one. An inductive approach.** Transcripts of the asynchronous discussion threads were analysed: the data was copied from the platform into a word processing document and then each individual posting or data unit, copied as a single cell in a database. In line with the aim and research questions of the present study, the data was reviewed and coded for the analysis of the level of construction of knowledge (see table xx), and motivational factors in relation to participants' engagement knowledge (see table xx).

Coder A (the author) organised the database and trained coder 2 for 2 hours; she presented the tool to coder B, using one example posting of MDT1, chosen at random (46) to explain the coding procedure and specifically to make sure both coders shared the same understanding of the structure of the database and the task at hand. After working with this coding example for, motivational factors and for levels of cognitive processing (representing depth of knowledge construction), the transcripts were coded independently.

After familiarization with, and immersion in the data, reading and re-reading the postings, each coder independently coded the first selection of postings. A specific space in the database allowed each coder to enter arguments for each individual decision for the coding of one unit of data. As a result, a long list of words (coding) was generated to observe 1) possible indicators of motivation factors, 2) types of cognitive processing activities, 40 postings were a saturation point beyond which we learnt nothing new regarding the identification of coding (no new codes).

Consequently, the next step of phase one - comparing our coding - could start: we discussed and elaborated on the coding process. As it appeared, our analyses and arguments were in general similar, but our terminology was often dissimilar. Both coders agreed that a next step should permit us to reach a strong agreement on the terms used for coding, and clear definitions of these terms.

Several coding iterations followed during which differences in interpretations of the meaning of the codes, redundancy, usefulness and relevance were discussed between coders and the list of words (coding) was modified accordingly, sometimes resulting in clusters of coding and then re-coding. Observing that we have a large number of clusters, we then decided to reduce the categorization to a number of clusters in a way that 1) what was most meaningful to answer our research questions was kept, 2) the task was manageable (a maximum of 10 categories was deemed to be manageable).

**Phase two. A secondary theoretical approach.** We focused first on coding for motivational factors (research perspective 1). As explained in the theoretical section of this article, Deci and Ryan's SDT was a strong theoretical focus for our study of motivation, but the categories soon appeared to be too broad and not detailed enough, so we included several other works from the literature review 1) to learn something useful about the motivation of teachers to engage in the conversation and ii) to infer this motivation from the content and features of the conversation.

The findings of our inductive approach guided our theoretical work and oriented our review of other theoretical models that would help us bring out the most of our analysis of the discussion threads and be able to answer partly or in full our research questions. We used the initial coding as key words searched for articles describing analyses of asynchronous online discussions in diverse learning environments. First it is important to note that we found mostly publications about such studies done in schools and universities with pupils and students within courses, sanctioned by marks, but very few works on professional development, and none in a setting in which participation was not externally rewarded or sanctioned, such as the case of the Pestalozzi community of practice.

At this point the team of coders were ready to code both MDT1 and MDT2 and this did not create any difficulties, although the MDTs showed very different patterns of interactions. As a result, the team of 2 coders analysed 80 posts from MDT1 and 84 from MDT2; this sample represents the saturation point beyond which nothing new was inferred from the analysis relative to our research questions. Also, there is a large amount of data, and the researchers consider a sample of 80 postings to be adequate for the purpose of this research. It is important to note that this data set goes far beyond the sizes of data sets observed in most existing studies within the literature review since many reviewed studies were based on online courses and on far smaller data sets, often involving less than 40 postings between very few participants. It is therefore evident that participants in the Petralozzi community appear to be more prolific than students interacting within formal-education setting, within online courses.

The reader may obtain detailed information regarding the coding instrument, procedure and instruction from the author upon request. A sample of tables with coding are available in appendices (see appendix xx). The following three examples (Tables 1, 2, 3), further illustrate the coding method and process.

- Example 1:

Table 1 Example 1 demonstrating the coding iterations for the analysis of features of collaboration and the co-construction of knowledge within the conversation (Research perspective 1)

Posting #9 MDT1  
A perfect example of group work, each member performing their role, taking turns and showing respect to other members of the group. For me, the most challenging aspect of group work is getting students to realize their responsibility for their personal contribution

Personal Experience	Self-reflective	Linking ideas	Answer	Analysis	Analysing
<input type="checkbox"/> Coder 1	<input type="checkbox"/> Coder 2				

First phase: inductive approach coding from 2 coders

Practical utility	Perspective taking	Co-construction	Co-construction
Analysis of personal experience	Self-reflective, (challenge + for me)	Linking ideas, explaining further	Co-construction

Second phase: coding after theoretical approach

Coder 1  
 Coder 2

Third phase: from clustering and finalising coding, generating 5 categories

Co-construction	Perspective taking
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- Example 2:

Table 2 Example 2 demonstrating the coding iterations for the analysis of features of collaboration and the co-construction of knowledge within the conversation (Research perspective 1)

Posting #20 MDT1  
Dear --, and --, I like this activity very much! From the aspect of cooperative learning, should we select the micro-groups directly or randomly? How does the difference between the two ways of group forming matter from the aspect of the level of summarizing?  
• Can the micro-groups understand the written answers of the others on the post-it equally (equal access)?  
• In step 1 and 2 how can we provide equal access and participation? Can we structure their steps providing parallel interaction?  
• In step 3 how can we provide encouraging and constructive interdependence among the participants?  
I will try this activity during my workshop in Vienna as a dedicated PP facilitator in a Holocaust conference! Best wishes, --.

Question	Questioning	Prompt	Deep learning	Role-taking	Feedback
<input type="checkbox"/> Coder 1	<input type="checkbox"/> Coder 2				

First phase: inductive approach coding from 2 coders

Analysis	Type 2 questions	Co-construction	Co-construction
Explains principles	Distinguishing types of questions	Questioning towards deeper learning	Co-construction

Second phase: coding after theoretical approach

Coder 1  
 Coder 2

Third phase: from clustering and finalising coding, generating 9 categories

Analysis	Co-construction
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**Table 8 Example 3 demonstrating the coding iterations for the analysis of motivational factors shaping how members engage initially and sustain their engagement over time (RQ2)**

<p><b>Posting #20 MDT1</b></p> <p>Dear --. and --., I like this activity very much! From the aspect of cooperative learning, I would ask:</p> <ul style="list-style-type: none"> <li>• Should we select the micro-groups directly or randomly? How does the differences between the two ways of group forming matter from the aspect of the level of summarising?</li> <li>• Can the micro-groups understand the written answers of the others on the post-it equally (equal access)?</li> <li>• In step 4 and 5 how we can provide equal access and participation? Can we structure these steps providing parallel interaction?</li> <li>• In step 5 how we can provide encouraging and constructive interdependence among the participants?</li> </ul> <p>I will try this activity during my workshop in Vienna as a dedicated PP facilitator in a Holocaust conference! Best wishes,--.</p>																					
<p><u>First phase:</u> inductive approach coding from 2 coders</p> <table border="1"> <tr> <td>Competence</td> <td>Value-based</td> <td>Challenge</td> <td>Coming to an understanding</td> <td>Feedback</td> <td>Testing</td> </tr> </table> <p><input type="checkbox"/> Coder 1</p> <p><input type="checkbox"/> Coder 2</p> <p><u>Second phase:</u> coding after theoretical approach:</p> <table border="1"> <tr> <td>Competence</td> <td>Competence</td> <td>Autonomy</td> <td>Autonomy</td> </tr> <tr> <td colspan="2">Expertise, persistence, emergent leadership</td> <td colspan="2">Freedom to regulate, commitment to feedback</td> </tr> </table> <p><u>Third phase:</u> from clustering and finalizing coding, generating 8 categories</p> <table border="1"> <tr> <td>Persistence</td> <td>Accountability</td> </tr> </table>						Competence	Value-based	Challenge	Coming to an understanding	Feedback	Testing	Competence	Competence	Autonomy	Autonomy	Expertise, persistence, emergent leadership		Freedom to regulate, commitment to feedback		Persistence	Accountability
Competence	Value-based	Challenge	Coming to an understanding	Feedback	Testing																
Competence	Competence	Autonomy	Autonomy																		
Expertise, persistence, emergent leadership		Freedom to regulate, commitment to feedback																			
Persistence	Accountability																				