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A primer on emergence and design in learning communities

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Review article

A primer on emergence and design in learning communities: A conceptual orientation whose time has come

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ABSTRACT

In this conceptual paper, the notions of Communities of Practice, as representative (self-) emergent learning communities, and Communities of Learners, as representative (instructionally) designed learning communities, are examined in accordance with their original theoretical conceptions and specifications. By unravelling the conceptualizations of Communities of Practice and Communities of Learners through the lens of emergence and design in social learning structures, this paper aims to serve as a springboard for practitioners and researchers to systematically consider the aspects of emergence and design when “orchestrating” and/or supporting learning communities in or beyond educational settings. Instead of an a priori designation of a learning community notion to an existing community or a community to be, researchers and practitioners should consider the aspects of emergence and design by reflecting on at least the following questions: Is the learning community of interest emergent and self-organized or is it to be intentionally and prescriptively formed? And, what does this imply for research and practice?

1. Introduction

Various learning community notions have been introduced by theoreticians and researchers since the late 1970s to describe informal and formal social learning settings within which individuals share and co-construct knowledge, expertise, and learning experiences towards a shared enterprise (Barab & Duffy, 2012; Bielaczyc & Collins, 1999; Brown, 1992; Brown & Campione, 1990; Lave & Wenger, 1991; Scardamalia & Bereiter, 1994; Wenger, 1998a). Some learning community notions reported in the literature predominantly reflect (self-) emergent social structures, such as Communities of Practice (see Lave & Wenger, 1991; Wenger, 1998a), and some others predominantly reflect (instructionally) designed social structures, such as Communities of Learners (see Brown & Campione, 1990). Nevertheless, not all scholars seem to explicitly recognize this distinction, which is rooted in the theoretical underpinnings of these notions. In this conceptual paper, the notions of Communities of Practice, as representative (self-) emergent learning communities, and Communities of Learners, as representative (instructionally) designed learning communities, are examined in accordance with their original theoretical conceptions and specifications. By unravelling the conceptualizations of Communities of Practice and Communities of Learners through the lens of emergence and design in learning communities, this paper aims to serve as a springboard for practitioners and researchers to systematically consider the aspects of emergence and design when “orchestrating” and/or supporting learning communities (and prior to labelling them with whatever term) in or beyond educational settings.

1.1. A hint on the use and misuse of notions: Communities of Practice and Communities of Learners

Communities of Practice, hereafter referred to as CoPs, were originally coined as an analytical notion by Lave and Wenger (1991)

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to describe already existing phenomena in craft production within a situated learning framework. The notion was further developed by Wenger (1998a) highlighting the foundational principles of its meaning, structure, and value. The extensive use of the CoP notion by researchers and practitioners in different contexts—not always consistent with its foundational principles and initial conceptualization—has led to conflicting, misleading, and often superficial treatment of the notion on a theoretical and implementational level, resulting into either an instrumental interpretation of the notion used to design educational or organizational settings, or one-way-fit-all interpretations of the notion to refer to groups of learners or co-workers, and raising the issue of using or misusing technical language in vernacular ways (Hoadley, 2012; Hughes, 2007; Lea, 2005; Roth & Lee, 2006; Wenger, 2010; Wenger-Trayner, 2013). Hoadley (2012) critically approaches the alterations that the CoP notion has endured over the years shifting from a naturally occurring phenomenon to one that can be explicitly designed and fostered by external agents (e.g., teachers, community organizers) along with a shift from the anthropological and social orientation of CoPs to tangible manifestations of CoPs via technological platforms designed to foster CoPs in explicit ways based on external rules and representations. Hoadley (2012) further underscores the attention that educators and researchers/designers should pay to the different assumptions and implications of explanatory theories when designing learning environments. Wenger (2010) also reflected on the status of the CoP notion, realizing that it is out of control, since practitioners and researchers have been using it without always taking into consideration its theoretical framework and underlying principles. Based on these conceptual alarms set by researchers in the field of CoP studies, the CoP notion in this paper is discussed in close alignment to its original coinage by Lave and Wenger (1991) and Wenger (1998a).

Apart from CoPs, the notion of Communities of Learners, hereafter referred to as CoLs, has been also widely used by educators and researchers to refer to communities that aim for the advancement of knowledge and learning how to learn on the classroom level in educational settings (Bielaczyc, Kapur, & Collins, 2013; Brown, 1992; Brown & Campione, 1990). Its initial conception by Brown and Campione (1990) aimed to describe the practical implementation of a set of theoretical principles in classrooms, based upon Vygotskian premises (1930–1934/1978) and Dewey's (1897) experiential learning, towards a reform movement in education through an innovative classroom design (Brown & Campione, 1994). CoLs are associated with a shift of the students' role in schools from passive knowledge recipients to active co-constructors of knowledge, while being responsible for their own learning and its design (Brown, 1992). Therefore, CoLs have been used as an educational technique to enhance knowledge sharing and distribution of expertise and responsibility among students and teachers aiming to build a collective learning culture within which students respect and value each other's contributions (Bielaczyc et al., 2013; Brown & Campione, 1994). To avoid any conceptual distortion of the CoL notion, it is approached in close alignment to its original coinage by Brown and Campione (1990).

1.2. A hint on emergence and design in CoPs and CoLs

According to the foundational theoretical principles of CoP and CoL, the relevance that has been attached to the aspects of emergence and design varies across these two learning community notions. CoPs are built on the idea of emergence, self-generation, self-directedness and voluntary participation, drawing their energy and motivation from within the community itself (Janson, Howard, & Schoenberger-Orgad, 2004), whereas CoLs are designed and facilitated by educators, researchers or a combination of these, and are typically applied in a classroom setting with fixed participants (i.e., students and teachers/adults) and pre-defined pedagogical objectives based on the curriculum (Rogoff, 1994). In order to trace the elements of emergence and design in these two learning community notions, the shared theoretical underpinnings of CoPs and CoLs are reviewed in relation to their common ground as well as their differences in relation to emergence and design.

2. Sociocultural approaches to learning: situated learning and situated cognition

Sociological perspectives that aim to understand human behavior within its surrounding context(s) informed and inspired cultural-historical psychologist Vygotsky (1930–1934/1978), who viewed human development as embedded “in” the social context (i.e., cultural and socio-institutional), constituting the individual as conceptually indistinguishable from the social context, whereas their in-between boundaries are blurred. Vygotsky's work (1930–1934/1978) had implications in views of learning, conceiving it as a dynamic process of interdependence between socially shared activities and internalized processes, with the former being transformed into the latter within concrete sociocultural and historical settings (John-Steiner & Mahn, 1996).

Since the 1970s, Vygotskian sociocultural approaches to learning have received considerable attention by anthropologists and educational researchers and have formed a multifaceted framework to explore alternative ways of understanding learning (John-Steiner & Mahn, 1996). Nevertheless, it should be highlighted that Vygotsky's work has not been used as a panacea for all learning situations, but instead as an inclusive frame of reference leading into “a complex of related but heterogeneous proposals” (Rogoff, Radziszewska, & Masiello, 1995, p. 125; for similar arguments see Lave, 1991).

Situated learning (Lave & Wenger, 1991) and situated cognition (Brown, Collins, & Duguid, 1989) are sociocultural approaches to learning that have been developed within the framework of sociocultural theory and reflect anthropological and pedagogical perspectives on learning, respectively. Both situated learning and situated cognition emphasize that learning is a socially situated practice and that learning, thinking, and knowing constitute relations among individuals, who engage in authentic collective activities, and arise from the surrounding sociocultural setting (Brown et al., 1989; Lave, 1988; Lave & Wenger, 1991). Yet, they differ in the way they can be observed or implemented in learning settings.

2.1. Situated learning: when looking at non-institutionalized learning

Recognition of the value of informal, experience-based learning in everyday activities, as occurring in various forms of apprenticeship in craft production, has gradually led to the development of a situated perspective on learning referred to as *situated learning* (Lave & Wenger, 1991). Situated learning reframes learning in social, cultural and historical terms and views it as “a social phenomenon constituted in the experienced, lived-in world, through legitimate peripheral participation in ongoing social practice” (Lave, 1991, p. 64). Situated learning focuses on learning as participation in practices in informal learning settings and not on formal learning settings, such as schools (Lea, 2005). The term situated does not merely imply the “location” of learning in terms of time and space, but that “learning is an integral part of generative social practice in the lived-in world” (Lave & Wenger, 1991, p. 35). A situated learning perspective underlines that mind, culture, history, and the social world are interconstituted and interwoven elements (Lave, 1991). This perspective clearly exemplifies the positioning of situated learning in the sociocultural theoretical framework.

Lave (1991) further elaborates on situated learning by stating that the process of engaging in social practice and developing knowledgeable skills constitutes a process of developing identities through Legitimate Peripheral Participation (LPP) in ongoing situated social practices. LPP refers to the process by which peripheral members/newcomers move from peripherality to full participation (i.e., core members/oldtimers) in a social practice through “increasingly centripetal participation, which depends on legitimate access to ongoing community practice” (Lave, 1991, p. 68; Lave & Wenger, 1991). Peripherality and full participation do not imply linear processes with physical or identifiable boundaries. Instead, peripherality implies the various ways and degrees of participation and engagement in a social practice, often associated with members' learning trajectories, changing identities and membership formation, and full participation implies the development of a constantly changing understanding of the social practice that leads to the development of an identity as a practitioner (Lave, 1991; Lave & Wenger, 1991). An interdependent relationship exists between peripheral members/newcomers and core members/oldtimers, since the former learn from the latter and the latter needs the former for the continuity of social practice (Lave, 1991; Lave & Wenger, 1991).

Both situated learning and LPP have been conceptually developed in non-institutionalized learning settings (e.g., Yucatec midwives, tailors, non-drinking alcoholics). Lave (1991) critically approaches institutionalized learning settings (i.e., workplace and schools) and their relation to situated learning and LPP by arguing that “when official channels offer only possibilities to participate in institutionally mandated forms of commoditized activity, genuine participation, membership, and legitimate access to ongoing practice – of a practice considered worthy of the name – are rare” (p. 79). Lave (1991) further highlights that “schools and school-like workplace educational enterprises accord knowledgeable skill a reified existence, turning it into something to be ‘acquired’ and its transmission into an institutional motive [which leads to the] generation of negative identities and misrecognized or institutionally disapproved interstitial communities of practice” (p. 79). Regarding the concept of LPP and its role in educational practices, Lave and Wenger (1991) specifically underscore that

(...) legitimate peripheral participation is not itself an educational form, much less a pedagogical strategy or a teaching technique (...) this view makes a fundamental distinction between learning and intentional instruction (...) this is very different from attributing a prescriptive value to the concept of legitimate peripheral participation and from proposing ways of “implementing” or “operationalizing” it for educational purposes. (pp. 40–41)

This quote depicts that LPP, as a constituent characteristic of situated learning, was not meant to be operationalized as an instructional approach with pre-defined educational purposes. Brown and Duguid (1991) have also emphasized that LPP “is not a method of education. It is an analytical category or tool for understanding learning across different methods, different historical periods, and different social and physical environments. It attempts to account for learning, not teaching or instruction” (p. 48).

2.2. Situated cognition: when looking at learning and instruction

The emergence and spread of sociocultural theory in education led to a critical reaction to assumptions of knowledge as a substance independent of the situations, activity and the context in which it is learned and used, and of school as the medium of transfer of this substance, implying a need to holistically rethink education (Brown et al., 1989). Situated cognition, proposed by Brown et al. (1989), implies that learning and cognition are situated in and inseparable from the situations, activities and context within which they occur. Students frequently have to use disciplinary or domain-specific tools without being acquainted with the culture of the intended discipline or domain, which in turn does not allow them to participate in any other enculturation process than that of schooling enculturation (Brown et al., 1989). However, meaningful learning can only occur when embedded in the social context within which it is used to “(...) enculturate students into authentic practices through activity and social interaction” (Brown et al., 1989, p. 37).

Within the context of situated cognition, authentic activities refer to the socially constructed and negotiated activities within a specific practice and its underlying culture (Brown et al., 1989). From a situated cognition perspective, activities such as observation and coaching involved in apprenticeship learning (Lave, 1988) and in reciprocal teaching (Palincsar & Brown, 1984) are considered to be authentic activities, since these are the typical activities of authentic practitioners within a domain, practice or discipline. The criticism of traditional schooling by Brown et al. (1989) highlights that instead of authentic activities as represented in the authentic cultures within which these activities originally occur, students in traditional classroom settings typically participate in “ersatz activities” (Brown et al., 1989, p. 34). Ersatz activities refer to intended authentic activities which due to their integration in the classroom context and school culture are converted into classroom tasks distanced from their originating and authentic contexts

Table 1

Differentiation between situated learning and situated cognition.

	Situated learning	Situated cognition
Representation	Rethinking non-institutionalized learning	Reforming teaching and learning in schools
Objectives	Authentic demands	Pedagogical concerns
Engagement	LPP	Cognitive apprenticeship
Goal	Full participation	Knowledge and skills development
Situatedness	Contextualized knowledge for application in situ	Decontextualized knowledge for application across settings

Note. LPP = legitimate peripheral participation.

and their accompanying features (Brown et al., 1989).

Situated cognition can be translated into educational practice through the instructional approach of cognitive apprenticeship, which represents a rethinking of teaching and learning in schools (Collins, Brown, & Newman, 1989). Cognitive apprenticeship aims to foster learning in a domain by promoting students' knowledge acquisition and development of complex skills through the use of cognitive tools in authentic activities (Brown et al., 1989; Collins et al., 1989). Cognitive apprenticeship heavily borrowed, extended but also rejected several aspects of traditional apprenticeship learning and situated learning. In particular, cognitive apprenticeship borrowed the traditional apprenticeship methods of observing, coaching and practice, and transferred them into instruction. More specifically, these instructional methods are referred to as modeling (i.e., developing a conceptual model of the task), scaffolding (i.e., providing support in the form of reminders and help) and fading (i.e., providing only limited support, refinements and feedback) (Collins et al., 1989). The aim of these instructional methods is to foster students' and teachers' awareness of cognitive and meta-cognitive processes and support students' observation, enactment and practice of those processes (Collins et al., 1989). However, cognitive apprenticeship differs from traditional apprenticeship in terms of problems and tasks being addressed, since the former underlies pedagogical objectives and the latter authentic demands. In addition, cognitive apprenticeship highlights the importance of decontextualized knowledge due to its usefulness in various settings, which seems to be in contradiction with the highly contextualized knowledge underlined in traditional apprenticeship (Collins et al., 1989).

2.3. Non-interchangeable notions: representation, situatedness, and implication

Despite their common ground in sociocultural theory and in apprenticeship learning settings, situated learning as conceptualized by Lave (1991) and Lave and Wenger (1991), and situated cognition as conceptualized by Brown et al. (1989) and Collins et al. (1989), should not be treated interchangeably. The preceding analysis of the two situated approaches to learning revealed a collection of indicative, yet distinctive, aspects (see Table 1).

In terms of representation, situated learning represents a rethinking of the importance and value of non-institutionalized learning (i.e., learning as an ongoing process in the course of our everyday lives in the world in which we live), whereas situated cognition represents a reform of educational practice within institutionalized learning (i.e., schools and classrooms). Regarding the objectives implied by each perspective, situated learning refers to objectives emerging from authentic learning demands within informal learning situations, whereas situated cognition refers to objectives defined by pedagogical concerns associated with an educational reform. In terms of the engagement process in the learning situation, situated learning occurs through LPP with the goal to achieve full participation in a social practice, whereas situated cognition is reflected through instructional approaches such as cognitive apprenticeship leading to the development of knowledge and skills through the use of the physical and social context. The term situatedness here refers to individuals' involvement in a social context comprised of materialist and symbolic dimensions along with social processes embedded in this context (Vannini, 2008, p. 815). Situatedness is dynamic and in constant flux having different—potentially multiple—representations to individuals depending on their definition(s) of the situation. For example, although teachers and students might have a shared understanding of the classroom context, their individual perspectives, objectives, values, identities and orientations to the context shape in turn different experiences, feelings and representations (e.g., classroom as fun, classroom as imposition, classroom as struggle) (Vannini, 2008, p. 815). The aspect of situatedness is positioned differently in each perspective. From a situated learning perspective, knowledge and meaning is contextualized for use within the setting in which learning occurs, whereas from a situated cognition perspective knowledge is viewed as decontextualized for application across settings. Considering that situated learning and situated cognition constitute the theoretical frameworks within which the notions of CoPs and CoLs, respectively, are grounded, both learning community notions are subsequently reviewed in close alignment to their frameworks.

3. Representative “situated” community notions: Communities of Practice and Communities of Learners

Over the past two decades, the notions of CoPs and CoLs have dominated research on learning communities in educational and workplace settings. The notions CoPs and CoLs are reviewed given (a) their historical contribution to the learning communities research, (c) their expanded theoretical specifications in relation to their coinage, and (c) their representative diversity in aspects of emergence and design. Despite the vast amount of research that focuses on CoPs and CoLs, only few contributions treat them in relation to their theoretical specifications and their representing learning theory frameworks, showing that their slightly different theoretical foundations have slipped out of focus (e.g., Hoadley, 2012). Considering this limitation in the literature, the

mentioned learning community notions are reviewed in relation to their underlying degree of emergence and design in accordance with their theoretical specifications, as outlined by their pioneers, and their representing learning theory frameworks.

3.1. Communities of Practice

Within the framework of sociocultural theory and situated learning, Lave and Wenger (1991) coined the multifaceted and analytical notion of CoP to refer to “(...) a set of relations among persons, activity and the world, over time and in relation with other tangential and overlapping communities of practice” (p. 98). In other words, a CoP is formed by individuals who share a common interest in a domain of human endeavor and mutually engage in a social learning process, to collectively solve problems and co-construct knowledge over a period of time (Wenger, 1998a). A theoretical analysis of the CoP notion was further developed by Wenger (1998a) and Wenger, McDermott, and Snyder (2002) highlighting the foundational principles of a CoP's meaning, structure and value. More recent works by Wenger (2010) and Wenger-Trayner and Wenger-Trayner (2015) have extended the notion of CoPs to refer to *social learning systems* and *landscapes of practice* to highlight aspects of emergence, self-organization, and complex relationships.

CoPs share a common structural model based on three elements: *domain*, *community* and *practice* (Wenger et al., 2002). *Domain* refers to a shared domain of interest that matters to members (Wenger, 1998a) reflecting “a set of issues, challenges and passions through which members recognize each other as learning partners” (Wenger, White, & Smith, 2009, p. 5). Membership is related to members' dedication to their shared domain along with their communal competence that diversifies CoP members from others—without necessarily requiring high field-specific expertise and irrespective of externals' recognition of the CoP endeavor as valuable (Wenger, 1998a). *Community* is evident when individuals engage in joint activities and discussions, help each other, and share information, while building relationships that enable members to interact and learn from each other (Wenger, 1998a). Although interactions are essential in the constitution of a CoP, working together on a consecutive basis is not implied (Wenger, 1998a). *Practice* refers to a shared repertoire of resources, such as experiences, tools and ways of addressing issues (Wenger, 1998a). As Wenger et al. (2002) highlight, the characterization of any group as a CoP should be based on a close examination of the interplay among these three elements. Hence, a CoP should not be conceptualized merely as a community of people with common interests, but rather as a community whose members gradually and more or less self-consciously develop a shared practice within a domain of shared interest (Wenger, 1998a; Wenger et al., 2002).

Originally, the CoP notion was coined to differentiate “practice from prescription (in particular educational, institutional, or managerial prescriptions) and to view learning as inherent in practice rather than reified in an educational setting” (Wenger, 2010, p. 192). Yet, even Wenger (1998a) and Wenger et al. (2002) modified the original conceptualization over the years by integrating organizational aspects, including leadership and “design”, that were not initially included as part of the original coinage (Lea, 2005). However, even after Wenger et al.'s (2002) latest modification of the CoP notion, no direct implications of CoPs as educational or instructional approaches can be assumed without distorting the notion (Lea, 2005; Wenger, 2010), which in turn calls for a closer examination of aspects of emergence and design in CoPs.

3.1.1. Emergence and design in CoPs

Within the framework of CoPs, as coined by Lave and Wenger (1991), the community construct does not necessarily imply “co-presence, a well-defined, identifiable group, or socially visible boundaries” (Lave & Wenger, 1991, p. 98). A CoP is conceived as a fundamentally self-generated and self-organized system, an organism or an autonomous group that needs time to form itself, exists for the benefit of its members, and may continue its existence even after the completion of a project or task (Lave & Wenger, 1991; Wenger, 1998a, 1998b; Wenger et al., 2002). Therefore, a CoP differentiates itself from other sets of people who operate in groups, because it neither starts its existence and its action the exact moment that a task or project starts, nor disappears at the end of it (Wenger, 1998a). As Kirschner and Lai (2007) explain, CoPs are not things, but processes in which social learning takes place; they are as diverse as the situations within which they emerge (Wenger & Snyder, 2000). Along the same lines, Brown and Duguid (1991) refer to CoPs within organizational settings as non-canonical, interpenetrative and emergent, since “their shape and membership emerges in the process of activity, as opposed to being created to carry out a task” (p. 49).

Since learning occurs in the sphere of experience, neither CoPs, learning, nor practice, can be designed in the sense of producing reified organizational units or being implemented as a pedagogical technique. Lave and Wenger (1991) argue for the value of a learning curriculum—as a main characteristic of a CoP—which constitutes “a field of learning resources in everyday practice viewed from the perspective of learners”, as opposed to a teaching curriculum, which “is constructed for the instruction of newcomers” (p. 97). Wenger (1998a) draws our attention to the role of design in CoPs by stating that

communities of practice (...) cannot be legislated into existence or defined by decree. They can be recognized, supported, encouraged, and nurtured, but they are not reified, designable units. (p. 229)

The aspect of “design” within the CoP notion refers to a “systematic, planned and reflexive colonization of time and space in the service of undertaking” (Wenger, 1998a, pp. 228–229) and not to any institutionalization of the community. This is further clarified by Wenger et al. (2002) stating that “designing them [CoPs] is more a matter of shepherding their evolution than creating them from scratch. Design elements should be catalysts for a community's natural evolution” (p. 51). Contrary to the aspects of creation and design that accompany groups, CoPs are accompanied by aspects of detection and support, since they are emergent or existing social constellations (Brown & Duguid, 1991). Therefore, a CoP cannot be “designed” from scratch to serve purposes of an effective learning environment, since it either exists as a learning environment that might be effective for its members and continues its existence or it is

not effective for its members and it fades away.

CoPs are not only informal, but also unintentional, unstructured and unplanned formations implying that any structural or institutional intervention in CoPs will meet CoPs' resistance to institutionalization, intervention, or supervision due to their organic nature (Wenger, 1998a; Wenger & Snyder, 2000). However, as Wenger (2010) explains, "(...) it is indeed difficult to find the right balance between enough formality to give them legitimacy in the organization and enough informality to let them be peer-oriented, self-governed learning partnerships" (p. 193). In contrast to self-generated and self-developed CoPs, the emergence and design of CoLs in educational settings underlies external intentionality and particular objectives.

3.2. Communities of Learners

Based upon the premises of sociocultural theory and situated cognition, the notion of Communities of Learners (CoLs) emerged in the early 1990s as part of the *Fostering Communities of Learners* (FCL) project by Brown and Campione (1990). The FCL project—originating in a reading-comprehension program (Palincsar & Brown, 1984)—aimed to transform traditional classrooms into innovative learning environments that foster the distribution of expertise among adults and children underlying a need for educational reform (Brown, 1992, 1994; Brown & Campione, 1996). In particular, the FCL project envisioned the conversion of classrooms into "learning communities – communities in which each participant makes contributions to the emergent understanding of all members, despite having unequal knowledge concerning the topic under study" (Palincsar, Brown, & Campione, 1993, p. 43).

The main underlying learning principles of CoLs, as described within Brown and Campione's (1990) FCL project, were outlined by Bruner (1996) as (a) agency, which fosters learners' control over their own thinking, (b) reflection, which fosters learners' sense-making and understanding of their learning, (c) collaboration, which fosters resource sharing between learners and teachers, and (d) a culture of learning, constructing, negotiating, sharing and producing. Brown (1997) further complements these principles by adding the principle of (e) deep disciplinary content, which helps students to advance their reasoning in scientific issues, and (f) developmental corridors, which fosters the development of disciplinary understanding and knowledge.

Bielaczyc et al. (2013) treat the CoL notion more inclusively, with references to FCL as well as to Knowledge-Building Communities, and outline the constituent characteristics of CoLs as including (a) diversity of expertise among participants through valued contributions, (b) a shared objective of developing collective knowledge and skills over time, (c) learning how to learn, and (d) mechanisms for sharing. In their view, the main objective of a CoL is to promote a learning culture, in which individuals and the community as a whole are learning how to learn and develop disciplinary knowledge, while respecting and valuing different contributions by its members (Bielaczyc et al., 2013).

3.2.1. Emergence and design in CoLs

CoLs have been used as a community-based instructional approach by educators who aim to foster student-centered learning, therefore CoL is associated with a shift in the learners' role in schools from passive knowledge recipients to active co-constructors of knowledge being responsible for their own learning (Brown, 1992). Directed, designed or intentional CoLs by educators often start with a course, operate on the classroom level, assume that the classroom is one community, and the participants are students whose individual achievement is evaluated and rewarded and prioritized over the collective success (Barab, Kling, & Gray, 2004; Roth & Lee, 2006).

One of the main design components employed in the FCL project is the instructional technique of *reciprocal teaching* (Brown, 1997; Brown & Campione, 1990, 1994; Palincsar et al., 1993). Reciprocal teaching refers to a guided practice led by teachers, parents, peers, or senior students that aims to enhance the visibility of mental activity involved in the understanding of a shared text or other materials with the application of four "comprehension-monitoring" strategies (Brown, 1994; Palincsar et al., 1993). These strategies are discussion-based and include the exchange of turns among leaders and students in (a) asking questions to stimulate discussion, (b) summarizing to identify the main discussion points, (c) opportunistic clarifications for restoring any necessary meaning, and (d) predicting upcoming content.

Within CoLs, students are "partially responsible for designing their own curriculum" (Brown, 1994, p. 7) like researchers and teachers, who enact roles typical of a research community. However, CoLs are supported and guided by a teacher-facilitator or other adults (Brown, 1992). Therefore, in most CoLs the teacher organizes and supports activities with a student-orientation, instead of directing activities (Bielaczyc & Collins, 1999). In particular, reciprocal teaching scaffolds students' engagement and progressive participation in discussion by explaining, modeling, supporting, and providing feedback until the students reach the stage of internalization of the discussion in which they were engaged and fully participating (Palincsar et al., 1993).

However, the implementation of the CoL notion by educators in classrooms has been a challenging process, often misrepresenting the notion itself when employed by educators "(...) as a slogan rather than as an analytical category" (Barab et al., 2004, p. 3). Challenges might arise in the process of balancing the relationship between teachers and students' roles to create a community atmosphere, in teachers' transition from traditional instructors to teacher-facilitators, and in promoting a shared belonging among students within a classroom setting.

Despite differences between the notions of CoP and CoL, their commonalities have contributed to theoretical and implementational confusion. In an attempt to clarify theoretical confusion related to CoP, Roth and Lee (2006) claim that "(...) the notion of community in the context of classrooms is inappropriate or even false—unless the students concretely realize the collectively defined motive and have some choice and control in the matters, they are not constitutive of the dialectical unit relating individual and collective (...)" (p. 32). Indeed, it is misleading to consider by definition whole classrooms as CoPs, because the notion of CoP entails emerging elements and not pre-defined, pre-designed or pre-selected attributes to students in classrooms. Hence, although CoPs may

Table 2
Constituent elements of learning communities: a comparative view.

	Communities of Practice	Community of Learners
Members	Practitioners/Just Plain Folks (JPFs)	Students and teachers/adults
Setting	Apprenticeship/organizational	Curricular/pedagogical
Objectives	Emergent	Pre-defined
Space	Public and private	Public
Facilitation	Oldtimer coordinator	Teacher/adult facilitator
Participation	Voluntary	Pre-determined
Responsibilities	Distributed between members	Guided distribution by teacher/adult facilitator
Formation	Self-formation in pre-existing networks	Pre-defined formation
Structure	Self-structure	Pre-defined
Lifespan	Open	Course-based

exist within the context of the classroom or the broader educational setting—in the same way that they may exist in any other social context—it is more likely that CoPs are formed ad hoc outside the classroom or school, or within the classroom or school by students' own initiatives (Lave, 1991).

In contrast, CoLs have been used in educational settings as a reformative instructional approach by educators to foster students' control and responsibility in collectively developing knowledge through sharing contributions, which are respected and valued by others (Rogoff, 1994). Nevertheless, CoLs are not emergent structures in the same way in which CoPs are, but intentionally and instructionally defined and designed ones, without excluding though that emergent (sub-)structures, interactions and or relational patterns might be formed even in an intentionally designed CoL, since CoLs are still social constellations that involve individuals, who are encouraged to interact among themselves and with the teacher (or others).

3.3. In closing

In closing, to briefly illustrate and summarize most of the specifics on which the CoP and CoL notions conceptually differ, so that researchers and practitioners could use as a conceptual rubric, we summarized the aspects of emergence and design in CoPs and CoLs across a number of constituent elements, namely (1) members, (2) setting, (3) objectives, (4) space, (5) facilitation, (6) participation, (7) responsibilities, (8) formation, (9) structure, and (10) lifespan (see Table 2).

With this conceptual contribution, we have gone some way towards enhancing our understanding of the aspects of emergence and design that are attached to the dominant learning community notions of CoP and CoL. This paper provides a springboard for practitioners and researchers to systematically consider the aspects of emergence and design when “orchestrating” and/or supporting learning communities in educational settings. Instead of an a priori designation of a learning community notion to an existing community or a community to be, researchers and practitioners should investigate the aspects of emergence and design by reflecting on or addressing at least the following questions: (1) Is the learning community of interest emergent and self-organized or is it to be intentionally and prescriptively formed? (2) Taking into consideration aspects of emergence and design, how can practitioners/researchers facilitate the learning communities to take the most value out of themselves prior to intervening as external agents?

This story does not end here, as there is much theoretical and empirical work still to be done. To begin with, more learning community notions should be analyzed from an emergence-design perspective to draw a comprehensive picture across learning community notions. In addition to any further conceptual analysis, empirical investigations on design decisions and facilitation strategies in emergent and designed learning community notions could shed light on the implications of such a conceptual awareness in and for the communities in situ.

Declarations of interest

None.

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