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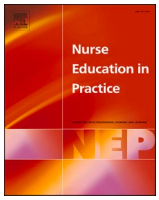

Learning community participation: A valuable opportunity for transferring actions and behaviors within the nursing learning and working context?

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ABSTRACT

Aim/objective: Indicating how community participation transfers to application within the nursing learning and working context.
Background: Preparing nurses to drive advances in health care requires the integration of working and learning. Learning communities are therefore recommended to connect students, educational programs and health care organizations.
Design: A multiple case study with three hospital learning communities was conducted during the 2019–2020 academic year, partly during the COVID-19 pandemic.
Methods: The main data were collected by conducting three group interviews and 21 individual interviews with members. A hybrid thematic analysis approach was used.
Results: Seven themes originated from the analysis: *learning community features, learning community preconditions, learning community needs, impetus, application, research context and meaningfulness*. Individual members applied acquired knowledge, skills and attitudes later or in other situations. Depending on the case, collective application manifested as inventing, consulting or reusing, but this seemed less sustainable in the research context at the time.
Conclusions: Application within the nursing learning and working context occurs and is sustained at the individual level even when there are no organized learning community sessions in times of crisis. Framing and facilitators' support can be used to encourage collective application.

1. Introduction

One of the ten key actions formulated in the State of the World's Nursing report is to provide education and training programs that produce nurses who drive advances in health care. Nurses should be prepared and maximize their competencies (e.g., leadership, technology, research in practice) to address complex care and work interprofessionally with others. The COVID-19 pandemic highlighted more than ever the need for nurses to take full advantage of their education and training. This includes ensuring the availability of clinical internships to attract a diverse student population and the alignment of the curriculum with national and global issues to appropriately equip nurses (World Health Organization, 2020). The same action applies to the Dutch nursing profession, which demands the delivery of complex care and interprofessional collaboration (Verkenningscommissie hbo gezondheidszorg, 2013).

The Netherlands has therefore developed a nursing education profile focusing explicitly on sustainable integration with the working field to create congruence with the curriculum and advance health care. It is therefore recommended that internships be linked to learning communities (LCs) because LCs connect learning and working in ways that benefit students, educational programs and health care organizations (Hanze University of Applied Sciences Groningen, 2018; Verkenningscommissie hbo gezondheidszorg, 2013).

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1.1. Transfer of community participation to application

Previously found literature in the nursing field describes various motives for introducing LCs where health care professionals, nursing students and/or educators participate, for example, to promote health care innovations (Carpenter et al., 2018), facilitate an academic and clinical learning environment (Ebert et al., 2019) and increase the recruitment and retention of practitioners (Bassi and Polifroni, 2005). Prior to this study, specific research has been conducted on hospital LCs comprising clinical nurses, nursing students and lecturers organized off-campus, exploring the value produced by community activities and interactions (Heemskerk et al., 2021) and the potential for learning among LC members (Heemskerk et al., 2020). However, these recent studies have been restricted to learning within the community space itself and related gatherings. It remains unclear how these members actually apply their community experiences and learning into their own practice.

2. Background

2.1. Learning community, participation and value creation

Originally, LCs originated in the educational domain and were defined specifically in higher education as "an intentionally developed community that will promote and maximize learning" (Lenning and Ebbers, 1999, p. 22). According to Lenning and Ebbers, an LC concerns a consciously structured student group, faculty group or college and university and is generally considered an umbrella term under which various community forms can be categorized. This approach has been applied in a variety of (sometimes overlapping) contexts with different purposes (Hod et al., 2018; Schipper et al., 2022).

One way to contribute to the knowledge valorization of LCs is to study the value created by community participation. Previous studies in non-health care contexts (e.g., Bertram et al., 2017; Booth and Kellogg, 2015; Triste et al., 2018) have used the value creation framework of Wenger et al. (2011) developed to promote and assess value creation. This framework was derived from Kirkpatrick's model (in Wenger et al., 2011, p. 19) and has been further developed by Wenger and colleagues in recent years (i.e., Wenger-Trayner et al., 2019; Wenger-Trayner and Wenger-Trayner, 2020).

2.2. Value creation framework and applied value

One of the five values from Wenger et al. (2011) value creation framework is *applied value*. In addition to defining and elaborating the other values (i.e., immediate value, potential value, realized value and reframing value), Wenger et al. described applied value as follows: "Looking at applied value means identifying the ways practice has changed in the process of leveraging knowledge capital" (p. 21). This knowledge capital emerges from community activities and interactions whose value lies in their potential (potential value), for example, confidence or an idea. In this sense, applied value is identified as applying potential value to make a change in practice. Additionally, applied value can also be identified as applying oneself to take on challenges, situations or opportunities to make a difference (Wenger-Trayner and Wenger-Trayner, 2020).

Applied value can be recognized by typical indicators (e.g., implementation of advice/solutions/insights) and potential data sources (e.g., self-reports) (Wenger et al., 2011) and can be brought about with helpful activities that stem from potential value or emerge from practice (e.g., struggling with a challenge and persevering) (Wenger-Trayner and Wenger-Trayner, 2020). Moreover, the value creation framework offers guiding questions that can be used for reflection to collect different voices and perspectives of members and stakeholders concerning the value created, such as by asking, "Where did I apply a skill I acquired?" (Wenger et al., 2011, p. 23).

3. Methods

Given the study objective of indicating how community participation transfers to application within the nursing learning and working context, several aspects of this value creation framework associated with applied value were useful in answering the following research question: According to members, what actions and behaviors in the nursing learning and working context reflect their community participation?

3.1. Research design

A multiple case study approach was used because it involves a qualitative method and multiple cases, where a contemporary phenomenon in its real-world context is explored over time through multiple sources of information and detailed, in-depth data collection (Creswell and Poth, 2018; Yin, 2014). For this study, three representative LCs (cases) were selected in one general hospital to develop a robust description of how community participation transfers to application.

3.2. Setting and cases

The selected LCs were in three hospital wards: pulmonology, surgery and gastroenterology. Each ward had designated one section as a care innovation unit (CIU) to which an LC was associated. A CIU is an education model where qualified health care professionals, multiple students and nursing lecturers work intensively together to combine care, education, research and innovation (Frost and Snoeren, 2010; Snoeren and Frost, 2011; Snoeren et al., 2016). Each CIU simultaneously provides multiple internship positions for nursing students for periods of 20–40 weeks. The clinical nurses affiliated with such units have a role as instructors or supervisors to support students' development and act as collaborative partners to promote learning and improve their practice. The associated LCs comprise mainly interns from the CIU, clinical nurses working in the respective ward, a nursing lecturer from the University of Applied Sciences and some nursing students with work-study scholarships (Heemskerk et al., 2020).

Criterion sampling (Palinkas et al., 2015) was based on similarities in community development and design. First, each LC had been active for several consecutive academic years, meaning that start-up challenges had already been faced and experience gained through community learning. This development stage can be described as *maturing,* coming after the initiation process and is characterized by growth and sustainment (Wenger et al., 2002). Second, all three LC designs were similar. Clinical nurses, nursing students and a nursing lecturer were involved in the LC and gathered approximately every four weeks for a 2-hour session. In addition, case accessibility (Creswell and Poth, 2018) was taken into account. Cases were intentionally selected based on which the principal researcher had access to and involve LC members who were willing to participate and available during the COVID-19 pandemic, when part of the study took place.

3.3. Participants

The participants included members of the selected LCs (Table 1). They received written and verbal information about the study and voluntary participation. Written consent was subsequently obtained from the participants to collect the data. Some of the participants were already members prior to the start of the 2019–2020 academic year and some of the participants joined the LC at the start of the first semester (September 2019). Some students left the LC after the first semester because their apprenticeship ended and new students joined because their internships started in the second semester (February 2020). For all remaining and new participants, membership ended in mid-March 2020 due to the circumstances of the COVID-19 pandemic.

Table 1
Number of community members in each learning community (LC).

Community members[a]	Pulmonology	Surgery	Gastroenterology
Interns – higher professional education			
Third-year interns[b]	2	3	1
Fourth-year interns[c]	4[d]	3[e]	4[d]
Interns – secondary vocational education			
Fourth-year interns[c]	2	2	2
Students with work-study scholarships[f]			
Higher professional education students	2[g]	0	0
Secondary vocational education students	0	1	1
Clinical nurses[h]	6[i]	5[j]	4[k]
Nursing lecturer [l]	1	1	1

[a] Listed participants refer to community members in semester 1 (academic year 2019–2020), excluding newly joined members in semester 2 (academic year 2019–2020).
[b] Nursing students with an internship for a period of 20 weeks (one semester).
[c] Nursing students with an internship for a period of 40 weeks (two semesters).
[d] Two fourth-year interns (nursing students) had already been community members in the previous academic year (2018–2019).
[e] One fourth-year intern (nursing student) had already been a community member in the previous academic year (2018–2019).
[f] Salaried nursing students who are employed by the hospital and are completing the final phase of their educational program.
[g] Both students were already community members prior to the 2019–2020 academic year.
[h] Clinical nurses working in one of the three wards (pulmonology, surgery, gastroenterology) and one of whom acted as a nursing supervisor.
[i] Four out of six clinical nurses were already community members prior to the 2019–2020 academic year.
[j] Four out of five clinical nurses were already community members prior to the 2019–2020 academic year; one nurse left in the interim as a result of other work activities and was replaced by a new nurse who took over the first nurse's membership in.the learning community.
[k] Three out of four clinical nurses were already community members prior to the 2019–2020 academic year; the nursing. supervisor left in the interim as a result of other work activities and was replaced for another colleague who took over the supervisor's membership in the learning community.
[l] The same nursing lecturer from the University of Applied Sciences who was already a community member prior to the 2019–2020 academic year.

3.4. Data collection

Data were collected between October 2019 and May 2020. Group interviews were held with nursing students from each LC (a total of 3) and individual semistructured interviews with different members of each LC (a total of 21) (Appendix A). A topic list inspired by the value-creating indicators suggested by Wenger et al. (2011) was conducted and a similar topic list was pilot tested during trial group interviews. The insights gained were used to modify the topic list for the group interviews regarding the research subject and to develop the topic lists for the individual semistructured interviews. The topics covered during the group interviews were confidence in one's own abilities, the difference made in practice and personal views on perceived development and related community participation. During the individual interviews, the same topics were addressed, and additional in-depth dialogs were held about case features, members' actions and behaviors in practice, community learning as contributors and the impact of the COVID-19 pandemic.

In addition, the principal researcher participated as a member in each LC to gain more insight into the context of the cases, experience the community learning and keep field notes. Furthermore, the researcher was able to have access to the members, record evaluations and document minutes of each session. Based on the field notes, periodically reflective notes were made and processed with the evaluations and minutes received (a total of 15 documents) to capture aspects that might not be addressed during the interviews.

The group interview data were collected face-to-face and the semi-structured individual interviews were conducted by video calling due to COVID-19 restrictions. All interviews were recorded, reflective memos were written afterward and then the interviews were transcribed.

3.5. Data analysis

A hybrid approach of thematic analysis (Fereday and Muir-Cochrane, 2006; Xu and Zammit, 2020) was used to identify common themes in the qualitative data and answer the research question. Thematic and open codes were used to divide the data into useful sections (Evers, 2016; Evers and van Staa, 2010). Thematic codes were based on core elements from the research question and literature of Wenger and colleagues (Wenger-Trayner and Wenger-Trayner, 2020; Wenger et al., 2011). These codes were compiled into a provisional list of codes (Miles and Huberman, 1994), which could be adjusted, expanded, or removed during the process (Appendix B). Open codes were created on site while reading the data (Evers and van Staa, 2010).

The principal researcher and a second researcher read a select number of interview transcripts to become familiar with the data and then coded the transcripts independently. This procedure was used to reduce bias as well as to firmly discuss and codevelop the code system, where a scatter of the transcripts was essential (Evers, 2016). This scatter was accomplished by coding four individual interview transcripts from as many diverse respondents as possible and one group interview transcript (Appendix A).

After each transcript was independently coded, text sections and the assigned thematic and open codes were discussed, and the codes of the provisional list (thematic codes) were adapted and supplemented with agreed open codes. The thematic and open codes were peer reviewed by a third researcher. The qualitative data analysis software ATLAS.ti 22 was used. The remaining transcripts were then coded by the principal researcher using the developed code list (Appendix B), with interim peer reviews by the other two researchers to detect blind spots. Finally, the processed documents, including minutes, evaluations and field notes, were coded to triangulate the case description data of each LC.

After the coding stage, text sections with the same codes were traced, compared and merged into broader themes. Hence, this stage involved an iterative process of rereading text sections, repeatedly charting relations and determining consensus among the researchers. Ultimately, across several collaborative sessions, the coded data were interpreted, and a consensus was reached.

3.6. Ethics and procedures

To ensure the quality of the study, an application was submitted to the regional medical ethical committee and approval was obtained from the hospital board. Moreover, multiple consolidated criteria for reporting qualitative studies (COREQ) were maintained (Tong et al., 2007). Related to the research team and reflexivity (domain 1), multiple

Table 2
Overview of LC (learning community) features per case.

Identified LC features	LC Pulm.[a]	LC Surg.[a]	LC Gast.[a]	Illustrative quotes
Recurring frequency	X	X	X	… basically, we met every month … **[pulmonology student]**
Shared intention[b]	X	X	X	In groups, we discussed the blueprint. The blueprint describes how we fundamentally work together during the LC,
Community building	X	X	X	including the purpose of the LC. **[minutes LC4 gastroenterology]**
Using pain scores	X			Well, we have been working on improving the use of pain score.
Care of fixator external		X		**[pulmonology nurse]**
Bedside handover			X	And then together, we had chosen one research or one topic from that … which was the protocol of an external fixator. **[surgery student]**
				And then we got to choose, and we simply selected the bedside handover. **[gastroenterology student]**
Basis structure sessions	X	X	X	So, that was just in the structure of: "Okay this is how we organized it." … Those two parts are very clear, and within that, you have the freedom to think of matters, to change, to adapt. **[lecturer]**
Recurring activities	X	X	X	Usually, it started with an introduction and then one of the students had prepared a schedule. They had also mailed
Preparations made	X	X	X	that in advance, prepared an agenda…. I think we did student assignment discussions first … And the second part, we
LC assignment/ research	X	X	X	spent on quality improvement in the ward. Sort of a joint project that was running…. We had the evaluation moment and the planning moment. **[gastroenterology nurse]**
New activity[c]	X	X	X	And now, this year, it is rearranged to be a little different, so with an artifact … what I noticed with this is that it gave a
Student questions	X	X	X	purpose to the first part of the learning community. **[surgery nursing supervisor]**
Evaluations	X	X	X	Yes, everything was reported, so to say, each time for the next time … **[pulmonology nurse]**
Report writing				
Various functions available[d]	X	X	X	Because I am also one of the pieces of the puzzle, when you look at nurses, nursing supervision, the fellow students, and the lecturer and how that comes together. **[lecturer]**
Fulfilled diverse roles	X	X	X	Yes, we always had a minute-taker. And also at one point, chairs, also the student became chairperson. **[surgery**
Minute-taker	X	X	X	**student]**
Chairperson	X	X	X	I, in my role as nursing supervisor then, of course, had a bit of a facilitating role or in cooperation with the lecturer ….
Facilitator	X	X	X	then M-I [*lecturer*] also had additions or in-depth questions. **[gastroenterology nursing supervisor]**
Supporter[e]	X	X	X	So, everyone participated actively. Not just the students, not just the graduates or the nursing supervisor. But
Other roles[f]	X	X	X	everyone together. **[pulmonology student]**
Role distribution				… the leader and the minute-taker were one person, though, and that was the nursing supervisor, M-II. And, in
Fixed roles[g]	X			addition, there was a bachelor-level lecturer who also had a role in that … **[pulmonology student]**
Alternating roles[h]		X	X	We had actually made a schedule in advance where we had written down who was going to do the minutes and who was going to be chairperson…. That [*chairperson*] alternated. **[gastroenterology student]**
Shifting roles[i]		X	X	And at the end, we also looked at whether the students themselves could take on that chair role. So that was, I think, one or two gatherings that we really had the students do it. **[surgery nurse]**
Learning culture[j]	X	X	X	Everyone was open and honest, and we helped each other. We learned from each other. **[pulmonology student]**

[a] Pulm = pulmonology; Surg = surgery; Gast = gastroenterology
[b] Shared intention concerns, on the one hand, working on community building by forming explicit goals, expectations and methods of collaboration with each other and, on the other hand, the focus being determined by joint decision-making on the LC assignment/research.
[c] Working toward the same goal as LC through a joint assignment/research is a new activity from other academic years in which the LCs were active. Previously, this activity was not part of the sessions.
[d] The following participate in each LC: secondary vocational educational students, higher professional educational students, clinical nurses, nursing supervisor and lecturer (the last is involved in all three LCs). In addition, colleagues or professionals from other disciplines with expertise in a particular subject can join by invitation. For the gastroenterology LC, there was temporarily no nursing supervisor present during the sessions until a new nursing supervisor was appointed.
[e] The role of 'supporter' is usually attributed to the participating lecturer who provides content and/or facilitation support during the sessions.
[f] An active participation role, a critical role and a role model (or something similar) are other roles fulfilled by members.
[g] The roles of 'minute-taker', 'chairperson', and 'facilitator' in the LC are firmly held by the nursing supervisor.
[h] The roles of 'minute-taker', 'chairperson', and/or 'facilitator' in the LC are alternately fulfilled by students.
[i] The 'chairperson' role shifts between professionals and students during the LC's lead time.
[j] This is a culture where members learn with and from each other, the environment and manners are perceived to be positive and/or open, encouraging members to work with each other to improve.

researchers were involved in the study (i.e., investigator triangulation) and relationships were established with participants through prolonged engagement with the principal researcher to enhance credibility (Lincoln and Guba, 1985). This researcher also provided information to the members about the study, voluntary participation and consent. In terms of the study design (domain 2), accurate preparation and conduct contributed to systematic data collection given the samples chosen, the interview trials, data management and the log kept. Furthermore, for the purpose of data type triangulation (Evers and van Staa, 2010), different data were used to understand the cases (i.e., interviews, minutes, evaluations and field notes). In terms of the analysis and findings (domain 3), first-stage coding was performed independently and a collaborative log, including reflections and memos, was kept on an ongoing basis to record thought processes, choices made and reasons for interim changes. This procedure contributed transparency about what was done during the research process and what analytical choices were made and why (Pratt et al., 2020).

4. Results

The analysis showed seven themes: *LC features, LC preconditions, LC needs, impetus, application, research context* and *meaningfulness*. The themes are described for the three LC cases (pulmonology, surgery and gastroenterology) and illustrated with quotes and document excerpts (see corresponding table and boxes).

4.1. Design of LCs

The *LC features* are used to describe how community participation takes place to indicate application within the nursing learning and working context. As shown in Table 2, overall, the same LC features were identified across the three cases.

Box 1
Quotes 'Design LCs'.

Quote A I felt more like that was where [*in the gastroenterology LC*] the initiative came from the students, like: "This is how we want it." … So, I do not feel like you could think, "Gee, in gastroenterology, there has been a change in the nursing supervisor," but on the contrary, I think it has had no effect. That students have internalized more that they have the responsibility…. So, I think that is more down to, say, the students' task responsibility that they have shaped in a certain way. [lecturer]

Quote B So, what is very important is what we developed in the beginning that blueprint, so to speak. So that you discuss with each other, "What do we think is important? And what are we going to commit to?" This has been very instructive for me … [surgery nurse]

Quote C1 … but since we have been working on the use of pain scores, so to speak, I do feel that we have spent less time on our personal school assignments. For example, I wanted to practice a final interview once, and we could not do that because we had a little less time for that because we were busy with pain scores, so to say. [GI pulmonology student]

Excerpt C2 What could have been better? Time management. Planning. [evaluation LC1 pulmonology]

Excerpt C3 Time schedule is now rated as 'good', which is consistent with the goal the nursing supervisor set for oneself last time. [reflective note researcher in LC3 pulmonology]

Differences in the case features emerged with respect to collective intent, where LCs each work on a different type of assignment/research. The pulmonology LC focuses on pain scoring, surgery LC on care of an external fixator and gastroenterology LC on bedside handover. Another detailed difference is how members fulfill their roles. In the pulmonology LC, the roles of minute-taker, chairperson and facilitator are mainly fulfilled by the nursing supervisor. In the surgery and gastroenterology LCs, the minute-taker role rotates among the students and the chairing role shifts toward students over time. After a while the students themselves facilitate the sessions together with the lecturer in the gastroenterology LC. According to the lecturer, in the other two LCs, this facilitation is directed more by the nursing supervisor, in contrast to the gastroenterology LC, where the nursing supervisor role has changed hands. The lecturer speaks of "task responsibility" in terms of students planning and organizing activities themselves (Box 1, Quote A). Regarding collective intention, it emerged that an important *LC precondition* is expressing and clarifying expectations. The interviews and minutes showed that all three LCs devote time and attention to making these expectations explicit. Expectations concerned topics, such as how to work and learn together, what members find important and what they strive for together, as indicated by a nurse in the surgery LC (Box 1, Quote B).

Regarding LC composition, the convergence of different functions is appreciated, but an *LC need* prevalent among all LCs is increasing the involvement of other nurses in LC activities. While it is nice to have nurses participate as permanent members for an extended period, members are considering how to increase nonmember involvement by, for example, more actively inviting colleagues to sessions or sharing information with them. In addition to stated needs, such as equal participation and members preparing appropriately, time management is a major concern for all LCs with a particular need to make sufficient time available for discussing individual student questions and assignments during sessions. Evaluations showed that LCs have made interim efforts to improve their time management, as illustrated by the following quote and excerpts from the pulmonology LC (Box 1, Quote C1, Excepts C2, C3).

4.2. Transfer to learning and working context

In all cases, it emerged that following LC participation, members applied what they had learned and experienced. Knowledge, skills and/or attitudes gained were applied by members at later moments or in other situations. The *impetus* behind this *application* is the LC activities and interactions that take place, such as working on an LC assignment/research with the insights and understanding gained. Cooperation in working on this together as an LC is generally driven by a problem experienced in nursing practice, such as a lack of clarity about an approach (pulmonology LC), a lack of proper protocols (surgery LC) or

Box 2
Quotes 'Transfer to learning and working context'.

Quote A I am just encouraging everyone to do the [*bedside*] handover with the COW. I do that quite a lot…. Just doing that with everybody, like: "Hey with the COW." And that went pretty well. [gastroenterology student]

Quote B For example, I did not know about Movicolon [*medication to dissolve*] … which you have to include in the fluid balance. But after his presentation, I understood it, adopted it, and started to work with it as said. [GI pulmonology student]

Quote C1 … in the first few learning community [*sessions*], I was very insecure anyway, like, "Did I do it right?" And then you saw that everybody had done pretty much the same thing. [surgery student]

Quote C2 … but later, I thought, "Yeah, I will just ask anything I want to ask, and it does not matter." And I also felt pleasant in the group in the end. [same student as quote C1]

Quote D I did agree with M-III [*name of nurse*] today that she will take over the protocol, and that we are going to make a draft as soon as possible including, yes, what we agreed upon in the learning community and what we have investigated. So, she is going to adapt that. [surgery nurse]

Quote E At some point you may say to yourself, "Yes, how much more effective indeed is that [*my own participation in the LC*] going to be than this already is?" And I do think that maybe it could be a little bit more effective and then particularly, for example, hey, you say, "Well, you are going to pass those minutes to the students at some point anyway," to have a little more freedom in that. pulmonology nursing supervisor]

failure to implement an agreed method (gastroenterology LC). This application is manifested both in consulting or engaging knowledge resources within and outside the LC (e.g., experts, other members, literature, protocols) and during patient care by using, for example, the skill of asking questions about pain, knowledge regarding the care of an external fixator, or an enterprising attitude in the use of the computer on wheels (COW) during bedside handover, as described by a student in the gastroenterology LC (Box 2, Quote A).

Discussing student questions or assignments during sessions and what is generated, such as tips, ideas and feedback, provides *impetus* for further *application*. With the help offered by members of the LC, students obtain, for example, answers to their questions or ideas for further development of their own school assignment and research, which they then transfer into actions. Specifically, secondary vocational educational students from the pulmonology and surgery LCs noted that they struggle with an additional challenge in their own educational practice, namely, a lack of appropriate teaching and guidance for research and the use of literature. This prompts students to discuss their school assignments during sessions, with other members helping them search for literature on their own and then use it in reports. In addition to students themselves applying what they have learned at a later time or in another situation based on their own LC input, it was indicated that being presented with information (e.g., through a presentation) may prompt other members to apply what they have learned in their own practice, as described by a student during a group interview (Box 2, Quote B).

Students from all LCs also adopt a confident attitude. This attitude is usually mentioned in association with self-confidence and expressing oneself (e.g., asking questions or sharing one's opinion) within the LC or in the nursing ward. Professionals from the LCs recognize this confident attitude in students, which is sometimes also perceived in someone's private network or reapplied by a student in another situation, such as in another organization. The *impetus* to *apply* a confident attitude usually derives from a challenge that students personally experience regarding group collaboration, such as experiencing feelings of insecurity or adopting a wait-and-see attitude. Participating in the LC creates understanding that an individual is not alone and that everyone is allowed to ask questions and share opinions, as illustrated by two quotes from a student in the surgery LC (Box 2, Quotes C1, C2).

The utilization of knowledge, skills and/or attitudes occurs not only among students but also among professionals from the LC. Usually, this *application* happens through an *impetus* that emerges during professionals' LC participation, such as a nursing supervisor who adopts a more critical attitude in care through understanding (pulmonology LC), a nurse who applies acquired knowledge in assessing students (surgery LC), or a nursing supervisor who uses the acquired skill of asking questions to facilitate students' self-direction (gastroenterology LC).

Application in the form of implementing something new is undertaken by professionals and students in the pulmonology LC. They apply a newly invented approach in their actions to an already existing nursing process (i.e., considering whether to perform a standard pain score with the patient). Among members of the gastroenterology LC, application is indicated in the form of reusing the method of bedside handover with repurposing of an existing tool (i.e., the COW). For members of the surgery LC, the application lies mainly in consulting knowledge sources to create a protocol that guides their own actions, with a few leveraging the influence of LC knowledge to encourage application by others, as indicated by one participating nurse (Box 2, Quote D).

Reflections on thinking, actions or situations as an *impetus* for *application* occur primarily among professionals in the LCs, as was the case for a nurse and a nursing supervisor from the gastroenterology LC who reflectively acknowledged that they played a part in a problem that arose regarding bedside handover. Reflections can also include potential application, involving actions that have not yet taken place but may follow later. A specific example of such a potential application was mentioned by the nursing supervisor of the pulmonology LC who prepares the minutes of the sessions (Box 2, Quote E).

4.3. Circumstances and relevance

The *research context* where the three cases are situated showed that gathering in an LC is not the only form of learning that can influence member actions and behaviors. Examples were given, such as group teaching where clinical reasoning and peer-to-peer coaching are offered, participation in a cross-departmental research community and clinical placement experience. For some students, the learning methods themselves influenced their actions and behaviors; other students felt that the combination of different learning methods encouraged application. A nurse from the pulmonology LC and a nurse and a nursing supervisor from the LC surgery mentioned the combination with other forms of professionalization (e.g., being in training, participating in a living lab).

In addition to affecting other forms of learning, COVID-19 circumstances also influenced application. All three LCs were abruptly terminated due to the restrictions and no more sessions took place. Community activities were put on hold and for some students in the surgery and gastroenterology LCs, this also meant the end of their internships, as described by a nurse in the gastroenterology LC (Box 3, Quote A).

Regarding collective assignments/research, application by the surgery LC no longer took place—except for an individual application of insights gained by a few—because the protocol of the external fixator was left incomplete due to the arrival of the COVID-19 pandemic. Students from the gastroenterology LC still tried to continue the bedside handovers in this period, but this stopped because the ward closed. Two students mentioned that during the pandemic, they continued to practice the skill of performing the bedside handover "briefly and concisely". Although the nurses in the pulmonology LC could not specifically state whether the application was actually signalized, most students and the nursing supervisor mentioned that they continued to work in accordance

Box 3
Quotes 'Circumstances and relevance'.

Quote A Well, in my opinion, due to the corona[*virus*], everything really did stop abruptly. For me, even because of that, because it is such a weird time, it already seems like half a year since my last learning community. Even though it is only two, three months but it is really also because all the students stopped, I am also completely out of it all at once. [gastroenterology nurse]

Quote B No, it continues because it is part of your job. When I am working and I see a pain score, I am still focused on what I have learned. That does not go away anymore because that is something you have memorized in your mind … And that is also a good sign because then that learning community has paid off. [pulmonology student]

Quote C It was really interesting to hear the different views and different opinions of everyone. There were really things from nurses that they already had experienced with how to take care of it [*an external fixator*] and that we came up with different things that contradicted it. So, you have to reach a compromise together about, "What is best?" I always found that really nice to see. [surgery student]

with the new approach to pain scoring during the pandemic, as indicated by a student in the pulmonology LC (Box 3, Quote B).

Although the LCs stopped, all members of the three LCs indicated that they are confident that an LC relaunch after COVID-19 should be both possible and useful. Regardless of the doubts of the nursing supervisor in the surgery LC, several members saw opportunities for continuing to work on the collective assignments/research they had started at the beginning of the academic year. The reason members considered a relaunch of the LC important was that some of them felt that participating in an LC is relevant to practice and contributes to a sense of collectivity. This relevance is related to their LC participation and why members find this meaningful. Several members from the three cases mentioned that participating in the LC is meaningful for practice and its applicability, for the students and supervisors themselves and for creating time and space for care-related research and quality. Moreover, according to most members, meaning is experienced through collective thinking, acting, or learning. This *meaningfulness* refers to acting as a group rather than alone, learning with and from each other and sharing perspectives from various positions (i.e., nurses, students, lecturer and nursing supervisor) to reflect on and collectively address issues, as described by a student in the surgery LC (Box 3, Quote C).

5. Discussion

The study findings show, both across and within cases, that following LC participation, members applied their actions and behaviors in the nursing learning and working context. Members described that this application was initiated by community activities and interactions that produced, for example, ideas, insights and confidence (i.e., applying potential value).

It was also indicated that application arose in addressing problems or challenges, for example, prevailing issues in the nursing wards (e.g., a lack of clarity about a method) and students struggling with a lack of appropriate support from school. According to Wenger-Trayner and Wenger-Trayner (2020), such moments can be "a wellspring of new learning" (p. 89), as applied value also involves learning arising from practice through sharing and bringing back what has been generated. In the current study, this is reflected in collective LC efforts to address an existing problem in nursing wards or students who make persistent attempts to do things differently or better. This should take into account that other forms of learning may also have influenced members' application. This resonates with the literature examining clinical reasoning (e.g., Hunter and Arthur, 2016), peer learning activities (e.g., Stenberg et al., 2020) and research-oriented community learning (e.g., Heemskerk et al., 2023) used during clinical internships to support learning. Hence, it is conceivable—which is in line with the assumption of Wenger-Trayner and Wenger-Trayner (2020)—that applied value covers more than one dimension and originates from multiple sources.

The results show the application of members' actions and behaviors not only in situations outside the LC environment but also within it. A notable moment concerns the actions taken by students to organize gastroenterology sessions out of their shared sense of responsibility. Unlike in the other two LCs, where both nursing supervisors were continuously and actively involved in the run-up and process of the sessions, this seems to have been initiated more by the students in the gastroenterology LC due to the interim changes in the nursing supervisor position. It is possible that due to the interim changes, there was a natural shift of control to the students. Such a learning environment, where there is less guidance and students have the necessary prior knowledge to take care of their own guidance, could promote self-directed learning (Robinson and Persky, 2020). In addition to personal traits (e.g., self-efficacy), the environment also influences nursing students' self-directed learning, where peer learning at work (Chakkaravarthy et al., 2018) and collaborative small group learning—in addition to individual learning—are appropriate activities (Wong et al., 2021). Learning with peers in the CIU and the community with the opportunity for both individual and collective learning combined with less guidance in organizing the sessions may have enhanced students' ability to take more control of the gastroenterology LC. This finding highlights that nursing supervisors might be more reserved in their facilitation and, where necessary, provide appropriate, intentional support while monitoring students to reinforce self-directed learning within an LC.

The results show that members' individual application (e.g., of knowledge, skills and/or attitudes) in the learning and working context remained sustainable during the COVID-19 pandemic. Actual collective application by members and the nursing team on the ward based on LC results seemed more difficult to establish and less sustainable, which is possibly due to the mode of collective learning. Collective learning means that there is a conscious striving for common outcomes (De Laat and Simons, 2002; Mittendorff et al., 2006), where the opportunity to truly engage in dialog with each other is essential in this regard (Assen and Otting, 2022; Garavan and McCarthy, 2008). The current study reveals that members learned with and from each other based on shared intentions. However, there was also the possibility within these LCs to pursue individual intended outcomes (e.g., to answer personal learning questions, to be able to complete individual assignments). It is conceivable that the inclusion of individual intentions and having insufficient opportunities to interact with each other due to the COVID-19 restrictions and therefore to apply actions and behaviors, was especially manifested at the individual level. Nevertheless, almost all members were confident that relaunch of their LC will be possible after the pandemic so that they can further collaborate on previously determined collective intentions. Previous research has also shown that collective learning conditions can be changed during the COVID-19 pandemic to sustain the development of projects and shared knowledge (Eslahchi, 2022), which may be useful for LCs operating under crisis conditions as well. This supports the actions outlined in the State of the World's Nursing report to equip nurses and students to work in disaster, emergency and conflict situations, allowing them to take full advantage of their education and training (World Health Organization, 2020).

5.1. Limitations

In addition to strengths, such as triangulation (of data and researchers), time spent in the field by the principal researcher and recurrent peer review during the analysis process (Creswell and Poth, 2018), the study has some limitations. One study limitation is that data collection during LC sessions ended when the COVID-19 pandemic began. Because all remaining scheduled sessions were canceled and several internships were discontinued, the perspectives of newcomers in the LCs could not really be collected. Although this study clarifies the context (prepandemic and during the pandemic) where members applied and/or discontinued their actions and behaviors, the findings do not indicate the extent of influence or possible correlation with the pandemic. Finally, the principal researcher attended the LC sessions and participated at a low level. This role necessitated some interaction with members to make field notes and access resources. However, brief connections with numerous respondents may cause emotional involvement to be overlooked, which could lead to frustration and mistaken perceptions on the part of the researcher (Gold, 1958; Saunders et al., 2019). Through reflection, the combination of field notes and interview data and the specification of the principal researcher's role during the analysis, these issues were actively addressed.

5.2. Implications for practice

LCs should be encouraged to make conscious evaluation at the group level, where the framing of potential and applied value can be helpful at the start of LCs or on the entry of newcomers. To structure this framing process, it is useful to formulate specifications for the cycles and make the intentions and activities involved explicit (Wenger-Trayner and

Wenger-Trayner, 2020), which may direct collective application. Furthermore, LC facilitators should be supported in using value verbs (e.g., give, deliver, bring) during member interaction to allow them to be more focused on the processes that lead to desired LC outcomes (Hoppen et al., 2023), such as increasing student task responsibility or collective application in members' learning and working context.

5.3. Further research

Further research should be conducted on members' self-efficacy during their LC participation to determine consistency with applied actions and behaviors, as this research demonstrates a confident attitude among students and the literature shows that self-directed learning can be nurtured by self-efficacy (Chakkaravarthy et al., 2018; Wong et al., 2021).

6. Conclusion

This study—designed to indicate how community participation transfers to application within the nursing learning and working context—shows that members' actions and behaviors are indeed applied. In addition to applying the acquired knowledge, skills and/or attitudes and depending on the case, members' application manifests as working with a newly invented approach, consulting knowledge sources and reusing a given method. Although collective application in the COVID-19 era seems less sustainable than the individual application of actions and behaviors by members, this study reinforces the idea that frequent gathering as an LC is preferable, but recurring sessions are not necessary in times of crisis to continue individual application at later times or in other situations.

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Wendy M. Heemskerk: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft and editing, Visualization, Project administration. **Christian Wallner:** Methodology, Formal analysis, Writing – review and editing, Supervision. **Clarissa Jungerius:** Formal analysis, Writing – review and editing. **Jet Bussemaker:** Methodology, Writing – review and editing, Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supporting information

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