Social Interactions of Clerks: The Role of Engagement, Imagination, and Alignment as Sources for Professional Identity Formation

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Abstract

Purpose
Participating in clinical practice shapes students’ identities, but it is unclear how students build meaningful relationships while “dipping into” various social contexts. This study explored with whom students interacted, which social relationships they built, and how these relationships contributed to the formation of a professional identity.

Method
In this longitudinal study at University Medical Center Groningen, University of Groningen, the Netherlands, 9 undergraduate medical students recorded experiences of thinking about themselves as future professionals (September 2015 to March 2017). The authors conducted template analysis using both open coding and a priori themes derived from Wenger’s modes of belonging to communities of practice: engagement, imagination, and alignment.

Results
The authors received 205 recorded experiences. While rotating, students used engagement, imagination, and alignment to give meaning to clinical workplace social interactions. Participants considered relationships with doctors, patients, and peers as preconditions for engaging in meaningful experiences. Although imagination and alignment were less represented, discussing imagination with peers and physicians stimulated a deeper understanding of what it means to become a physician. Explicitly being invited “to the table” and awareness of the benefits of being a clerk were instances of alignment that stimulated the development of identities as future doctors.

Conclusions
To understand the nature of professional identity formation, Wenger’s modes of belonging must be considered. Where engagement is very prevalent, imagination and alignment are less spontaneously mentioned and therefore more difficult to foster. Looking for ways to support imagination and alignment is important for students’ sensemaking process of becoming a doctor.

Although the identity formation of medical students is becoming a well-explored subject,1–8 little is known about how participation in communities of clinical practice affects professional identity formation (PIF) during clinical training—for instance, undergraduate clerkships.2,4 This is problematic because the clerkship is a determining and vulnerable period in students’ personal and professional development.8 We do know that other people and the social environment strongly shape students’ identities.3–5,8 Yet we do not know how students who are rotating through different contexts manage to build meaningful relationships while “dipping into” this variety of social contexts, thereby being exposed to multiple departments, cultures, health professionals, peers, and patients. Knowing more about how these social relationships influence trainees’ PIF might help inform improvement of the curriculum to include PIF as an educational objective.10

Recent literature on PIF emphasizes the interactional character of identity, meaning that it is constructed in the interaction between the individual and the context.2–5,8 In each different context, medical students construct a doctor’s identity through talk, the use of language and artifacts, and day-to-day activities.4 In line with the work of Rees and Monrouxe, this emphasizes the important role of social relationships with others in that environment.11 The theory of communities of practice12 provides an entrance to explore this interactional aspect of identity formation.1 During clerkships, medical students become short-time members of a health care team, which is part of legitimate peripheral participation. In this community of practice, students interact with professionals, peers, and patients while carrying out clinical tasks. Through such interactions, students have the possibility to form relationships with these professionals, peers, and patients, which further informs PIF.2,12–14 According to Wenger, learning and social participation are connected.15 In the social theory of learning, Wenger described 4 components of learning: practice, community, meaning, and identity. Identity extends the framework by focusing on the person, from a social perspective. Part of the identity component are the “modes of belonging”—engagement, imagination, and alignment—which create the opportunity to make sense of identity formation when belonging to a community.12 Although engagement has been extensively studied,3,8,15–18 we know little about the modes imagination and alignment. Engagement is about being in practice, at a certain time and place. Imagination, in contrast, is defined as a creative process that transcends time.
and place. It enables medical students to produce new images of how they see themselves and their place in the world. Alignment bridges time and space: Medical students can actively connect their actions to the broader system and discourses in a social environment. Engagement, imagination, and alignment are all supposed to take place through social interactions, in a community of practice.

In this study, we used the modes of belonging—engagement, imagination, and alignment—as a lens to look at the narratives of medical students to understand how interactions and relationships influenced their PIF. More specifically, we wanted to know with whom students interact, which social relationships they build, and how these relationships contribute to the formation of a professional identity.

Method
We were interested in how medical students’ PIF was influenced by interactions and relationships during their clerkships. To gain insight into students’ experiences, we used audio diaries, wherein students recorded their own reflections. We applied a generic qualitative approach and used template analysis to structure and interpret the data.

The Ethical Review Board of the Netherlands Association of Medical Education (NVMO-ERB) approved this study (file number: 536).

Participants
In year 5 of a 6-year undergraduate training program, students at the University Medical Center Groningen (University of Groningen) were enrolled in 10 four-week rotations. Over the course of the clinical year, students met in peer-to-peer coaching groups every fourth week.

In spring 2015, we approached all medical students at the end of year 4 (340 students) by email, providing information about the study and asking for participation by replying to the email. We initially included a convenience sample of 15 students across a range of age and gender, ensuring that the participants were representative of the specific student cohort. In qualitative research, having too many data may adversely affect the quality of analysis. Participants started their clerkships between September 2015 and March 2016; data collection continued until March 2017. Nine participants (5 females, 4 males; age range, 23–26) completed the study. Six participants stopped recording because of different reasons: burnout (1), lack of time (3), and forgot to record (2).

Because of the longitudinal approach, and the multiple data entries collected, we deemed this to be sufficient for analysis.

Data collection
Because we wanted to explore students’ spontaneous reflections, we used audio diaries, asking students to talk about meaningful experiences that made them think about themselves and the future doctor they wanted to become. We asked students to use the following prompts: What happened? Who were the persons involved, and what was your relation to that/those person(s)? Describe the experience in detail and as clearly as possible. How did this influence your thoughts and the person you wanted to become?

We provided a voice recorder for each participant. After each rotation, students emailed the recordings to the lead author (M.A.). Each student who completed the study made at least 20 audio entries: 2 audio entries for each of the 10 rotations during the clerkship. The length of the audio entries varied between 2 and 8 minutes. The recordings were transcribed verbatim by one author (M.A.). All participants received a gift card of €50 after completion of all recordings.

Data analysis
We used template analysis as a specific form of thematic analysis, to organize and analyze our data. To maintain confidentiality, all participants were given pseudonyms. The principal researcher (M.A.) first critically reviewed all audio diaries, listening to the recordings and reading the transcript. After this, 2 of us (M.A., A.N.R.) discussed the first transcripts, focusing on “what” experiences students talked about and “which” relations were mentioned in these experiences. Once all data were collected, 2 of us (M.A., E.H.) reviewed the transcripts and constructed an initial list of items, using a combined approach of inductive and deductive analysis. The starting codes were produced following the participants’ terminology. Then, we refined these codes, going back and forth between the data and the initial list of items. In this cyclical process, we used the modes of belonging as a guide (i.e., a priori themes) to understand how students talked about meaningful experiences. M.A. led the coding process and constructed subsequent templates. She discussed the evolving templates on a weekly basis with another researcher (E.H.) and 3 times within the whole team (including D.H.J.M.D. and A.D.C.J.). This resulted in a final template in which themes represented students’ social relations and the 3 modes of belonging in a hierarchical structure. This final template and the relevant quotes were translated from Dutch to English by 2 of us (M.A., E.H.) and discussed and checked by the whole team. The qualitative research software Atlas.ti (Atlas.ti GmbH, Berlin, Germany) was used to sort fragments and search for relationships and general themes.

Team composition
The research group consisted of researchers with different backgrounds to enhance interpretation of our findings. The first author (M.A.) is a sociologist and a PhD candidate in medical education. The other authors have different professional backgrounds, including elderly care medicine (E.H.), sociology and ethics (A.N.R.), educational sciences (D.H.J.M.D.), obstetrics–gynecology (F.S.), and veterinary medicine (A.D.C.J.). They all hold a PhD in medical education or a professor position.

Results
In their narratives (205 in total), the 15 participating students talked about how they built relationships with a variety of health care professionals. Relations with physicians (residents and consultants), patients, and peers were central to the experience of students. While rotating, students used engagement, imagination, and alignment to give meaning to the interactions they had with the different people in the clinical environment (Table 1). Narratives containing examples of engagement were highly prevalent.
Both imagination and alignment were less represented in students’ narratives. To show how one single student had different experiences with physicians and patients in different contexts throughout the clerkships, for the first theme (i.e., engagement), different experiences of the same student will be presented.

**Engagement**

Engaging in practice was important for participants to negotiate their identity. To get access to meaningful experiences, participants had to build relationships with other members of the community, especially physicians. Building these relations was easier in some rotations compared with others. Feeling welcome and being taken seriously both facilitated the start of her rotation, hampering engagement and changing her perspective on a discipline she liked before:

> There was a threshold to approach people and you think twice before you speak or act. I felt a tinge of sadness, because internal medicine is a specialization that I considered. But how they treat people in general is rather unpleasant … and I certainly don’t want to treat people that way. (Seventh rotation)

By contrast, physicians sometimes hindered participants’ engagement in practice and, as a result, damaged students’ confidence. During one of her rotations, a supervisor strongly criticized Tessa:

> He launched an attack out of nowhere: “What are you doing here? This is not going well. I cannot count on you!” … I felt cornered … by that time I was on the brink of tears. … It turned out there were differences between how I learned to perform a physical examination and how he wanted me to do it. Besides that, he did a lot of things of which I had never heard. So, all in all, it was informative, but how we got there was frustrating. I think, partly because of this incident, we have a disturbed relationship. (Eighth rotation)

When relations were established, participants more easily engaged in practice. In a later rotation, one of the physicians explicitly invited Tessa to express her personal expectations and preferences:

> I very much enjoyed that and I felt comfortable. It not only gave me a welcome feeling, but it also provided me an image of someone who I want to become. It fits with who I am. (Ninth rotation)

Abbreviation: n/a indicates not applicable.
As a consequence, Tessa had trouble getting access to meaningful experiences because the supervisor did not want her to accompany him to other activities. This experience had a major effect on Tessa: “At this moment, I feel very insecure about neurology, and my confidence has been badly shaken” (eighth rotation).

Meaningful activities often involved patients, when taking a history, performing a physical examination, or conducting full consultations. Tessa found ways to engage in practice to make a contribution to the community—for instance, by picking up patients from the waiting room and introducing herself actively to them. As a result, she was allowed to perform physical examinations and other activities such as conducting an ultrasound. This was her way of building relationships with patients and gaining trust. In the gynecology rotation, she discovered how her physical characteristics (e.g., being small, female, nonthreatening) facilitated engagement:

One lady who visited us, and with whom I performed a physical examination, said, “Of course, who will refuse a small and sweet clerk as you?” We, the physician, the lady, and myself, laughed about this. Although this is a nice anecdote, I really think that it is true. In this case, my tiny posture had an advantage, and I think that is cool. (Ninth rotation)

In relation with peers, participants mentioned feelings of competition as well as support. Renate, one of the other participants, experienced competition with another student when trying to get access to an experience that was also meaningful for Renate. The fact that this colleague managed to get access, while Renate failed, made her think about herself and her way of getting things done:

Her way is much more efficient, but I am not sure if that is the person I want to be. I think not. So, I notice I am torn between the person I want to be and the things I want to achieve. (First rotation)

Additionally, the flip side of competition was described during one of Renate’s later rotations:

I found it very inspiring to see how she asked questions and tried to understand things. . . . I realized I lost my curiosity during the clerkship. . . . I want to learn as much as possible, and the only way for me is to ask questions, and I decided to try that out a little bit. (Fourth rotation)

Feelings of support were experienced when participants interacted with other peers during coach-group sessions. These coach-group sessions created a distance to the clinical practice and therefore eliminated the need for competition. In this setting, participants could freely discuss experiences and/or emotions with other peers to help and learn from each other. For example, Laura observed a cardiopulmonary resuscitation (CPR) and was very excited about this experience. She did not know what to do in that situation and froze. Afterwards, she felt uncertain whether she was suitable for the position as physician. Discussing this with other peers was comforting and gave support for the future:

They said this reaction was normal when encountering a CPR for the first time. And when you experience it for a second time, you experience it as an educational experience. So, I hope they are right, and I am very curious to find out. (Sixth rotation)

In sum, physicians provided access to meaningful experiences with patients, which, in turn, supported the feeling of “being a physician.” Between peers, feelings of competition and support influenced the negotiation of students’ self-image as clerk.

Imagination

Through imagination, students created an image of what it meant to be a physician. They envisioned and reflected upon professional behavior, responsibilities, patient population, work climate, work–life balance, norms, values, and ideals. Observing role models helped participants to imagine whether the way of life of a physician, or (parts of) that identity, fitted with their values or ideals. If so, students connected with that image and included this as part of their identity. If not, they distanced themselves from that image, as in the example of Lars:

This patient was complaining about the long waiting period. . . . now, I have the feeling that he sends the patient home, without diagnosis or follow-up, just because he thinks the patient is annoying. I think this is wrong and unprofessional, and I would act differently in the future. Yes, offering my apologies and compensating to the patient and look for a solution. (Second rotation)

Meaning was added to mere observations, when students were able to discuss their thoughts and feelings with physicians, enhancing their imagination. Renate discussed her frustrations and her ideals with a general practitioner:

We talked a lot about the world, what is good and what is bad . . . and I am frustrated about this . . . and I think: “I want to contribute, I want to help,” but this is not possible right now. And for me, this is a confirmation why I study medicine, namely, to help people and to be able to board a plane to offer my help somewhere. At some point, I hesitated why I studied medicine. . . . But now I remember why. . . . This general practitioner colored my thoughts by telling stories. (Fifth rotation)

This discussion helped Renate to reconnect with her initial ideals of being a doctor.

In relation with peers, participants exchanged stories about experiences in other rotations and discussed career prospects, which nurtured their collective imagination. Ronald explicitly mentioned:

Actually, with other clerks at lunch we talk very often about these things, of what kind of physician you want to become and why, and then we’re imagining what we want for our future. (Sixth rotation)

In short, discussing imagination with peers and, especially, physicians helped to create a deeper understanding of what it means to become a physician.

Alignment

Students aligned their everyday behavior to their position as clerk. They complied with the alleged unwritten rules of what was expected of the clerk in the clinical environment. They learned these rules in interaction with physicians and peers but also by observing the context. For example, Linda observed the hierarchical structure at the department during change-of-shift handovers and complied with the rule “clerks sit in the back row.” When a physician invited her to the main table, she agreed, but felt out of place, especially when other clerks entered the room:

I felt a little surprised by this invitation. . . . I did sit down with them, but it felt a little strange. Especially when my fellow clerks entered the room . . . and afterwards told me, “You’ve got balls sitting at the table!” . . . although I was surprised myself, actually, I think it should not be that strange to sit at the same table as the physicians. (Second rotation)
Although Linda was not used to this position yet, identifying as a clerk instead of a physician, the explicit invitation to align with the physicians fostered a next step in her identity formation.

Students not only aligned their actions to their identity as a clerk (and thus “learner”) but also tried to align to their future role as physician. For example, students found ways to emphasize their position as clerk by creating a unique role, which allowed them to connect to the broader system of health care and direct their energy toward a common goal (helping the patient). For example, Jeroen realized that his unique position as clerk made it possible to take time and listen to the patient. As a consequence, he created a broader vision of the various roles of a physician and connected this to his own future perception of a physician:

As clerk, I was allowed to spend half an hour, so we had all the time. . . . What she [the patient] said she was most happy about when she left, she said: “I had a pleasant conversation with you.” Which gave me insight in the different roles you have as a physician. (Fifth rotation)

Summarizing, students tended to identify as clerks more than as future doctors, but explicitly being invited “to the table” and having awareness of the benefits of their position as clerk were instances of alignment that stimulated the development of their professional identities as future doctors.

Discussion

Summary of findings

We adopted the communities of practice theory12 to better understand the role of relationships in the formation of trainees’ professional identity. Relations with physicians, patients, and peers played different roles in students’ engagement, imagination, and alignment in clinical practice. Physicians played a central role, as seen when a disturbed relation with a physician hampered a student’s access to meaningful experiences. When granted access, activities with patients gave clerks the opportunity to form a doctor–patient relationship. Additionally, in relation with peers, students felt both support and competition in getting access to meaningful experiences. Observing physicians in practice fostered students’ imagination. Discussing imagination with a physician had an even stronger influence, serving as inspiration. Furthermore, exchanging stories with peers nurtured collective imagination. In the interaction with physicians and peers, students initially tended to align their behaviors with their current positions as clerks. Yet several reflections show how students can become inspired to align with the role as future doctor when physicians actively invited them to cross borders.

Situating findings within the literature

In accordance with Wenger’s theory,12 all modes of belonging were visible in the narratives of medical students. Hence, the use of this framework was a powerful tool to comment on the influence of relationships.

The majority of students’ stories revolved around engagement. Our findings confirm that engaging in practical tasks such as welcoming patients1 and getting responsibilities and performing activities in close contact with patients supported the feeling of “being a physician.” This is part of legitimate peripheral participation12 and supports the idea that engaging in clinical practice is a precondition to shape someone’s professional identity.12,21,22

Stories from the perspectives of imagination and alignment were less present in students’ narratives, as are empirical accounts in the medical education literature. Without being prompted, students did not talk about imagination and alignment as much as engagement. When they did talk about these 2 modes, however, we noticed that imagination and alignment served as an important inspiration for PIF, transcending time and space, while engagement is limited by the here and now. At the level of engagement, students may be doing the same thing, but through imagination, both the meaning they give to the experience and their developing sense of self will be different.11 How students use imagination differs across countries and cultures.23 In a study with audio diaries among clerks in Taiwan and the Netherlands, the narratives of the Taiwanese students were found to be much longer compared with those of the Dutch, and richer in imagination and alignment. Dutch students focused on achievement and competence to become a skilled and competent physician. In contrast, Taiwanese students emphasized their striving for “doing good,” imagining a process of becoming a good person first, to become a good doctor and contribute to society.23 The current dominant discourse in Western medical education about mastering skills and competencies apparently leaves little room for imagination, which might be reflected in our findings, wherein imagination was not often mentioned spontaneously. We think, however, that stimulating imagination might be important to help align students’ focus on skills and competencies with the needs of the communities they serve.24

With regard to alignment, we found that participants did not align their actions toward their future position of a physician but, instead, toward their present position of a clerk. This may seem somewhat surprising because a recent publication showed that clerks tended to identify with residents, perceiving them as more experienced near-peers and thus representing the next step in their development.25 On the other hand, students are learners. Not only are they being assessed in their environment, but they are also in search for a profession that fits their individuality while navigating through a landscape of communities. Aligning their actions to all the different communities they are temporarily part of during their rotations, while being assessed and trying to find out where they belong, might be a bridge too far. Yet regardless of the rotation, students stay part of the community of practice of clerks. They thus identified themselves with their peers and learned from them how to act, speak, and behave as a clerk in that rotation.

Practical implications

Adding to existing evidence about the importance of participation or engagement in clinical practice,1,2,5,7,21,22 our study shows the importance of imagination and alignment as other modes of belonging that can enhance PIF. To engage medical students in their professional identity development, educators can actively invite students to talk about imagination and alignment. Imagination can be fostered in practice, for example, by explicitly giving attention to how students imagine themselves as future doctors. During coaching sessions, students can share their thoughts, feelings, and ideals with...
To foster students’ alignment, having conversations in which values and aspirations of clerks are mirrored by clinical realities and the opportunistic steps that might be required for a career could help. In the clinical workplace, students can be stimulated to identify with the physician role by explicitly inviting them to “sit at the table” and take part in discussions, as was described by some of our students. In addition, educators and physicians should appreciate and support the identity work students do when they are creating a specific role for themselves as clerks. By creating this unique role, students feel connected with the broader enterprise of medical practice, by offering a valuable contribution to patient care as future health care providers.

**Strengths and limitations**

One of the strengths of this study was the use of audio diaries. Because of the longitudinal nature, this method enabled students to record events with significant consequences but also more common events. This variety of recordings gave us a deeper understanding of the formation of an identity in practice. 20 Furthermore, this methodology enabled students to narrate experiences as soon as they occurred and record these experiences in their own environment. A limitation of this approach was that the research team was not able to ask follow-up questions or make additional prompts.

We wanted to explore what students spontaneously talked about—for instance, what they found important—regarding relations in combination with the modes of belonging. A too-specific question could bias their thoughts, not representing reality, but on the other hand, undoubtedly, more prompting would have led to more specific answers.

Including only a small sample of Dutch students, although they were enrolled in different clerkships in different hospitals located in the northeastern part of the Netherlands, may limit the transferability of our findings, as we know that core values underlying PIF may differ across cultures. 21 Therefore, conducting the same study in another cultural context would likely produce other outcomes, indicating other points of focus in stimulating PIF.

In this study, we followed students for 1 year during the clinical portion of their medical education. Understanding the full process of engagement, imagination, and alignment throughout medical school until students become doctors is essential if we want to know more about students’ sensemaking process regarding who they are and what kind of doctor they want to become.

Future research thus should seek to do at least 3 things. First, our understanding of the process of PIF, in particular imagination and alignment, will be enriched by gathering stories from students from different cultures and different parts of the world. Second, we could learn much more about the processes of imagination and alignment by following students beyond their clerkships into residency, when they are in different positions with different opportunities to build relationships and develop their professional identities.

Another approach might give additional insight into these processes—for example, using one-on-one interviews. In this way, follow-up questions can be asked to reach a deep understanding. Finally, future research might explore the possibilities of the humanities in the area of PIF—for instance, when using art-based approaches to foster imagination and alignment.

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**References**


