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## ORIGINAL ARTICLE

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### A qualitative exploration of chiropractic and physiotherapy teachers' experiences and conceptualizations of the educational environment

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**Objective:** There has been increasing scholarly interest in the role of environments in health care professional education, and the value of these has been widely acknowledged as an influential factor in educational quality. However, little is known about how teachers experience the environment, and there is a recognizable absence of a perspective from chiropractic and physiotherapy faculties. The aim of this study was to explore and contrast chiropractic and physiotherapy teachers' experiences and conceptualizations of the meaning of the educational environment.

**Methods:** In this qualitative study, we performed semistructured interviews with 14 teachers, purposefully selected to obtain richness, variation, and breadth in the data. The data were analyzed using inductive qualitative content analysis.

**Results:** The most noteworthy findings were, first, that chiropractic teachers experienced the meaning of the environment as motivating a vocational practice and modeling ideal, supporting and managing stressed students, and including students in the community of chiropractors. Physiotherapy teachers experienced the meaning of the environment as putting the pedagogical vision into practice, balancing students' expectations, and providing the prerequisites to grow within the profession. Second, both groups of teachers held common conceptualizations of the constituents of the environment as physical, organizational, relational, communicational, and pedagogical; however, they attached different connotations to these dimensions.

**Conclusion:** The findings conveyed a variance in the experience of the meaning of the educational environment that can be attributed to contextual and cultural differences.

**Key Indexing Terms:** Chiropractic; Education; Learning; Organizational Culture; Physiotherapy

*J Chiropr Educ* 2018;32(1):10–22 DOI 10.7899/JCE-17-12

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### INTRODUCTION

Educational environments have been acknowledged as a potentially significant influence on learners from as early as primary school.<sup>1,2</sup> Just as children's environments are vital to their development, so too are the environments in which students in professional health care education reside. These environments often evolve in symbiosis or are juxtaposed with teaching and learning and can be of a diverse nature, including academic, clinical, formal, and informal. The key players in these environments are students and teachers, although many other stakeholders exist, and the educational environment can be partially characterized by interactions between these 2 groups.

The existing literature contains a wealth of empirical work investigating students' perspectives of the educational environment. While students' expectations can be a good basis for reforming and improving the quality of the

educational environment, the perceived educational environment among student cohorts is idiosyncratic and may differ significantly on a year-to-year basis.<sup>3,4</sup> Thus, students' perspectives are only 1 side of the coin; the views of faculty and other stakeholders are equally important. As teachers often remain in an environment for extended periods, it is judicious to assume that they would have alternative experiences of the environment. Moreover, as they have a completely disparate perspective and role in the educational environment, it is also plausible that they experience it differently. Attention has been drawn to the paucity of studies investigating teachers' perspectives on the environment.<sup>5–8</sup> Miles and Leinster<sup>7</sup> have pointed to differences in the perception of the educational environment; in most cases, these are due not to a disparity between student and teacher insights but rather to teachers' discombobulation with specific elements and features of the students' experience.

Numerous health care professions, such as medicine, nursing, and dentistry, have to a greater degree executed empirical investigations of educational environments;<sup>3,9–11</sup> however, others have done considerably less. Two scarcely researched environments are chiropractic and physiotherapy education. We have previously quantitatively introspected both chiropractic and physiotherapy students' perceptions of the educational environment.<sup>4,12,13</sup> These empirical findings suggest that both these groups have similar judgments of the environment and perceive it as very good, but some aspects of the environment recorded low scores in both the cross-sectional and the longitudinal data, such as limited support for stressed students, teachers being authoritarian, and an overemphasis on factual learning. Moreover, even though a handful of survey-based investigations, apart from ours, have been conducted on these student populations,<sup>4,13–15</sup> to our knowledge there are no existing qualitative explorations of how teachers in these contexts experience the educational environment. Additionally, we have previously qualitatively explored chiropractic students and found that early in the training, the educational environment was experienced as part of a vocational community and the scaffolding of institutional relationships. In later stages, the environment was experienced in terms of personal growth, thus laying the foundations for autonomy and motivation. Thus, experiences of an educational environment are dynamic and change over time.<sup>16</sup> These results motivated us to further explore the meaning of the educational environment, as conceived by teachers, in the respective training environments and to further assess the differences and similarities between these 2 professional health care educational settings.

Unlike in our earlier studies, in which we employed the construct of perceptions of the phenomenon, and in line with Strand et al,<sup>17</sup> the present study utilizes the constructs of conceptions and conceptualizations. The latter is viewed as the process of forming a conceptual model of the phenomenon to underscore the notion of a more profound interpretation of the meaning of the educational environment.

Some in the cognitive tradition argue that the environmental phenomenon is the individual stakeholder's perception of the adjacent climate.<sup>5,6</sup> Others, conforming to a more sociocultural perspective,<sup>18</sup> argue that the phenomenon is embedded in the social context, drawing on cultural viewpoints of learning and its environment. In the present work, we did not explicitly set out to study teachers' conceptions regarding whether learning is an outcome of or is influenced by the environment. However, in order to lever findings to a more general level, we assert, in congruence with Schönrock-Adema et al,<sup>19</sup> that sociocultural frameworks can assist in helping to broaden the perspective and help frame and better understand the phenomenon. There are various strands of sociocultural theory, all of which share perspectives on mind, action, context, culture, and the dynamics of learning.

Attention has been drawn to the paucity of studies investigating teachers' perspectives on the environment. It is reasonable to assume that successful environments

would benefit from greater understanding as they are experienced by stakeholders within their working environment. Because of the reciprocity between teachers and students, teachers' perspectives are significant not only for themselves but also for students. Further, 2 scarcely researched environments are chiropractic and physiotherapy education, and the distinctions between these vocations are important when developing, integrating, and effectuating new and existing health care professional educational programs in the future.

The aim of this study was to explore and contrast chiropractic and physiotherapy teachers' experiences and conceptualizations of the meaning of the educational environment.

## METHODS

### *Positioning of the Study*

This qualitative interview-based study was part of a larger project employing a prospective, mixed-methods multiple case study methodology anchored in a pragmatic research tradition. The current research was conducted within an interpretative paradigm, denoting that knowledge is viewed as relative and socially constructed.<sup>20</sup> In line with this view, there was an underlying assumption that rather than endeavoring to reveal an objective and "real" truth, findings result from an interplay between the phenomenon under scrutiny and the investigators.<sup>21</sup> A qualitative approach was considered appropriate as human experiences were being explored.<sup>20</sup> The study was informed by the communities-of-practice framework in framing, to a certain degree, the phenomenon under study but, above all, as a lens to further apprehend our emerging findings. Communities of practice are formed around assemblies of individuals who share a common interest in or apprehension of something and who wish to deepen their expertise and knowledge in a discipline or subject.<sup>22</sup> Wenger et al<sup>23</sup> postulate that the community can act as a vehicle for collaboration, permitting its members to enter dynamic and betrothed relationships with peers and others.

### *Context of the Study*

Teachers from 2 case contexts were the study subjects: the chiropractic program at the Scandinavian College of Chiropractic (SCC) in Stockholm, Sweden, and the physiotherapy program at Karolinska Institutet (KI) in Stockholm. The SCC is a university college offering a 5-year full-time undergraduate program in chiropractic. It falls under the Swedish Higher Education Authority's supervision but has not been approved as a government-funded higher-education university college. The training attracts tuition fees, but students can apply for government aid as well as a supplementary government loan to cover tuition fees. The 3-year undergraduate physiotherapy program is conducted at KI, a publicly funded university, and culminates in a professional qualification and a bachelor of science degree in physiotherapy. The training attracts no tuition fees, and students can apply for government aid. Whereas the SCC is a small-scale

institution built by its founders and supported by the professional union, KI is a large-scale medical university with approximately 6000 undergraduate students. Both programs include extensive clinical education in their curricula. Generally speaking, they are divided into a conventional preclinical phase, with theoretical and practical training in formal classroom settings, and a clinical phase. However, for the chiropractic program, this is held primarily at the institution's own outpatient clinic. For the physiotherapists, clinical training is undertaken at the university's teaching hospitals.

### Participants

A purposeful and maximum variation sampling strategy was employed to obtain richness and variation in the data.<sup>24</sup> The participants were selected in several consecutive steps, having been chosen by means of a kind of snowball sampling technique; that is, the directors of each program were asked to identify and propose a list of conceivable participants, thus acting as gatekeepers for the study. A wide range of teachers was sought, thus constituting a diversity of participants regarding gender, age, and years of experience, and teachers from both preclinical and clinical education were recruited to obtain breadth in the data. The potential participants were invited to partake in the study, 3 of which declined on personal grounds or a heavy workload, leaving a total of 14. The participants were contacted by PP via e-mail for scheduling face-to-face interviews, and information about the study was included in the e-mail. Prior to the interview, the participants were further informed about the study orally and in writing. Written informed consent was obtained, and full confidentiality was guaranteed. Participation was voluntary, and the teachers were informed that they could withdraw at any time. Our sample constituted 8 teachers from the chiropractic faculty (CPT), 4 females and 4 males, aged between 28 to 63 years, and 6 teachers from the physiotherapy faculty (PTT), 4 females and 2 males, aged between 31 and 62 years.

The study followed national ethical guidelines and adhered to the tenets of the World Medical Association Declaration of Helsinki. Study approval was obtained by the Regional Ethical Review Board in Stockholm (2012/416-31/5).

### Data Collection

The data were collected through individual semistructured interviews to capture the teachers' experiences, opinions, feelings, and knowledge.<sup>17,24,25</sup> An interview guide was constructed from 2 criteria: to correspond to the aim of the study and, based on empirical findings from the literature, to illuminate potential challenges in the educational environment. PP interviewed the physiotherapy teachers, and ML interviewed the chiropractic teachers as, at the time, PP was a teacher in the chiropractic program and might have had personal relationships with some of the participants. Both interviewers had previous experience conducting qualitative interviews. The interviews were conducted in meeting rooms at the teachers'

workplaces, each lasting 30–75 minutes. The audiotaped interviews yielded more than 11 hours of recorded material, which was transcribed verbatim by someone independent from the study.

### Analysis

The data were analyzed using an inductive approach to conventional qualitative content analysis,<sup>26–28</sup> having been inspired primarily by the method outlined by Graneheim and Lundman.<sup>26</sup> The analysis focused on interpreting the meanings in the text, with the transcripts subjected to both manifest and latent content analysis. One way to understand these concepts is to relate them to 1 of the tentative axioms in communication theory, as described by Watzlawick et al.<sup>29</sup> This suggests a depiction of the manifest content as what the text explicitly says, dealing with the surface structure and the most obvious meanings of the text. Conversely, the latent content is subjected to an interpretative reading of what the text implicitly talks about and captures the deep structural meanings conveyed.

The analysis was carried out in 2 steps: first, an exploration of teachers' experiences of the educational environment and, second, an exploration of teachers' conceptualizations of the educational environment. Both of these steps were analyzed in the same way. The data from the 2 groups of teachers were analyzed separately although simultaneously. All 4 authors performed an independent first reading of the text. All interviews were read several times by at least 2 researchers in order to become familiar with the material. We also purposely allotted the interviews so that all of them were analyzed by at least 1 of the more senior researchers (IL or KBL). Meaning units were then identified, and these were condensed and labeled with a code close to the content. The codes were then abridged, abstracted, and clustered into subject areas by PP and ML. Within each subject area, the statements were critically questioned and iteratively compared to enable an interpretation in order to identify the categories describing the manifest content of the data. Through further analysis of the meaning of teachers' experiences, categories were drawn and explored into overarching themes expressing the underlying latent content of the data.<sup>26</sup> In analyzing the teachers' conceptualization of the educational environment, the interpretation was specifically geared toward the latent content and was labeled and described as dimensions portraying conceptual aspects of the phenomenon. Finally, contrasts between the 2 data sets were identified from a cross-contrasting of categories and themes as well as dimensions. The findings were discoursed and subjected to adjustments until consensus among all investigators was reached. Despite the fact that the aforementioned steps seem consecutively ordered, the process of analysis and search for patterns was in no way linear; rather, it was iterative and recursive. No software program was used to aid the analysis.

The trustworthiness of the study was heightened by data triangulation (2 separate contexts) as well as by

**Table 1 - The Meaning of the Educational Environment as Experienced by Chiropractic Teachers: Overview of Categories and Themes**

Category	Theme
Reliability in a sufficient program Combining theory and practice Theory acquire clinical implications Intention regarding progression Impossible to be totally prepared The penny drops in practice Reality not always black and white Necessary with factual knowledge	Motivating a vocational practice and modeling an ideal
Anxious and worrying students Financial burden Awareness of students' stress A small institution Organizational challenges Scheduling issues	Supporting and managing stressed students
A profession managing everything A competitive culture Teachers doing their own thing Humble attitude as teacher Stressed individuals	Including students in the community of chiropractors

investigator triangulation (with different professional backgrounds). Throughout the analytical process, constant comparisons between the categories and the original data transcripts were made to ensure a good fit between the data and the findings. Consequently, as described by Patton,<sup>24</sup> there was attentive devotion toward internal homogeneity and external heterogeneity. To further consolidate the analysis, frequent debriefing sessions among all investigators ensued throughout the process.

## RESULTS

This article draws on the experiences and conceptualizations of the meaning of the educational environment from 14 teachers in undergraduate health care professional training. Concerning chiropractic teachers' experiences of the meaning of the educational environment, 3 themes were identified: (1) motivating a vocational practice and modeling an ideal, (2) supporting and managing students in stress, and (3) including students in the community of chiropractors. The 3 themes describing physiotherapy teachers' experiences of the meaning of the educational environment were labeled as follows: (1) putting the pedagogical vision into practice, (2) balancing students' expectations, and (3) providing the prerequisites to grow within the profession. The teachers conceptualized the educational environment as comprising physical, organizational relational, communicational, and pedagogical aspects. The experiences, conceptualizations, and contrasts between the chiropractic and physiotherapy teachers are described in detail below, along with quotations from the interviews.

### *Chiropractic Teachers' Experiences of the Meaning of the Educational Environment*

Categories and themes relating to the chiropractic teachers' experiences of the meaning of the educational environment are presented in Table 1.

#### **Motivating a Vocational Practice and Modeling an Ideal**

The teachers in the chiropractic program experienced an environment in which theory was deliberately intertwined with practice as a means of further motivating students' theoretical studies as well as decreasing the perceived gap between theory and practice. There was an intention to create an environment that mitigated the effects of the transition to clinical studies through a progression in the program by continuously increasing clinical exposure. By so doing, the teachers felt comfortable that on completing the program, students would have acquired sufficient vocational knowledge, skills, and attitudes pertinent to an ideal professional.

“. . . it's foremost a practical profession, and you have to be very well prepared with facts and to know the 'when and what,' well . . . when to and when not to treat a patient and understand what you are treating." (CPT 3, female)

The teachers shared an understanding that not everything could be learned in undergraduate training and that an educational environment must enhance and encourage further professional vocational experience through real working life. They tried to craft a training environment that emphasized the core needs of a future chiropractic

practitioner in order to model ideal professional behavior. They believed that to be an apropos professional health care practitioner, factual knowledge was necessary, and therefore they emphasized factual learning, particularly in the earlier years. Teachers nevertheless were aware that real working life was seldom dichotomously black and white, that the environment should mirror this, and that it was therefore not conceivable to give students easy answers.

### Supporting and Managing Students in Stress

The teachers were aware that students' social situations diffused the educational environment. Students' pressured financial situations propelled them to take on part-time jobs, which, combined with their studies, were thought to result in stress. The teachers were ambitious about decreasing students' stress levels but did not always experience that they had the tools to do so, particularly as stressors were not always specific to schooling.

"It does not always have to do with the school environment. . . . Very often, I would say . . . well, it is personal . . . and part of real life." (CPT 1, male)

Nevertheless, the teachers also experienced that scheduling issues contributed significantly to student stress, thus negatively impacting the environment. Late and unexpected changes had been the norm for a long time, and the organization appeared to be unable to solve this problem. The teachers asserted that the smallness of the organization enabled fast and easy ways for modifications and decisions; however, some did not experience the authority to do so.

"I come here and do my work, the hours I have been consulted for, and I accept the amount of hours that my private clinical practice permits. But I do not really feel active in the core group of teachers, thus I have no real mandate to have inputs on changes." (CPT 3, female)

### Including Students Into the Community of Chiropractors

The teachers described how their profession had developed and evolved outside the locus of government-funded higher-education institutions, hence managing vocational training and professional education somewhat independently. This had led to a rather competitive culture among chiropractors. From the teachers' perspective, this competitive culture also seemed to rub off on the educational environment among students as they were influenced by teachers who could behave in an authoritarian way by "doing their own thing" or having a "this is how to do it" approach. However, some teachers seemed to have adopted a more humble attitude and tried an all-encompassing strategy to incorporate students into the community of professional chiropractors.

" . . . that all [students] are involved in the community, everyone should catch the boat, so to speak; well, at least for me that is the aim. I see it as a bit of a failure if you have a cohort of students and many of them drop off; I want them all to be my future colleagues." (CPT 5, male)

Since being alienated from the traditional public university setting and responding with the occasional attitude of self-sufficiency, the chiropractors felt a sense of togetherness, of belonging to a community and managing on their own, to some degree, also independently of other, more established health care professions.

### Physiotherapist Teachers' Experiences of the Meaning of the Educational Environment

Categories and themes relating to the physiotherapist teachers' experiences of the meaning of the educational environment are presented in Table 2.

### Putting the Pedagogical Vision Into Practice

The teachers in the physiotherapy program held a clear and communal pedagogical vision about student learning. They wanted to create an environment that facilitated student reasoning instead of delivering answers to their questions. The program had been designed for students to have a clear progression throughout their education and for students to learn from "real life" in the clinical setting.

" . . . everything in the program is connected and pedagogically structured; thus, our job must surely be to prepare and educate students for reality." (PTT 5, male)

Yet in the current environment, the teachers experienced challenges with putting the pedagogical vision into practice. This was experienced as being due to diversity among individual teachers (e.g., thinking and acting differently), and even though there was a communal pedagogical vision, there was an experience that some "older" peers taught according to tradition. Further, the program's complex logistics sometimes also made it difficult for teachers to reach their own high ambitions. In addition, the educational facilities were not always recognized as well suited for their purposes due to co-sharing spaces with other institutional programs.

"These facilities are not just tailored for our program. Three major programs share the premises, and I would say they're not appropriate for any of us." (PTT 3, female)

### Balancing Students' Expectations

The teachers experienced that students held overly high expectations of the educational environment in terms of both them as teachers and the overall program. Students were experienced as being pampered and served on a silver platter, and the teachers could sometimes feel the urge to

**Table 2 - The Meaning of the Educational Environment as Experienced by Physiotherapy Teachers: Overview of Categories and Themes**

Category	Theme
Teaching interest Desire to get all students on board Making theory real in practice Opportunity to practice Diversity among teachers Generational gap Complex logistics Challenging physical premises Challenging to address informal knowledge	Putting the pedagogical vision into practice
Parenting and pampering students Students reject factual learning Factual learning as a prerequisite Squeezed schedule Boosting students Repetition and reminders Young students	Balancing students' expectations
The penny drops eventually Program provides a professional beginning Asking increasing clinical training Challenge to design clinical education Support through student-teacher relationships Eager to feel ready at graduation	Providing prerequisites to grow within the profession

“entertain” them. To a certain extent, the teachers met these expectations and tried to provide good and informative introductions, to repeat what they had already conveyed, and to coddle students so there would be no need to address problems later.

“... on the other hand, there are many of us who feel that if we do not do this, it will come back to haunt us ... and we'll have to resolve the issue.” (PTT 6, female)

The teachers also sometimes blamed themselves for having cosseted the students and not succeeding in establishing an environment that propelled students to take more responsibility. Their intention was also to equip students with a high level of self-esteem and facilitate their ability to grow into their future professional role. However, they experienced that students were sometimes spoiled; for example, they did not show up for extra voluntary training when it was offered, even if they had themselves requested it, or they prioritized additional working over scholarly activities.

### Providing Prerequisites to Grow Within the Profession

The teachers experienced that students expected to become full-fledged professionals within the 3-year program. However, the teachers viewed this as unrealistic and argued that the students required real-life experience and further education to fully develop into professional

physiotherapists. As such, the short program provided an environment within which to evolve.

“Physiotherapists are anchored within a profession-based occupation, and it is a job that one very much grows into as an individual ... that is, believing in oneself and one's therapeutic role.” (PTT 4, male)

Likewise, the teachers found it problematic to understand students' rejection of factual overemphasis or that their teaching exaggerated the importance of factual learning, as they viewed factual knowledge as a fundamental professional platform. The teachers intentionally tried not to teach students “everything,” as this was experienced as impossible; instead, they tried to prepare them for a demanding professional working life. In their experience, the penny would eventually drop, and students' factual and theoretical knowledge would then prove useful.

“They always say that it is in the clinic that everything falls into place. Had they not acquired theoretical knowledge, it would not have clicked in the clinic either. But this—one does not understand until afterwards.” (PTT 3, female)

### Teachers' Conceptualizations of the Meaning of the Educational Environment

Interpreting the data, we found that the teachers conceptualized the educational environment as an abounding



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**Figure 1** - The figure depicts chiropractic teachers’ (CPT) and physiotherapy teachers’ (PTT) communal conceptualization of the meaning of the educational environment. The dimensions are illustrated with supporting quotes, elucidating different perspectives of what conceptually constitutes an educational environment, thus a multidimensional and abounding phenomenon as physical, organizational, relational, communicational, and pedagogical.

phenomenon. Five dimensions emerged, elucidating different aspects of what conceptually constitutes an educational environment, including physical, organizational, relational, communicational, and pedagogical attributes (Fig. 1).

The physical dimension was a self-evident part of the educational environment, both inherently and connotatively. The organizational dimension included a working climate and atmosphere with an ability to discuss challenging issues with peers, coworkers, and the management structure. It also included the size of student cohorts. The relational dimension was regarded as a cornerstone for the construction of an educational environment in which teacher–student and peer relationships were in the foreground. The communicational dimension, including

educational stakeholders’ ability to communicate as well as the dialogic atmosphere in the organization and the handling of information toward students, was regarded as highly influential in the educational environment. Finally, the pedagogical dimension was viewed as an integral part of the educational environment. The role of students, the approach toward motivating learning, and how teachers went about their task as teachers were thought of as influencing the environment.

**Contrasting Conceptualizations of 2 Educational Environments**

While all 5 aspects of the educational environment were to be found among both groups of teachers, these

**Table 3 - The Meaning of the Educational Environment as Conceptualized by Teachers**

Dimension	Chiropractic teachers	Physiotherapy teachers
Physical	Physical spaces that are available and can work as a model	Physical spaces to support reflection and feedback
Organizational	Togetherness among teachers to provide a high-quality education	Harmonious working climate and a shared responsibility for students
Relational	Relationships with students enable inclusion in the community	Relationships with students enable interactions for learning
Communicational	Close communication with familiar faces	Openness and transparency create safety
Pedagogical	Give students responsibility through encouragement and support	Students’ learning in the center with educational variation

dimensions had different contents and implications (Table 3).

The chiropractors emphasized modern, revamped, and “feel good” spaces available to students and teachers and highlighted the importance of a functional physical environment, in both formal and clinical environments, as an indicator of educational quality. They further believed that the school’s outpatient clinic could serve as a model environment for future chiropractic clinical practice. For the physiotherapists, while the physical environment meant having spaces for reflection and feedback, they did not necessarily have opinions about actual design. However, they emphasized the need for a greater variety of physical spaces, thus aimed at environments that nurtured and facilitated creativity and where information technology was more significantly utilized.

The chiropractors highlighted togetherness and coherence among teachers as an important organizational attribute of the environment. A close and familiar community of teachers was experienced as furnishing students with an environment encompassing apt and high-quality vocational education. Conversely, physiotherapists pointed to a harmonious and friction-free working climate and culture for employees and stakeholders within a suitable organization as an important aspect of the environment. A pertinent educational environment was viewed as having a reliable and trustable organization with a clear management structure. Both groups highlighted that the number of students in a group influenced the educational environment and that it was a privilege to teach small numbers.

As a constituent of the educational environment, relationships also held different connotations for the 2 groups of teachers. The chiropractors stressed good relationships with students to make them feel vocationally safe in their future professional role, to enable them to complete the program, and to assist them as they progressed toward being included in the community. This relational aspect implied the need for closeness though still maintaining integrity and an acknowledgment of the required distance between students, teacher, and peers. Conversely, the physiotherapists emphasized student relationships as a central aspect of learning and hence prioritized the facilitation of interaction with students in order for teachers to promote genuine reciprocity.

The chiropractors maintained that the small organization enabled close, prompt, and efficient communication with familiar faces as well as social presence. They further emphasized the creation of a stable environment in terms of forward planning and where students ventured to ask questions and express themselves. The physiotherapists, on the other hand, viewed pellucidity and openness as important aspects of the communicational environment where they wanted to experience an open attitude with management and educational leaders. Transparency and clarity regarding information to students were seen as a prerequisite for students’ ability to experience safety in the environment.

The chiropractors viewed accessibility and closeness to teachers as an important aspect of the pedagogical

environment. Thus, students were given responsibilities through guided support and encouragement. While the chiropractors experienced students as motivated, they saw them as having exceedingly high demands of educational quality. Conversely, the physiotherapists saw the pedagogical environment as placing student learning at the center and emphasized variation in teaching methods and styles. Students were viewed as resources but were simultaneously regarded as challenging.

## DISCUSSION

This study sought to explore and contrast chiropractic and physiotherapy teachers’ experiences and conceptualizations of the meaning of the educational environment. As the study involved a simultaneous inquiry into the 2 groups of teachers and the analysis performed in parallel, it was possible to reveal differences between the 2 groups of teachers’ understanding of the educational environment, an approach rarely seen, particularly among these 2 professions. As such, these findings are important, as they contribute to the theoretical and empirical discourse and deepen the understanding of educational environments in health care professional education. The empirical findings of this study aligned with prevailing knowledge about the phenomenon but also contributed with novel insights into certain aspects of educational environments.

The chiropractic and physiotherapy teachers experienced the meaning of the educational environment in different ways. The chiropractic teachers viewed vocational motivation, support for stressed students, and student inclusion in the professional community as core components of their educational environment, whereas physiotherapy teachers highlighted the pedagogical vision in practice, balancing students’ expectations, and the provision of prerequisites to grow within the profession as crucial. This reveals that the teachers might have distinguished between the opportunities and contexts in which they are supposed to operate. There are many differences between the chiropractic and physiotherapy programs that might help to explain our findings. The chiropractic institution is a small, privately funded educational institution specializing in training chiropractors outside the traditional publicly funded health care professional education system. This is reflected in our findings as the teachers share a common history of being outsiders; hence, being capable of managing on their own where they develop independence from other university-based health care professional education can be seen as a living “saga.” In the beginning on the 1970s, Burton<sup>30</sup> coined the term “organizational sagas,” that is, a shared understanding of unique achievements based on historical exploits of a formal organization, thus offering solid normative bonds inside and outside the organization. Globally, there are rare examples of chiropractic education in publicly funded universities.<sup>31</sup> Scholars have pointed out that the absence of a university-style tradition, coupled with a lack of access to government funding, has acted as a barrier to the development of the chiropractic profession.<sup>32,33</sup> The chiropractic teachers experienced their

program as having been built, over several decades, independently of the large publicly funded university tradition, with all its pros and cons. Hence, the teachers' experience was that the program has had to rely exclusively on its own resources, thus developing a dandelion profession that managed on its own. Moreover, students were responsible for funding their education and thus felt compelled to graduate without delay, which might provide an explanation for their stress levels. We have previously reported that chiropractic students experience different types of stress, particularly in the context of pressures and demands, which ought to be monitored so as not to transcend into negative stress.<sup>16</sup> Professional cultures are known to be of high influence in any organization,<sup>34</sup> and from the perspective of communities of practice, the extensive long-term development of diverse practices is not surprising.<sup>22</sup>

The publicly funded physiotherapy program is part of a large-scale medical university. Häger-Ross and Sundelin<sup>35</sup> have reported on the state of physiotherapy education in Sweden, highlighting its well-established and professional status within the health care professional education and service system. This was reflected in the teachers' expression of a clear top-down pedagogical vision as that emphasized by the university. As this was a large-scale organization, it might have resulted in the need for students to be taken care of, making teachers feel as if they were parenting them. Additionally, as the physiotherapy program is only 3 years long, this might reflect why teachers viewed the program only as the beginning of a professional journey. Nevertheless, differences between the 2 programs might not explain all differences when contrasting our findings from the 2 contexts. There might also be cultural differences between the 2 professions regarding teaching and learning, a point highlighted between medical and nursing students.<sup>36</sup> However, contrasting teachers' experiences of these 2 environments can be a first endeavor toward highlighting such cultural discrepancies.

In previous research, students from both programs have reportedly perceived support for stressed students as insufficient, teachers as authoritarian, and an overemphasis on factual learning.<sup>4,13</sup> In the present study, teachers did, in part, acknowledge these aspects as challenges for their respective programs. However, they also rejected some of the students' statements, suggesting that students perhaps did not fully understand the need for factual knowledge and did not understand that facts can be clinically contextualized and that this "aha!" experience would probably come with time. Yet Schumacher et al<sup>37</sup> have underlined that teachers and learners must attend to the reciprocal impact of constructing environments that are meaningful for learning. Conflicting experiences of the environment between students and teachers are not surprising, as they have entirely different perspectives and roles within the educational environment.

In exploring teachers' conceptualizations of the educational environment, 5 dimensions emerged: physical, organizational, relational, communicational, and pedagogical. Our findings align well with other scholars' ideas of

the environment, that is, as a context's aggregated physical, organizational, and social attributes, processes, and interactions,<sup>2,38,39</sup> conjointly with the individual characteristics of its stakeholders and members,<sup>22,40</sup> all contributing to the educational environment. We further complemented this conceptualization with the notion of a pedagogical dimension, a constituent that has perhaps occasionally been taken for granted in the scaffolding of educational environments.

The concept of the educational environment was connotatively aligned to the physical dimension of our participants' respective environments. Scholars have highlighted the importance of the physical aspect;<sup>41</sup> however, environmental features in health care professional education have been insufficiently explored both theoretically and empirically, as pointed out elsewhere.<sup>3</sup> From a communities-of-practice perspective, the physical spaces of the community are sometimes described as local neighborhoods, thus contributing to the creation of a web of relationships among community members.<sup>23</sup> Dynamic communities, rich with connections, happen both in public spaces and in one-on-one exchanges. Wenger<sup>42</sup> has postulated that the key to designing community spaces is to arrange activities in both public and private spaces that exploit the power of individual relationships to enhance events, using them to reinforce individual relationships.

Organizational aspects were at the fore of our participants' understanding as a component of the educational environment. Employing a community-of-practice lens implies that organizations should learn to foster and contribute to social learning systems that are both internal and external to organizational boundaries.<sup>22</sup> Further, significant emphasis should also be placed on the meaningfulness of participation in the organization. The organizational aspect of the environment is where teachers work and enact, therefore constituting an important attribute of the educational environment. It has been highlighted that the working climate of teachers, here considered in the organizational context, is inextricably immersed in the environment perceived by students and is a strong determinant of that educational environment.<sup>5</sup> We have previously reported that students experience organizational smallness as an important contributor to an educational environment that is pertinent for learning.<sup>16</sup> Likewise, our present findings indicate that teachers conceive that the organization of small groups is pivotal for apt educational environments, as this enables close exchanges between peers, teachers, and students.

Relational and communicational aspects emerged in this study as dimensions conceptualizing the educational environment. Although we consider these 2 dimensions in distinct ways, for the purpose of this discussion and in concurrence with the ideas of Grabinski,<sup>39</sup> we conjure these as social aspects of the environment.

Relational aspects were viewed by our participants as a primary feature in the construction of educational environments. Drawing from the work of Lave and Wenger,<sup>43</sup> a community of practice involves members in a set of relationships over time, as well as a shared

repertoire of ideas and commitments, and develops a number of procedures and vocabulary that, by some means, convey the specific knowledge of the community. Our findings illuminate that stakeholders' intrinsic relationships were in the foreground when the teachers conceptualized the educational environment, and interaction was advocated, as it binds people together and helps facilitate relationships and trust. In connection with this, it has recently been emphasized that the social and emotional aspects of the environment have much in common with the social networks formed by educational stakeholders.<sup>44</sup> We have also previously asserted on the basis of students' experiences that social integration and student-teacher interaction are pertinent to the educational environment.<sup>16</sup>

Communicational aspects in the context of the dialogic atmosphere were pivotal to the explored environments. The incorporation of clear communication channels among stakeholders has been regarded as a central constituent of the environment.<sup>16</sup> Our present findings also placed primacy on clear and sufficient communication and rapid exchange of knowledge within the community. Moreover, according to Tu,<sup>45</sup> communicating with others in a community involves creating social presence. In concurrence, our data suggest that social presence affects individuals' participation in a community.

Finally, pedagogical aspects were viewed as an integral part of the educational environment, that is, the role of students, the approach toward motivating learning, making learning contextually meaningful, and how teachers go about their task as teachers. We argue based on our findings that the teachers in this study conceptualized the educational environment in the context of a cohesive community-of-practice approach to teaching and learning, and this should be incorporated and reflected on in comprehensive investigations and discourses on educational environments. Within health care professional education, the organization and culture of individualism often result in teachers being confined and unaware of the practices of others. Cultivating pedagogical environments anchored in the tenets of communities of practice can thus be useful in augmenting health care professional training in educational environments. Wenger<sup>22</sup> and Bolander Laksov<sup>46</sup> have highlighted that if communities of practice around teaching and learning are developed, educational issues may become an enterprise, a goal of the community, which could enable teachers to integrate formal and informal knowledge in teaching and learning.

Interestingly, while teachers agreed on the dimensions conceptualizing the meaning of the educational environment, these held different connotations for chiropractic and physiotherapy teachers. In our interpretation, this also aligns with the differences between the 2 programs discussed above. As these teachers are part of 2 different organizations, cultures, and communities, they have established different preferences regarding how they conceptualized the meaning of the educational environment. For example, the chiropractic teachers emphasized togetherness among teachers as an important feature in their educational environment, whereas the physiotherapy teachers noted shared responsibility for students as

crucial in their large-scale university environment where other responsibilities might gain precedence. Arguably, the 2 groups had built their respective environment with different starting points, prerequisites, and goals though within similar parameters. Likewise, Bolander-Laksov et al<sup>47</sup> have reported on environments for clinical learning being dominated by different dimensions though also containing similar ones. To summarize, the 2 educational environments showed both similarities and differences, and understanding how the programs' structure and development shape the educational environment might simultaneously reveal their similarities and divergences.

### **Methodological Considerations**

The serene and open interview situation subsidized an expansive data set for the analysis. The richness of the data, conjoined with frequent debriefing sessions and investigator triangulation, enhanced the credibility of the results.<sup>24,26</sup> No software packages were used assisting the analysis, as we deliberately sought to investigate the underlying meaning in data and therefore performed analysis mainly through iterative peer discussions. Efforts were made to provide rich descriptions of the context and relate the findings to the communities-of-practice theoretical framework so as to enable transferability of the results to similar settings where the reader would form part of the validating process.<sup>48,49</sup> The interpretation of our results is subject to the limitations of all small-scale qualitative work. As qualitative research deals with detailed, in-depth analyses and resides within the constructivist paradigm, as opposed to as large-scale population-based studies residing within the postpositivistic paradigm, it is neither possible nor desirable to generalize the findings. However, the explicit description of the contextual setting, the participants, and analysis, together with the links drawn between the findings, theory, and the prevailing literature, may make it possible for the reader to transfer and appraise the applicability of our findings.

The 2 groups of teachers were interviewed by 2 different investigators, both novices to the explored contexts. This enabled a rich generation of data, as familiarity with the settings was initially limited. However, the 2 investigators' modes of interviewing were unsurprisingly discrete, and so too were the individual ways and procedures of collecting data; that is, the contrasts found between the 2 contexts might have been due to the data collection procedure. Consequently, all 4 members of the research group challenged each other as they analyzed the data, seeking to elucidate whether differences were due only to differences between the investigators or whether they were also anchored in the data.

### **Implications for Practice**

The need to investigate teachers' perspectives of the educational environment has been advocated by many. Although the investigation was undertaken in the context of chiropractic and physiotherapy health care professional curricula, the congruency of the results with existing

empirical findings, as well as their scaffolding to prevailing theoretical concepts, has strengthened our understanding that there are general practical and educational implications and issues relating to higher education at large. Our findings suggest institutions to formulate vision statements resonating with both students' and teachers' understanding of prevailing educational environments. Further, the multifaceted aspects of educational environments need to be recognized, for example, through the development of a shared understanding of the pedagogical assumptions underpinning an educational program.

### Future Directions

Future studies could explore the emerged themes to find commonalities with other health care professional environments and expand on the derived dimensions when conceptualizing the meaning of the educational environment. Individual perspectives of the environment, with regard to their relationship with institutions' educational and curricular goals, might in the future be explored, as this could elicit alternative perspectives. Also, exploring how cultural and historical aspects influence the underpinnings of educational environments could lend insights into why teachers experience environments differently.

## CONCLUSIONS

The current study focused on how teachers in 2 health care professional training institutions—chiropractic and physiotherapy—experienced and conceptualized the meaning of the educational environment. The findings conveyed a variance in the experience of the meaning of the educational environment, which can be attributed to contextual and cultural differences. It is thus reasonable to argue that the educational environment is not an all-encompassing, solitary, and static phenomenon but rather a dynamic phenomenon in a relentless state of flux, one revealing many communal transinstitutional features. However, teachers from 2 diverse academic contexts also held 5 common conceptualizations of the constituents of the educational environment: physical, organizational, relational, communicational, and pedagogical. Thus, the phenomenon explored contained aspects of pedagogical underpinnings influenced by a profession itself, teachers' approaches to students, and what the programs strived for regarding professional development. The findings can contribute to a deeper understanding of the phenomenon of educational environment and its constituents.

## ACKNOWLEDGMENTS

We would like to thank the teachers at both the Scandinavian College of Chiropractic and the physiotherapy program at Karolinska Institutet who participated in the study. We also extend our thanks to the directors of both programs who arranged and coordinated the interviews.

## FUNDING AND CONFLICTS OF INTEREST

There were no external sources of funding for this study, and no conflicts of interest were identified within the investigation.

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Concept development: PJP, ML, IL, KBL. Design: PJP, ML, IL, KBL. Supervision: PJP, ML, IL, KBL. Data collection/processing: PJP, ML. Analysis/interpretation: PJP, ML, IL, KBL. Literature search: PJP, ML. Writing: PJP, ML, IL, KBL. Critical review: PJP, ML, IL, KBL.

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## REFERENCES

1. Pace CR, Stern GC. An approach to the measurement of the psychological characteristics of learning environment. *J Educ Psychol.* 1958;49:269–277.
2. Moos RH. Conceptualizations of human environments. *Am Psychol.* 1973;28(8):652–665.
3. Edgren G, Haffling AC, Jakobsson U, McAleer S, Danielsen N. Comparing the educational environment (as measured by DREEM) at 2 different stages of curriculum reform. *Med Teach.* 2010;32(6):e233–e238.
4. Palmgren PJ, Lindquist I, Sundberg T, Nilsson GH, Laksov Bolander K. Exploring perceptions of the educational environment among undergraduate physiotherapy students. *Int J Med Educ.* 2014;5:135–146.
5. Genn JM. AMEE Medical Education Guide No. 23 (Part 1): curriculum, environment, climate, quality and

- change in medical education—a unifying perspective. *Med Teach*. 2001;23(4):337–344.
6. Genn JM. AMEE Medical Education Guide No. 23 (Part 2): curriculum, environment, climate, quality and change in medical education—a unifying perspective. *Med Teach*. 2001;23(5):445–454.
  7. Miles S, Leinster SJ. Comparing staff and student perceptions of the student experience at a new medical school. *Med Teach*. 2009;31(6):539–546.
  8. Rothhoff T, Ostapczuk MS, De Bruin J, Decking U, Schneider M, Ritz-Timme S. Assessing the learning environment of a faculty: psychometric validation of the German version of the Dundee Ready Education Environment Measure with students and teachers. *Med Teach*. 2011;33(11):e624–e636.
  9. McKendree J. Can we create an equivalent educational experience on a two campus medical school? *Med Teach*. 2009;31(5):202–205.
  10. Ostapczuk MS, Hugger A, de Bruin J, Ritz-Timme S, Rothhoff T. DREEM on, dentists! Students' perceptions of the educational environment in a German dental school as measured by the Dundee Ready Education Environment Measure. *Eur J Dent Educ*. 2011;16(2):67–77.
  11. Hegenbarth M, Rawe S, Murray L, Arnaert A, Chambers-Evans J. Establishing and maintaining the clinical learning environment for nursing students: a qualitative study. *Nurse Educ Today*. 2015;35(2):304–309.
  12. Palmgren PJ, Chandratilake M. Perception of educational environment among undergraduate students in a chiropractic training institution. *J Chiropr Educ*. 2011; 25(2):151–163.
  13. Palmgren PJ, Sundberg T, Bolander Laksov K. Reassessing the educational environment among undergraduate students in a chiropractic training institution—a study over time. *J Chiropr Educ*. 2015; 29(2): 110–126.
  14. Till H. Identifying the perceived weaknesses of a new curriculum by means of the Dundee Ready Education Environment Measure (DREEM) Inventory. *Med Teach*. 2004;26(1):39–45.
  15. Brown T, Williams B, Lynch M. The Australian DREEM: evaluating student perceptions of academic learning environments within 8 health science courses. *Int J Med Educ*. 2011;2:94–101.
  16. Palmgren PJ, Bolander Laksov K. Exploring chiropractic students' experiences of the educational environment in healthcare professional training: a qualitative study. *BMC Med Educ*. 2015;15(1):128.
  17. Strand P, Edgren G, Borna P, Lindgren S, Wichmann-Hansen G, Stalmeijer RE. Conceptions of how a learning or teaching curriculum, workplace culture and agency of individuals shape medical student learning and supervisory practices in the clinical workplace. *Adv Health Sci Educ Theory Pract*. 2015;20(2):531–557.
  18. Säljö R. *Learning in Practice. A Socio-Cultural Perspective*. Stockholm: Prisma; 2000.
  19. Schönrock-Adema J, Bouwkamp-Timmer T, van Hell EA, Cohen-Schotanus J. Key elements in assessing the educational environment: where is the theory? *Adv Health Sci Educ Theory Pract*. 2012;17(5):727–742.
  20. Creswell J. *Qualitative Inquiry and Research Design*. 3rd ed. Thousand Oaks, CA: Sage Publications; 2013.
  21. Illing J. Thinking about research: frameworks, ethics and scholarship. In: Swanwick T, ed. *Understanding Medical Education: Evidence, Theory and Practice*. West Sussex, UK: Wiley-Blackwell; 2010:283–300.
  22. Wenger E. *Communities of Practice: Learning, Meaning and Identity*. Cambridge, UK: Cambridge University Press; 1998.
  23. Wenger E, McDermott RA, Snyder W. *Cultivating Communities of Practice: A Guide to Managing Knowledge*. Cambridge, MA: Harvard Business School Press; 2002.
  24. Patton M. *Qualitative Research and Evaluation Methods*. 3rd ed. Thousand Oaks, CA: Sage Publications; 2002.
  25. Kvale S, Brinkmann S. *Interviews. Learning the Craft of Qualitative Research Interviewing*. 2nd ed. Los Angeles, CA: Sage Publications; 2009.
  26. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*. 2004;24(2):105–112. Epub 2004/02/11.
  27. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15(9): 1277–1288.
  28. Krippendorff K. *Content Analysis. An Introduction to its Methodology*. 3rd ed. Thousand Oaks, CA: Sage Publications; 2013.
  29. Watzlawick P, Bavelas JB, Jackson DD. *Pragmatics of Human Communication: A Study of Interactional Patterns, Pathologies and Paradoxes*. New York, NY: Norton; 2011.
  30. Burton CR. The organizational saga in higher education. *Admin Sci Quart*. 1972;17(2):178–184.
  31. Myburgh C, Hartvigsen J, Grunnet-Nilsson N. Secondary legitimacy: a key mainstream health care inclusion strategy for the Danish chiropractic profession? *J Manipulative Physiol Ther*. 2008;31(5):392–395.
  32. Myburgh C, Mouton J. The development of contemporary chiropractic education in Denmark: an exploratory study. *J Manipulative Physiol Ther*. 2008;31(8): 583–592.
  33. Murphy DR, Schneider MJ, Seaman DR, Perle SM, Nelson CF. How can chiropractic become a respected mainstream profession? The example of podiatry. *Chiropr Osteopat*. 2008;16:10.
  34. Hall P. Interprofessional teamwork: professional cultures as barriers. *J Interprof Care*. 2005;19(suppl 1):188–196.
  35. Häger-Ross C, Sundelin G. Physiotherapy education in Sweden. *Phys Ther Rev*. 2007;12(2):139–144.
  36. Liljedahl M, Boman L, Fält C, Bolander Laksov K. What students really learn: contrasting medical and nursing students' experiences of the clinical learning environment. *Adv Health Sci Educ Theory Pract*. 2015; 20(3):765–779.

37. Schumacher DJ, Englander R, Carraccio C. Developing the master learner: applying learning theory to the learner, the teacher, and the learning environment. *Acad Med.* 2013;88(11):1635–1645.
38. Heimstra R. Creating environments for effective adult learning. *New Dir Adult Contin Educ.* 1991;50:5–12.
39. Grabinski JC. Environments for development. *New Dir Adult Contin Educ.* 2005;108:79–89.
40. Armstrong JL, Yarbrough SL. Group learning: the role of environment. *New Dir Adult Contin Educ.* 1996; 71:33–39.
41. Hutchinson L. Educational environment. *BMJ.* 2003; 326(7393):810–812.
42. Wenger E. Communities of practice and social learning systems. *Organization.* 2000;7(2):225–246.
43. Lave J, Wenger E. *Situated Learning: Legitimate Peripheral Participation.* New York, NY: Cambridge University Press; 1991.
44. Isba R. When I say . . . micro learning environment. *Med Educ.* 2015;49(9):859–860.
45. Tu C-H. The measurement of social presence in an online learning environment. *Int J E-Learning.* 2002; 1(2):34–45.
46. Bolander Laksov K. *Learning Across Paradigms. Towards an Understanding of the Development of Medical Teaching Practice* [thesis]. Stockholm, Sweden: Karolinska Institutet; 2007.
47. Bolander Laksov K, Boman Engqvist L, Liljedahl M, Björck E. Identifying keys to success in clinical learning: a study of two interprofessional learning environments. *J Interprof Care.* 2015;29(2):156–158.
48. Larsson S. A pluralist view of generalization in qualitative research. *Int J Res Method Educ.* 2009; 32(1):25–38.
49. Savin-Baden M, Howell Major C. *Qualitative Research: The Essential Guide to Theory and Practice.* London, UK: Routledge; 2013.