Portraits of Persistence: Professional Development of Successful Directors of Clinical Education

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Background and Purpose. Directors of clinical education (DCEs) are academic physical therapists who coordinate the clinical education component of the curriculum. Their work occurs in 2 contexts, clinical practice and academia. Often they do not stay long in the DCE position, which contributes to the shortage of physical therapist faculty. The purpose of this study was to explore the professional development of successful DCEs.
Subjects. Six successful DCEs were identified through a process of peer nomination.
Methods. Data were gathered using semi-structured interviews and curriculum vitae review. Qualitative case studies were written for each participant. Cross-case analysis using constant comparative methods and a data matrix resulted in a model of DCEs' professional development.
Results. The final model included 6 themes: (1) responding to unexpected events, (2) match in interests and skills, (3) excitement for facilitating growth, (4) networking with colleagues, (5) supportive environments, and (6) mindful practice.
Discussion. Successful DCEs chose their position in response to unexpected events in their lives. They remained in the position because they were excited about learning and development and enjoyed being the bridge between academia and clinical practice. Administrative duties were among the least favorite aspects of their work. Participants had a web of formal and informal professional learning experiences; networking with colleagues was one of their most important learning methods. Supportive work environments enhanced their professional development which resulted in mindful practice.
Conclusion. The results of this study can be used to facilitate professional development of DCEs. Academic administrators can select DCEs who are excited about learning and development and willing to meet the expectations of academic faculty. Administrators can facilitate the professional development of DCEs by assisting them to develop as scholars and providing support personnel to assist with administrative duties.

Key words: Professional development, Director of clinical education.

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BACKGROUND AND PURPOSE

Directors of clinical education (DCEs) are academic physical therapists responsible for the clinical education component of a curriculum.[1,2] As liaisons between the university and clinical facilities, DCEs facilitate professional growth in clinical educators and assist with evaluating student performance and solving problems that arise during clinical education. Additionally, DCEs teach in the classroom, counsel students on issues related to clinical education, and participate in scholarly activity.[1-4] Because their work occurs in 2 contexts, clinical practice and academia, they face unique challenges.

The purpose of this study was to examine the professional development of successful DCEs. The following research questions directed the study: (1) What drives some DCEs to remain and become successful in the position?; (2) What professional development experiences are perceived by successful DCEs to be critical to their longevity in the field?; and (3) How have colleagues and mentors contributed to the professional development of successful DCEs?

Literature Review

A concept map was used to develop a conceptual framework for the study after reviewing literature on DCEs, creation and use of professional knowledge, and continuing professional development, including faculty development (Figure 1). The conceptual framework was used to guide data collection and analysis. Concept maps provide a visual display of ideas and the hierarchical and heterarchical relationships between them.[5,6] Concept maps have been used to define and find connections between concepts in qualitative data and as a teaching tool to help adult students build knowledge.[7,8]

Directors of clinical education. Several researchers examined the background, role, and work of the DCE through survey research and described positive and negative features of the position.[4,9-11] Clouten,[9] whose survey included individuals who had left the position within the previous 10 years (n = 63) as well as those currently serving in the position (n = 170), asked about participants' backgrounds before becoming DCEs and their reasons for accepting the position. Two thirds of all respondents came to academia from clinical positions, and all had previous experience as clinical educators. Respondents reported they chose the position because of the job responsibilities and because they were ready to do something different. In comparison to other physical therapy faculty, DCEs were more likely to consider themselves to be in a "trial or entry-level position."[9(p37)]

As faculty members, DCEs have responsibilities in the areas of teaching, scholarship, and service.[1,12] In addition to planning, implementing, and assessing the clinical courses, DCEs may teach classes in a specific area of expertise. Coordinating the clinical education component of the curriculum includes designing the courses,[13] defining expectations for student performance during clinical experiences,[14] interpreting student performance evaluations completed by clinical faculty and assigning grades,[12,15,16] developing accommodations for students with disabilities during clinical experiences,[17] and intervening when students demonstrate unprofessional behaviors during clinical education.[18] Clinical teaching is usually conducted outside of the classroom, either at a clinical facility or through use of electronic means.[12] Researchers have found that even though DCEs spend more than half of their time in clinical or classroom teaching, responsibilities in the area of service may be

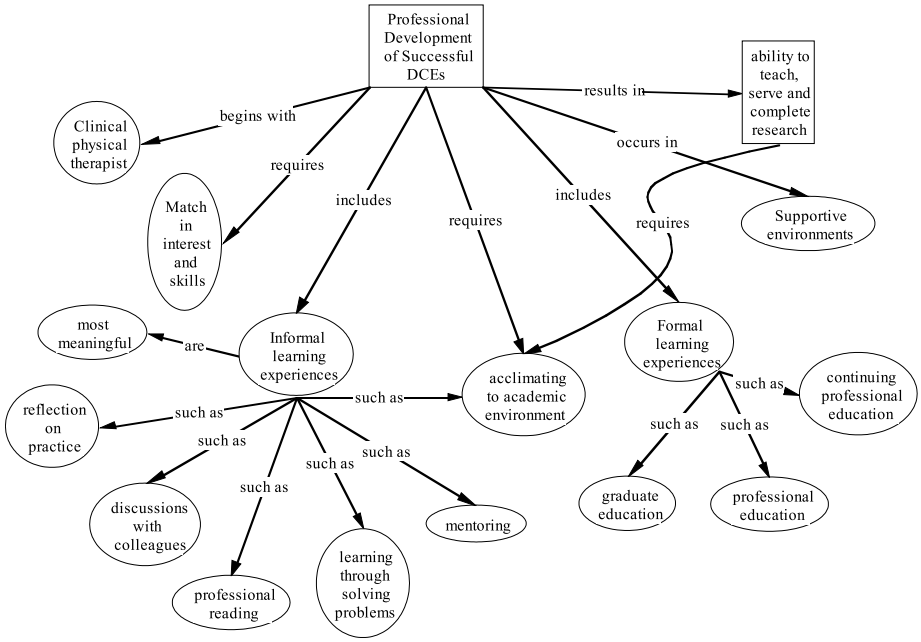
overwhelming and administrative duties can be the largest part of the job.[4,9,19-21] Because of the nature of DCEs' work, they have been described as misfits in academia[3] and warned that they may become "extinct in physical therapy education."[22(p412)]

Researchers have also examined DCEs' job satisfaction. Clouten[9] reported that the variety in job activities, working with clinicians, and seeing growth in students were among the most attractive features of the position. Travel to clinical facilities was among both the most and least attractive features of the position. Thompson[11] surveyed all current DCEs at accredited programs (n = 104) and found a high level of job satisfaction. Harris et al[10] also surveyed all DCEs (n = 112) and found a high level of overall job satisfaction among DCEs, especially with the areas of the job that met their needs for "self-esteem, creativity, and achievement."[10(p962)] Interestingly, they found a high level of job dissatisfaction in the fewer than 5% of respondents who had doctoral degrees; the authors hypothesized that the respondents' dissatisfaction may be due to their inability to meet their full professional potential. Researchers reported that DCEs were less satisfied with the administrative duties related to the position,[2,4,9,20] which were described as being among the least attractive features of the position.[9]

Most DCEs have been socialized into a clinical world that focuses on teaching, advising, and meeting the needs of patients or students[9,23] and continue to work in the context of clinical practice while adjusting to academia. At the time of this study, only 10% of DCEs had doctoral degrees.[24] Since the majority of novice DCEs come from clinical positions,[9] spend significant amounts of time in clinical or classroom teaching,[4,20] and may not have advanced degrees that prepare them to be researchers,[21] they may need assistance to be successful in academia.[22,23]

Professional knowledge creation and use. In academia and clinical practice there are different expectations for professional success and different views on knowledge use and creation.[25] Technical knowledge, also called codified knowledge, is created in the world of academia, outside of the context of practice. In academia, technical knowledge is valued more than practical knowledge, and teaching and learning are seen as presenting and acquiring technical knowledge.[25] To gain technical knowledge, DCEs are advised to complete formal coursework in education, counseling, administration, and interpersonal communication.[26] To be successful in academia, DCEs are expected to develop scholarly agendas and contribute to technical knowledge.[1]

Figure 1. Initial Conceptual Framework



Practical knowledge, valued by clinicians, is created within the context of practice to solve problems being faced immediately.[25,27] Practical knowledge is more likely than technical knowledge to produce a change in personal practice habits.[25] To be effective in the context of health care practice, DCEs must develop practical knowledge so that they can assist clinical instructors to design learning experiences that allow students to reinterpret technical knowledge and develop practical knowledge.

Professional development. A variety of learning experiences contribute to professional development.[28] Similar to other health professionals, DCEs' formal learning experiences include their entry-level physical therapy education, postprofessional education, and participation in continuing education courses and professional meetings.[7,9,29-32] As DCEs make the transition into academia, they may participate in formal faculty development activities.[9, 33] Researchers have found that physical therapists view participation in continuing education as an important aspect of professional growth and maintenance of professional competence.[28,34,35] In both the clinical and academic worlds, DCEs may have assigned or informal mentors who assist them with projects, introduce them to influential individuals, or sponsor them for positions in professional organizations.[36-39]

Additionally, successful DCEs learn through a variety of informal methods.[28] As health professionals, DCEs learn through professional reading,[40,41] interactions with colleagues or mentors,[34,42-46] solving work-related problems,[47] and reflection on their professional practice.[27,48,49] Informal learning experiences are more meaningful because they are more likely to occur simultaneously with practice and result in practical knowledge.[27,29,43,50] DCEs' formal and informal learning experiences influence their ability to be successful in the position and to contribute to physical therapy clinical education through teaching, research, and service.

Often, DCEs have served as faculty for fewer years than other core faculty. Loss of the DCE contributes to the faculty shortage facing physical therapist education programs. At the time of this research, DCEs at accredited physical therapist education programs had served as core faculty a mean of 7.8 years, while other faculty had served a mean of 10.1 years; some physical therapist education programs reported as many as 3 faculty vacancies.[24] Recent research found a faculty vacancy rate of nearly 7% in accredited physical therapist education programs[51] with administrators reporting from 0-6 current faculty vacancies.[21]

Even though some DCEs do not stay in the position long, others have been DCEs for several years. Survey research examining all DCEs has provided valuable information about the role and work of the DCE and factors affecting their job satisfaction.[9-13,15,19] Despite the valuable information in these studies, the results do not adequately portray the unique experiences of individual DCEs who have dealt with the challenges and become successful in the position. Therefore, this study examined the professional development of successful DCEs.

Table 1. Analysis of Categories of Scholarship[59]

Category	Definition	Met through:
Scholarship of Discovery	Creation of new knowledge—research	Peer-reviewed publications or presentations in any subject area Book chapters
Scholarship of Integration	Integrating ideas from within and without physical therapy into larger patterns—research	Peer-reviewed publications or presentations in any subject area Book chapters
Scholarship of Application	Using knowledge to solve real-life problems—service	Service activities in clinical education at the national level that lead to development of documents such as guidelines or consensus conference summaries Publications or presentations that focus on solving current problems in physical therapist education
Scholarship of Teaching	Excellent teaching combined with evaluation and assessment of one's teaching and student's learning—teaching	Receiving awards for teaching Credentialed trainer for APTA Clinical Education Credentialing Course[58] Publications or presentations related to teaching

Table 2. Description of Participants

	Education	Current Work Setting[a]	Years of DCE Experience
Amy	Bachelor of Science in Physical Therapy Master of Science in Physical Therapy	Doctoral/research university—extensive	6
Maureen	Bachelor of Science in Physical Therapy Master of Science in Therapeutic Science Doctoral student in Educational Leadership	Master's comprehensive I university	14
Lynn	Bachelor of Science in Physical Therapy Master of Science in Education	Master's comprehensive university with an academic medical center	11
Sarah	Bachelor of Science in Biology Certificate in Physical Therapy Master of Arts in Education	Doctoral/research university—extensive with an academic medical center	14
Claire	Bachelor of Science in Athletic Training Master of Science in Physical Therapy Doctor of Philosophy in Educational Psychology	Doctoral/research university—extensive	17
Kathy	Bachelor of Science in Biology and Chemistry Master of Science in Physical Therapy Doctoral student in Psychology in Education	Master's comprehensive university with an academic medical center	16

[a]University descriptions are based on the 2000 Carnegie Foundation's Classification of Institutions of Higher Education.[72]

SUBJECTS

Approval for the study was obtained from the Northern Illinois University Institutional Review Board. Purposive sampling was used to find successful DCEs who met the criteria for critical cases.[56,57] Participants were identified through nominations from credentialed trainers for the APTA Clinical Instructor Credentialing course.[58] Because the qualities of successful DCEs had not been defined, the request for nominations asked respondents to describe the characteristics of successful DCEs, including length of service in the position, and to provide names of individuals who demonstrated the criteria they had given. The majority of respondents focused on defining personal characteristics while acknowledging that successful DCEs must meet their institution's expectations for teaching, research/scholarship, and service. Believing that respondents would nominate only DCEs demonstrating the necessary personal characteristics, I chose to use years of service and participation in teaching, research/scholarship, and service to define success as a DCE.

For this study, successful DCEs were defined as those who had served in the position for at least 3 years and who demonstrated activity in at least 3 areas of scholarship.[59] Respondents to the request for nominations reported that 3-5 years of service in the position were required to develop meaningful relationships with members of the clinical community. Since most physical therapist professional education programs are 2-3 years in length,[24] serving as DCE for at least 3 years meant that participants had managed the challenges and problems faced by 1 class-cohort through all clinical experiences. Additionally, DCEs who had served at least 3 years were beyond the novice stage of teaching.[24,60,61] Considering the first 3 years of teaching as the novice period has precedent in the work of other authors. Zaslow[62] selected faculty members with 2 years of experience in her study examining novice teachers in physical therapist and physical therapist assistant education programs ranging in length from 2 to 3 years. Johnson et al[63] found significant changes in confidence and performance during teachers' second year, and Mager and Myers[61] found significant changes during teachers' first 3 years in the classroom. Finally, considering length of service in the position as a criterion for subject selection has precedent in the work of Jensen et al,[64] who categorized beginning physical

therapists as those with fewer than 3 years experience in their study of novice and expert physical therapists.

In order to remain in an academic position and become successful, DCEs must meet the professional expectations of their institution and complete scholarship or research in addition to teaching and community or professional service. To determine if participants demonstrated success as scholars or researchers, their scholarly contributions were assessed using Boyer's[59] categories of scholarship (Table 1).

The list of nominees was reviewed for individuals nominated more than once. For convenience, participants were limited to those living in the Midwest. Six DCEs were invited to participate (Table 2) and all agreed and sent their curriculum vitae for review. Informed consent was obtained and confidentiality was maintained through the use of pseudonyms and removal of any identifying information from the final report. All participants were women, which is not unexpected since, at the time the study was conducted, 84.3% of all DCEs were women.[24] Participants represented 3 private and 2 public institutions; 2 participants served at the same institution. The sample was limited to 6 so that in-depth interviews could be conducted and comprehensive case summaries written for each participant.[53] A Curriculum Vita Inventory (Appendix 1) designed by the researcher was used to determine whether or not nominees met the criteria for participation and to create an outline of participants' professional development.

METHODS

A comparative case study design was used to examine the research questions. The case study design allowed the uniqueness of each individual's professional development to be described in written case summaries.[52,53] Using multiple cases strengthened and enhanced the transferability of the final results,[54] since similar themes were found in the individual case summaries despite differences in institutional context.[55] This article presents the results of the final cross-case analysis of all 6 cases.

Data were collected through semi-structured interviews using an interview guide (Appendix 2) based on the conceptual framework (Figure 1). Face-to-face interviews, between 90 minutes and 2 hours in length, were conducted at locations chosen by the participants. A paid transcriptionist transcribed the audiorecorded interviews. I reviewed the transcripts for accuracy and to capture the emotions of the interview.

Data Analysis

During review of the written transcripts, information was coded by categories using a process of open coding[65] and the constant-comparative method of data analysis.[66] Case reports were prepared for each participant. After participants reviewed the initial drafts, the case reports were revised based on their feedback. Analysis of the reports continued during revision. Second drafts of the reports with descriptions of the emerging themes were sent to the participants, who were asked to comment on the themes as they had been defined at that point. Also, 6 experienced physical therapist faculty volunteers assessed the case reports for trustworthiness of the findings. Each faculty volunteer reviewed one case report to determine if there was adequate support for the themes and conclusions drawn. Final drafts of the case reports were prepared based on additional information sent by participants and feedback from the faculty reviewers. After the final case reports were prepared, concept maps were used to organize and structure the data in each case report.[53] Developing the concept maps allowed the researcher to find the important ideas or concepts from each interview, describe the relationships between concepts, and integrate data from various parts of the interview into themes. The concept maps were the basis for outlines used for writing the 6 final case summaries, which included descriptions of the themes for each participant.[53]

Cross-case analysis began after the individual case summaries were completed. The transcripts were again reviewed and data were organized in a data matrix using all of the categories that had emerged during analysis of the individual cases.[57] The visual display of the matrix made it possible to compare and contrast the individual responses and to determine the overall findings related to the research questions. Using a concept map, the final, overall conceptual framework (Figure 2) was created to illustrate professional development of the DCE. Information from participants' curriculum vitae, the interviews, and participants' published works was compared for consistency to verify the results further and strengthen the final model.

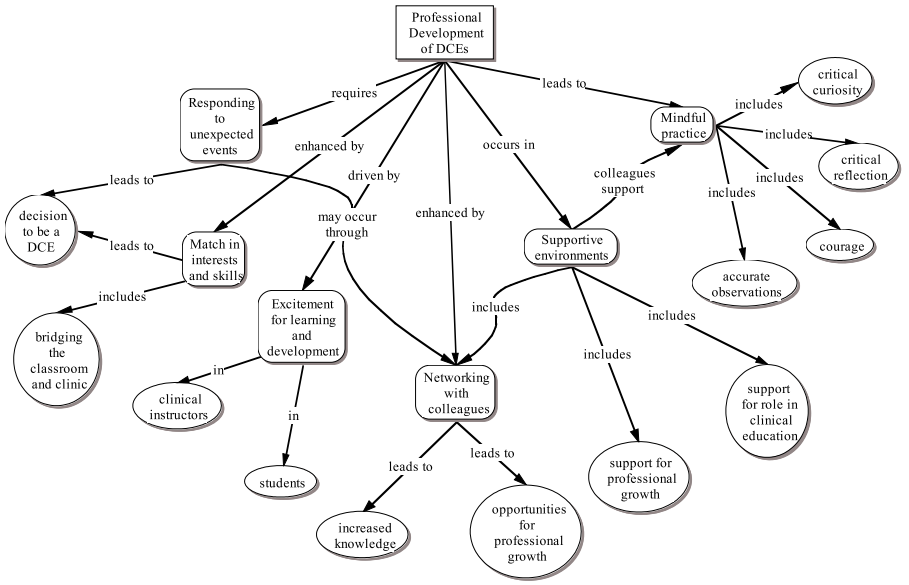
RESULTS

Data analysis revealed that the professional development of the participant DCEs involved a web of interconnected experiences, rather than following an organized, sequential process. The themes that emerged during data analysis are: (1) responding to unexpected events, (2) match in interests and skills, (3) excitement for learning and development, (4) networking with colleagues, (5) supportive environments, and (6) mindful practice (Figure 2).

Responding to Unexpected Events

All participants indicated that they had not planned to pursue the position of DCE, but were prompted to do so by other people or by unexpected life events. One participant, Kathy, summarized the importance of her response to unexpected events. She initially said that opportunities were available for her because she was "in the right place at the right time." After pausing, she explained, "I think in fairness to myself, I took advantage of opportunities. I sort of put myself in an en-

Figure 2. Final Conceptual Framework: Model for Professional Development of Successful DCEs



vironment and took advantage of what came my way." She indicated that many opportunities had arisen for her because she was "curious" and willing to try new things, and repeated the importance of her willingness to accept challenges and take risks when she stated, "I never waited until I felt ready to do something."

Match in Interests and Skills

All participants had accepted the position of DCE because they thought the work would be challenging and a match with their interests, abilities, and skills; they remained when they found it to be true. All participants described the DCE as the link or bridge between the clinical and academic worlds. Lynn described the role of the DCE this way:

> *I think good DCEs, not just the ones that use DCE as a stepping stone into academia, those who are really interested in clinical education, are motivated by different things. Their challenges are different. They're looking, I think, at the profession as a whole. They're looking at the challenge of mixing and mingling the clinical component with the academic part. Being a bridge and doing that successfully is what drives them.*

Participants emphasized that DCEs who focus on administrative tasks rather than on facilitating growth in students and clinical instructors would not grow in the position and would be more likely to "burn out." According to Kathy, "I'm interested in the education, not the nuts and bolts. If I had to focus on the nuts and bolts I would have been done in 2 years because that's not fun to me."

Participants had gained the knowledge and skills needed to be successful in several ways. All participants had completed advanced graduate study in topics related to education, which increased their understanding of teaching and learning, reinforced their ideas about clinical learning and the structure of effective clinical education programs, and provided new directions for growth by improving their skills as researchers. Claire captured this idea well:

> *I think my doctoral education was tremendous. It had a lot of impact on my development. Really being immersed in theories and research about learning and development helped me understand what I had been doing in the past wasn't bad at all, actually. I've always taught in mock clinic courses; I love watching the students change during those courses; it's like all of these light bulbs going off! Why they're learning so well is borne out by research and theory about learning.*

In addition to formal education, participants had learned through experiences. They began building the knowledge and skills required to be successful DCEs as clinicians. All had been clinical instructors (CIs) and had learned the powerful influence of the CI and clinical environment on students' knowledge. Maureen reported that as a CI she had seen students struggle to use their didactic knowledge in the clinical context. She described what occurs during clinical education this way: "The CI reshapes whatever knowledge we taught [in the classroom] in the new context." Lynn described some of what she had learned about clinical education while serving as a center coordinator of clinical education (CCCE):

> *As CCCE, you see so much, you see things in students that could have been fixed a long time ago if someone had the courage to face it. I just got real committed to not having that happen with students, trying to teach staff that they don't do students a favor by not dealing with their problems or issues.*

The DCEs in this study reported that they enjoyed their work because it matched their interests and skills. To them, their work focuses on student and CI development and being a bridge that carries information between the clinical and academic worlds. The participants had gained the skills and knowledge they needed through working in all aspects of clinical education and through graduate education.

Excitement for Learning and Development

Each participant discussed her excitement for facilitating learning in students and CIs. Their individual interests focused on students' clinical learning, students' development as professional physical therapists, and facilitating growth in clinical educators.

Participants described the enjoyment they received from watching students grow into mature, responsible physical therapists. Seeing students mature and become effective physical therapists was described by Lynn as "the good thing about clinical education." Speaking of students in general, Claire reported,

> *I know they've shaped my professional development with the different challenges, the personal crises, and how I manage them, and balance what needs to happen personally with what can or cannot happen professionally at this time in this person's life.*

All participants discussed how they had been changed by working with exceptional students, including students with disabilities, students performing above or below expectations, or students facing personal challenges.

Participants' emphasis on facilitating student learning had influenced their career decisions. Kathy and Claire had accepted positions in developing programs to design clinical education programs that they believed would enhance students' learning. For Kathy, this change required moving to a new city. She accepted the challenge after being promised an administrative assistant to handle the "repetitive, tedious administrative tasks" involved in managing a clinical education program so that she could focus on the creative aspects of the position. Claire accepted the challenge to move to a new university and create a new clinical education program when her colleagues and department administrators resisted changes she thought would improve students' learning.

Participants described various qualities tied to their professional values and personal experiences that they felt were important for physical therapists to develop. Several participants described their conviction that all physical therapy faculty members must be involved in developing students' ability to practice safely and ethically. Sarah emphasized the importance of developing responsible, professional physical therapists who are able to make positive contributions to society. She described her vision for physical therapy this way:

> *I think my vision for physical therapy is we'll always be wonderful if we can find a really good thing to do for society. I truly think that's the right place for us to be going. I think my vision is [that] we need to make physical therapy meet a very important need for society. If we can do something important for society, then there will always be a need for us.*

Maureen reported that her work as a pediatric physical therapist and experiences caring for friends and family members as they were dying had influenced her to emphasize students' ability to care for vulnerable people.

> *My mother was in hospice, and a close friend was in hospice. I sat with my friend almost around the clock for the last five days of his life and was with him when*

he died. And I realized how much of who we are as people is still present at the end, and that even though we're dying, we're still alive; and how do we make use of that quality of life? If we're all about quality of life, doesn't it matter, the last five days? There were a lot of things I did instinctively to comfort him and my mother that I had learned as a PT. Like touch and massage and positioning and just doing some range of motion so they don't feel all stiff and helping transfer that person so that they can get up in the wheelchair one last time to sit in the family room with people. The most basic part of our practice, nothing fancy at all. No sophistication at all. But what's sophisticated is the relationship that the therapist has with the patient and putting the patient first in the relationship.

Because the participants understood the importance of effective clinical teaching, they also enjoyed assisting physical therapists to become effective clinical teachers. They described the enjoyment they received from teaching and training physical therapists to serve as CIs. Lynn reported that she especially enjoyed working with clinicians because they were adult learners. Each participant was involved in CI training; 5 were Credentialed Trainers for APTA's Clinical Instructor Education and Credentialing Program.[58]

Networking With Colleagues

Participants discussed how much they had learned through interactions with colleagues in physical therapy and in other disciplines. The benefits of networking included increased knowledge about clinical education and the work of the DCE, as well as opportunities to participate in service activities or collaborative research. All participants stressed the importance of being connected to other DCEs. According to Sarah,

The relationship with other DCEs is really important. The relationship with DCEs in the local community was an important venue for my development because it made me believe that what I was seeing was not just happening here. I knew that there were other people dealing with the same issues and it made me feel not alone. I think that the state consortium was a group of people who worked and wanted to make clinical education better, and I think that was a way to develop myself. At our lunches, people relax and chat, a lot of stuff happens. I think that was useful.

Four participants were part of a clinical education team in their departments. They suggested that sharing responsibilities improved the quality of their decision-making, made their workload more manageable, and improved communication with clinical facilities. Participants who did not share responsibilities described DCEs across the country who they considered to be part of their support network. Having worked both as a solo DCE and co-DCE, Lynn reported:

After having the co-DCE experience, I decided that it was the only way to go. You have some very difficult issues that you deal with. I'm not afraid to make decisions, but I'm even better if I have the opportunity to discuss it with someone else. It's much better to have the opportunity to discuss within a group, with others who are aware of the issues, who are going to listen to be sure that you are on the right track. I think it's absolutely wonderful!

Although mentorship was not a universal experience, all participants described people who had influenced and facilitated their professional development. Participants began developing their learning networks as physical therapist students. Included in their networks were their CIs, other DCEs and physical therapy faculty locally and across the country, faculty from several disciplines who had been involved in participants' graduate education, and students. When they were novice DCEs, participants had learned about their new role by talking with other DCEs. Later, participants used members of their learning networks to help them gain new abilities, such as research skills.

Participants whose learning networks included DCEs across the country connect with them via telephone, e-mail, or at national meetings. According to Amy, professional meetings provide a venue for her to connect with colleagues:

The thing I love about national meetings is networking. Seeing clinicians and center coordinators that I may not have seen that year, talking to people about, what are you doing [and] how are you dealing with this issue? I don't go so much for the programming, I have to admit.

Kathy also emphasized the importance of learning through discussions with colleagues:

There's not been a meeting I've attended that's changed me. What changes me are those private conversations in the bar, having lunch, or dinner, or coffee. It's the private, one-on-one conversations where I think there's really movement that changes what I do.

Networking with colleagues in academia and clinical practice was a rich source of learning for the successful DCEs. Through interactions with the members of their learning networks, the DCEs have learned more about their work and been challenged to think critically about what they do.

Supportive Environments

The professional development of successful DCEs occurred in supportive environments. Participants stressed the importance of having colleagues and department administrators who understood and supported their work as DCEs. Having supportive colleagues influenced some participants to remain at the same university for several years; a lack of support caused others to move to new positions.

The support given to the DCEs took different forms. Tangible support included financial assistance for travel to clinical sites and professional meetings and provision of time and support personnel to assist with administrative tasks so that the DCEs could focus on facilitating students' learning and developing the creative aspects of the position. Participants also described less tangible means of support for their work and professional development. One participant discussed the importance of having colleagues "who are thinkers … who can rise above the tasks." Sarah discussed the importance of having colleagues who were committed to excellence in all that they do:

This institution has a very rich environment. People feel empowered to do really well because the reputation is that this is a really good place. The group of people who work here are very talented and creative, and it's really fun.

As liaisons with the clinical facilities, participants believed that all faculty must assist students with developing appropriate professional behaviors and prevent harm to patients by addressing problems before students begin clinical education. Finally, participants emphasized the importance of colleagues who support their recommendations when difficult decisions must be made about students' ability to progress through the curriculum. Their professional development had led to mindful practice.

Mindful Practice

Mindfulness is a "flexible state of mind in which we are actively engaged in the present, noticing new things and sensitive to context."[67(p220)] Mindful practice allows

professionals to solve problems using both personal knowledge, which may be tacit, and explicit, propositional knowledge.[68,69] To use their personal knowledge, professionals must pay attention to their own physical and mental processes while focused on the needs of the other party.[68] Mindful practice allows health professionals to provide high-quality, relationship-centered care and find the best solution for patients' needs. Study participants demonstrated several characteristics of mindful practice: gathering information through accurate observations; courage; critical curiosity; and critical reflection.

First, participants were able to combine information from their observations with research-based knowledge to help them solve problems. They: discussed decisions they had made in response to observations of and conversations with students, clinicians, and other DCEs; described the ways in which they were contributing to the current research literature; and reported on ways in which research-based knowledge had contributed to their practice. Maureen discussed the importance of observing quietly before attempting to solve a problem.

> *I'm always struck by how much better I do, how much more effective I am, if I can step back, observe the situation, listen, reflect, and trust other people to solve their own problem. With the CI and the student, all I really need to do is listen and ask questions and the problem solves itself. I always do a better job when I'm not trying to fix things for other people.*

Study participants also described ways in which they had demonstrated courage. They had made difficult decisions about students' ability to progress and served as students' advocates. Amy addressed inequities in her department's performance review process with the department chair, and Kathy and Claire moved to other institutions in order to implement changes that they believed were best for students and clinicians.

Finally, participants demonstrated critical curiosity and critical reflection. Participants said they were always looking for a better way to do things because they were never completely content with their programs. They described events that had required them to critically examine their assumptions about clinical education and search themselves for any biases they might have. Describing one such event, Maureen said,

> *When we started not having enough clinical spots and were barely able to place everybody in a spot, I clearly recognized that I wasn't able to say that I was distributing resources fairly. Somebody was going to be placed in a prejudicial way because of some bias I possess. So I shifted to a lottery, having talked with other clinical educators.*

Participants had made career decisions in order to learn more about clinical learning and to build better clinical education programs, had conducted research studies to explore new ideas, and had changed their practice in response to what they learned.

DISCUSSION

Analysis of the data within and across cases led to responses to the research questions. The first research question was: What drives some DCEs to remain in the position and become successful in the position? In response to unexpected events, participants had chosen to accept the DCE position. They had remained in the position because they believed it was a match for their interests and skills and because they were excited about learning and development, supporting the findings of Clouten[9] and Harris et al.[10] Participants enjoyed being a bridge between academic departments and clinical facilities, carrying information between the 2 contexts. Their interest in facilitating growth in students and clinical instructors drove them to remain in academia and continue developing as academic physical therapists. Participants made career decisions in order to improve students' learning experiences, completed research studies examining students' clinical learning and their development of professional behaviors, and completed postprofessional studies in education to learn more about the process of learning. Participants reported that administrative duties were among their least favorite aspects of the role, reinforcing Clouten's work.[9]

The second research question asked: What professional development experiences are perceived by successful DCEs to be critical to their longevity in the field? The DCEs described a web of professional learning experiences. They acknowledged the influence of formal education on their overall career direction, similar to expert physical therapists,[36] yet, similar to expert nurses,[43] physicians,[46,48] and clinical physical therapists,[42] they emphasized the importance of informal learning experiences, such as critical reflection on practice and interactions with colleagues. Participants reported that networking with colleagues from the contexts of academia and clinical practice[38,39] was an important learning method for them, supporting the work of Pagliarulo and Lynn,[33] who found personal feedback to be among the most preferred methods for faculty development by physical therapy faculty.

The final research question asked: How have colleagues and mentors contributed to the professional development of successful DCEs? As stated, networking with colleagues was an important learning method for the DCEs. Everyone discussed relationships that influenced their careers even though formally defined mentoring was rare.[70] Optimal professional development occurred in supportive work environments where administrators and peers understood the DCEs' work.

Unexpectedly, the study results identified that the professional development of successful DCEs results in mindful practice, an integrated process of making decisions using explicit knowledge about an individual and problem, tacit knowledge gained from practice, and personal knowledge about one's self as a professional.[68] The major elements of mindful practice demonstrated by participants were as follows: critical reflection on one's actions and the ability to gather information through accurate observations, and the demonstration of courage and critical curiosity.

Limitations

The use of a purposive sample and case study design limits the transferability of the results. To overcome this limitation and increase its usefulness, the final framework came from comparative analysis of all 6 cases. Participants had worked as DCEs at a variety of universities. The descriptive case summaries,[53] combined with the profiles of the participants (Table 1), enhance understanding of the context of the study and allow readers to determine whether and how the results apply to their situation. Additionally, member checks of the case reports and the case summaries were conducted by the participants, and experienced physical therapist faculty reviewed individual case summaries for trustworthiness.

CONCLUSION

The professional development of successful DCEs includes a combination of formal and informal learning experiences. Professional development requires the ability to learn from professional practice and from colleagues, clients and students; it is driven by DCEs' professional values, personal experiences, and perspective of their work. Learning from professional practice requires DCEs to act thoughtfully when there is limited information to assist decision making or to combine information gathered through

observations with technical knowledge to solve problems. Learning is most effective when DCEs are able to reflect critically and make any needed adjustments in practice. Learning from practice may require being challenged by others to think in new ways. DCEs' learning networks contain people with a variety of expertise and experience. As DCEs progress through their professional development, conversations and discussions with trusted colleagues become important sources of learning.

This study highlights the importance of selecting DCEs who are excited about facilitating learning in others and who are willing to learn and to meet the expectations for academic faculty members. To assist novice DCEs in their professional development, academic administrators can stress the differences between the expectations of academia and professional practice and provide the resources needed to develop as scholars. The process of faculty development can begin during the interview if the administrator clearly states the demands of the job. Once DCEs are hired, administrators can continue to assist them by developing and implementing a plan to facilitate the acquisition of any missing abilities[71] and provide support for networking with colleagues. To allow time for scholarly work, administrators can provide support personnel to assist with repetitive duties and decrease DCEs' administrative workload. By helping novice DCEs develop a plan for growth, administrators can demonstrate their support and increase the likelihood that they will be successful and remain in academia. Further research is needed to explore mindful practice and practical knowledge among DCEs.

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Appendix 1. Curriculum Vita Inventory

Name: Pseudonym:
Age: Gender:

EDUCATION

Professional education completed:
Highest degree before beginning academic position:
Highest degree completed:

SCHOLARLY RECORD

Articles	PT Journals	Allied Health Journals	Other journals
Peer-reviewed	(# pub)	(# pub)	(# pub)
Non-peer-reviewed			
Books			
Book Chapters			

Presentations	PT Meetings				Allied Health Mtgs				Other Meetings			
	state	reg	nat	int	state	reg	nat	int	state	reg	nat	int
Peer-reviewed												
Non–peer-reviewed												

RESEARCH GRANTS
SERVICE ACTIVITIES
AWARDS/RECOGNITION FOR TEACHING
ACADEMIC CAREER PATH (description)

Appendix 2. Interview Guide

1. What prompted you to become a DCE?
   How would you describe the process of your growth from novice to present?
   How did you learn what a DCE does and how to do it?
   How did you learn to solve the problems a DCE faces?
   What is the most important thing you have learned through your work as a DCE?

2. What events or activities had the greatest impact on your professional development as a DCE?
   For each event, describe what happened.
   For each event, describe the impact on your development.

3. Who are the people who have had the greatest impact on your professional development as a DCE? (Teachers, colleagues, students . . . .)
   Describe your interactions with each person.
   Describe the impact of each person on your professional development.

4. How would you describe the atmosphere in your current department? What influence has the department had on your professional development?

5. Is there anything outside of your professional life that has particularly affected your development as a DCE?

6. Reviewing your life as a DCE, what advice do you have for novices?

7. Is there anything else you want to tell me about your development as a DCE?