THE DOCTOR OF PHYSICAL THERAPY DEGREE: A NEW CURRICULUM FOR A NEW DEGREE

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ABSTRACT

By 2020, all graduates of accredited physical therapy programs will receive the Doctor of Physical Therapy (DPT) degree. Bachelor degrees in physical therapy are no longer granted, and over 83% (N = 176 accredited programs) of the entry-level physical therapy education programs already grant the DPT degree. The purpose of this article is to highlight the significant curricular changes that have taken place in most physical therapy education programs as they have transitioned from a masters degree to the level of the clinical doctoral degree culminating in the DPT. A summary of the key philosophical elements and practical considerations that drove the development and implementation of the University of Colorado curriculum as the transition to the DPT occurred are highlighted. Focusing on the curricular changes in one accredited entry-level Physical Therapy Program allows for a clearer understanding of the evolution of physical therapy as a discipline within the context of healthcare delivery and the provision of PT services in multiple settings and environments, including school-based physical therapy practice. Once the DPT level physical therapist has the additional knowledge and skills necessary for school-based practice, and gains experience in this unique practice setting, it can be assumed that he/she will demonstrate an advanced level of clinical decision-making that will be a

benefit to the students receiving PT as a related service and to the rest of the school team.

INTRODUCTION

Professional level education in physical therapy has evolved at an unprecedented pace. Based on the forces affecting change in physical therapy practice and physical therapy education, the progressive mission of physical therapy educational programs can be stated as the professionalization of physical therapy and the implementation of the Doctor of Physical Therapy (DPT) degree (Forsyth & Danisiewicz, 1985). As this progressive mission becomes actualized, there has been an ambitious transition from Master's (MS or MPT) entry-level programs to DPT entry-level educational programs. Entry-level education refers to the degree or educational level at which a person enters a given profession. Forces contributing to this change in educational level include a shift in the culture of medicine and delivery of care to one in which an understanding of the patient belief systems, community-based assessment and intervention, and advocacy for patients is required for excellence in practice (Threlkeld, Jensen, & Royeen, 1999). Additionally there is a demand for effective patient/client management including the ability to examine, diagnose, predict prognosis, intervene, and provide patient-family education quickly and accurately (Plack & Wong, 2002).

Traditionally, doctoral education has been used to describe levels of advanced education and training obtained beyond the point of entry into the profession that culminate in a higher degree (Benoit, Mohr & Shabb, 2004). However, there is trend observed in other healthcare fields including nursing, pharmacy and audiology that has resulted in a shift or transition to clinical doctoral education programs, and the resulting clinical doctoral degree, as a means of entering of the profession. The Doctor of Physical Therapy (DPT) is an entry-level postbaccalaureate, professional degree that is earned following completion of an accredited education program. The recipient of the degree is prepared to enter the profession upon exhibiting and demonstrating specific knowledge, skills, and behaviors commensurate with the *Guide to Physical Therapist Practice* (2003a) and the elements of Vision 2020 supported by the American Physical Therapy Association (APTA). Bachelor degrees in physical therapy are no longer granted, and accreditation of baccalaureate programs ceased in 2002.

Despite the slow demise of the baccalaureate level programs when the profession moved from a bachelor to a masters degree as the entry-level requirement in the 1980s and 1990s, the PT education programs granting masters degrees have waned relatively quickly over the past decade. By 2003, 89 (approximately 43%) programs had made the transition from masters to doctoral education, and, as of May 2007, there are 176 programs (83%) at the doctoral level with only 34 MS/MPT programs (17%) remaining in the United States (current data is updated regularly at www.apta.org). Now that most entry-level physical therapy education programs are granting the DPT degree, the few programs still offering a MS or MPT degree are either transitioning to the DPT or closing their doors at a rapid rate (APTA, 2005).

As physical therapist education programs have moved to the level of a clinical doctoral degree, admission requirements have continued to expand as well. Admission to most DPT Programs now requires a baccalaureate degree, adequate GRE scores, references, documented volunteer experiences observing physical therapy, and prerequisite coursework in upper division sciences, psychology, and mathematics. The purpose of this article is to highlight the significant curricular changes that have taken place in most PT education programs as they have transitioned from a master's degree to the level of clinical doctoral degree which culminates in a DPT degree. In order to demonstrate these changes, the process used to develop and implement a new curriculum at the University of Colorado will serve as a model for this transformation. A summary of this transition affords a clearer understanding of the evolution of physical therapy as a discipline within the context of healthcare delivery and the provision of PT services in multiple settings and environments, including school-based physical therapy practice.

Physical therapists who work with students in schools are part of the team of related service providers. They have continuous interaction with teachers, school administrators, and multiple other professionals throughout the school day. All of their focus is on the students who are receiving physical therapy as a related service designated as part of their Individualized Education Program (IEP). As a result, physical therapists need to be prepared to function as part of a larger team to support the education of students with disabilities. Their ability to collaborate and interact with other team members includes an underlying assumption that the team will have a base of knowledge regarding each other's disciplines, preparation, and expertise that they may share with each other to create a more effective team (Utley & Rapport, 2000). Thus, by sharing information about the educational preparation of physical therapists, and the new paradigm for the Doctor of Physical

Therapy degree, other related services team members may better understand the skills and strengths a physical therapist brings to their team.

PROGRAM TRANSITION

The University of Colorado PT Program began this paradigm shift over 7 years ago to make the transition from a masters degree in PT as part of the Graduate School on the Health Sciences Center campus, now known as the University of Colorado at Denver and Health Sciences Center (UCDHSC). While appreciating the external forces creating change, and the professional momentum within physical therapy to transition to a doctoral degree (i.e., the DPT), the faculty at the University of Colorado became committed to the redesign of overall program philosophy and curriculum as part of this change.

In order to prepare physical therapists to exhibit the highest standards of healthcare, to use evidence, and to be thoughtful and effective within the constraints of the health care delivery system, an additional year was added to the University of Colorado Physical Therapy Program. The addition of time and credit hours on to the existing masters degree programs was common practice by physical therapy education programs as they made the transition to the DPT degree (Rothstein, 1998). This additional year provided much needed time to integrate a new educational philosophy within both the didactic and clinical portions of the PT curriculum (e.g., clinical education expanded from 23 to 46 weeks). The expanded time helps to insure that graduates are prepared to be practitioners who are competent to meet the broad societal needs for physical therapy services now and in the future. This expansion of the program is consistent with national trends in physical therapy education and other programs that have moved from the masters to the doctoral degree (Benoit, Mohr & Shabb, 2004; Gwyer, Odom & Gandy, 2003).

Faculty in the PT Program at UCDHSC discussed the trends and forces shaping professional practice and education, including ideas and reflections from many leaders in academic physical therapy, nursing and medical fields who have contributed to the practice of educating health care students. Their expert knowledge, derived from education, research and practice has led to approaches and models of education that are germane to the changes in health care delivery. The outcome of these discussions centered around philosophy and development of the University of Colorado DPT curriculum as influenced by several leaders (Barrows, 1993; C. DeRosa, personal communication, 2003; Gwyer, Odom & Gandy, 2003; Jensen, Gwyer, Shepard &

Hack, 2000; Platt, et al., 2001; Sackett, Strauss, Richardson, Rosenberg & Haynes, 2000; Sellheim, 2003). For example, Sellheim's study (2003) investigated factors that influenced the quality of student learning by examining two approaches: deep and surface learning. Implications from Sellheim's study included: 1) evidence that physical therapy students prefer the deep approach to learning; and 2) physical therapy educators need to better understand the effect of context on learning.

In addition, a key to the development of the University of Colorado DPT curriculum came from the work of Jensen et al. (2000) and the qualitative multiple case study research design conducted by these authors to identify the dimensions of clinical expertise in physical therapy practice. Subjects were twelve physical therapy expert clinicians. As a result of the analyses of these case studies, Jensen et al. (2000) developed a theoretical model of expert practice in physical therapy that included the following four dimensions: 1) a dynamic, multidimensional knowledge base that is patient-centered and evolves through therapist reflection, 2) a clinical reasoning process that is embedded in a collaborative, problem-solving venture with the patient, 3) a central focus on movement assessment linked to patient function, and 4) consistent virtues in caring and commitment to patients (Plack & Wong, 2002). These characteristics describe how data on the practices of clinicians impacted the development of our professional curriculum, as it was structured to provide graduates with a solid foundation in each of the four dimensions outlined by Jensen et al. (2000).

Implementation of the new educational model within the University of Colorado DPT program required a shift in educational methods from some of the more traditional approaches whereby information is delivered from an authority to passive recipients within traditional lecture and laboratory settings. In more current models of education, the student is an active participant in the learning process, facilitating the ability of the student to embrace the deep learning approach of Sellheim (2003). To this end, a concerted effort is made to incorporate active learning, especially in the clinical management courses. For example, in many of these courses, some percentage of the content is learned through problem-based methods (Jefferson, 2001; Kaufman, Portney & Jette, 1997; Solomon, Binkley & Stratford, 1996). This inclusion of problem-based learning was designed to assist students to develop skills necessary for life long-learning.

CURRICULUM DESIGN

The challenge to the DPT Program was to structure a curriculum that incorporated the theoretical dimensions discussed above within its philosophy and also to implement these and other theoretical constructs throughout the actual educational process. Following extensive and focused discussions, analysis of available literature, and exploration with faculty within the University of Colorado School of Medicine, School of Nursing, and PT colleagues external to the University, a curriculum was developed that incorporated these constructs both implicitly and explicitly.

Key Curricular Elements

Four central aspects of the curriculum are discussed in the sections that follow. These areas highlight the types and extent of change that have taken place in the development of the new DPT curriculum:

1. Patient-centered care practice
2. Functioning within a doctoring profession
3. Use of evidence and critical thinking in clinical decision-making
4. Application of movement science in clinical practice

Patient-centered care describes a philosophy of care designed around the patient's goals, concerns, and need for information (Platt et al., 2001). The PT strives to understand the whole person including emotional needs and life issues. Together the patient and therapist find a common ground regarding problems and management. Smyth (1962) provided this suggestion for effective intervention: "To know what kind of person has a disease (or disability) is as essential as to know what kind of disease (disability) a person has."

Physical therapy education at UCDHSC has evolved and moved beyond the predominant disease-centered clinical encounters to embrace this patient-centered philosophy.

The patient-centered philosophy is emphasized beginning in the first semester of the curriculum in Foundations in Physical Therapy as students are paired with community volunteers who have disabilities. They explore, with the assistance of the volunteers, the meaning of living with a disability. The students go on to develop a three year relationship with their volunteer, and they have specific targeted activities that are met throughout the curriculum. The experiences and assignments are designed to assist students to appreciate the patient's perspective of living with a disability, including the social and emotional consequences, navigating the health care system, and managing their lives in a society that is predominantly focused on persons without disability.

A patient-centered focus is threaded throughout the entire three year DPT curriculum. For example, patient-centered care is incorporated into didactic courses and has been an important measure of success when students are assessed through a standardized patient examination. Standardized patients are individuals who are trained to simulate a patient's illness and behaviors in a standardized way (Barrows, 1993). Use of the standardized patient provides a unique way to assess student competence in applying knowledge, performing skills, and demonstrating professional behaviors.

The doctoring profession was a second key element to the expanded DPT curriculum. A growing body of literature within medicine outlines the characteristics of a doctoring profession (APTA, 2003b; C. DeRosa, personal communication, 2003; Plack & Wong, 2002). The meaning of a doctoring profession for physical therapy has evolved as a result of several physical therapy initiatives linked together to create Vision 2020, endorsed and supported by the APTA House of Delegates in 2000, as the vision statement that would lead the profession forward for the next 20 years. This concept of a doctoring profession, which comes with the award of a clinical doctoral degree, is similar to that observed in other healthcare professions and is not unique to physical therapy (Benoit, Mohr & Shabb, 2004).

In recent years, there have been increasing numbers of physical therapy programs developing service learning within required curricula (Villiage et al., 2004). The National Service-Learning Clearinghouse defines service learning as: "Service-learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities." (http://www.servicelearning.org) With a commitment to having the graduates of the University of Colorado DPT Program enter the field of physical therapy with the professional awareness and social responsibly expected by society, service learning has been incorporated into the new curriculum. Service learning combines service objectives and learning objectives with the intent that the activity changes both the recipient and the provider of the service. This was accomplished by combining service tasks, such as an accessibility project, with structured opportunities that link the task to self-reflection, self-discovery, and the acquisition and comprehension of values, skills, and knowledge content.

Evidence-based practice and critical thinking form the third key element of the DPT curriculum. Use of evidence and clearly articulated critical thinking in making clinical decisions are hallmarks of the doctoring profession (Sackett, Strauss, Richardson, Rosenberg & Haynes, 2000). The APTA has set criteria for the core value of excellence in physical therapy practice

including the following: consistent use of current knowledge and theory, understanding of the person's limits, integrating judgment in the patient/client perspective, embracing advancement, challenging mediocrity, and working toward development of new knowledge (APTA, 2003b). The University of Colorado DPT curriculum affords the student numerous opportunities to reflect on actual examination choices and intervention outcomes, integrate research evidence into the clinical decision making process, and practice clinical decision making with a variety of patient problems in the classroom and clinical environment (Gillardon & Pinto, 2002).

Application of movement science in clinical practice forms a fourth key element of the DPT curriculum. Movement science is the core of physical therapy practice. Courses focused on movement science education begin during the first semester of the DPT curriculum with patient-centered observational analysis. Not only do students begin to develop observational skills of the movement itself (Gill-Body, 2000), but from the beginning they develop awareness of the goal of the functional movement, the environmental context in which movement takes place, and meaningful patient attributes (e.g., behavioral, cognitive, physical) (Schenkman, Deutsch & Gill-Body, 2006; Shumway-Cook & Woollacott, 1995). This initial experience is followed by carefully structured experiences in which the student's ability to observe and interpret movement dysfunction is honed using a structured observational movement analysis format (Schenkman & Rugo de Cartaya, 1987).

Clinical Education Component of the Curriculum

With the change to the three year curriculum came the opportunity to expand the clinical education component from 23 to 46 weeks. This piece of the curriculum was carefully designed to reflect the integration of the didactic portion of this curriculum, reinforcing the four dimensions of expert physical therapy practice within a doctoring profession. With additional time devoted to learning in clinical and community settings coupled with specific learning objectives, students are able to actually experience the expanded roles of the physical therapist.

Attention was applied to promote reciprocal learning to and from classroom, clinic, and community settings through the clinical education program. Changes in the length and timing of the clinical experiences were designed to reflect the theoretical elements described by Jensen, et al. (2000), Sellheim (2003), and others. Anecdotal feedback from several of the clinical sites indicates that the DPT students are better prepared for their clinical affiliations and the timing of these experiences within the program is working well. Even so, there is ongoing assessment by faculty, students, and

the clinical sites related to student performance and the best schedule and length for clinical experiences.

Use of the Standardized Patient for Assessment

One of the novel aspects of the University of Colorado DPT Program is inclusion of the standardized patient for assessment. The use of standardized patients in medical and nursing school curricula has been well described in the literature (Chalabian & Dunnington, 1997; Vu, Barrows, Marcy, Verhulst, Colliver & Travis, 1992; Yoo & Yoo, 2003). Standardized patients are only now being implemented within physical therapy curricula, with few reports found in the physical therapy literature (Black & Marcoux, 2002; Hale, Lewis, Eckert, Wilson & Smith, 2006; Ladyshewsky, Baker, Jones & Nelson, 2000; Ladyshewsky & Gotjamanos, 1997). In our curriculum, students are assessed using the standardized patient at the end of the first year in the program and again at the beginning of their third year. Standardized patient physical therapy cases have been developed to explicitly assess the student's ability in the following areas: 1) implementation of patient-centered care; 2) critical thinking; 3) application of movement analysis; and 4) clinical skills. Cases for the third year assessement reflect the students' evolution in their ability to use a cumulative, integrative patient-centered approach to examination, evaluation, diagnosis, prognosis and intervention.

Faculty Development

In designing and implementing the DPT curriculum, it was imperative that the University of Colorado PT Faculty embraced the key philosophies we espoused to be the core of our Program. To this end, the faculty have worked together closely as a team, sharing expertise in key areas (e.g., patient-centered care, movement analysis, clinical decision making). Additionally, on multiple occasions faculty worked with leaders in PT education from other institutions, to enhance understanding and implementation of specific facets of the doctoring profession, and they continue to embrace this process at professional meetings and conferences. Finally, specific targeted educational opportunities for clinical instructors have been developed as opportunities to enhance the ability of clinical instructors to effectively mentor University of Colorado DPT students during their clinical affiliations.

IMPLICATIONS FOR SCHOOL-BASED PHYSICAL THERAPY

As the demands for health care delivery have shifted, the newly implemented curriculum at the University of Colorado DPT Program has been designed to accommodate the philosophical shifts in education required for successful integration into the doctoring profession. This philosophical shift is supported by the ideas and models that have been well articulated by colleagues in physical therapy and other medical professions. This curriculum was designed to instill students with an understanding that both the patient-centered care approach and the ability to demonstrate complex reasoning skills in conjunction with the integration of relevant scientific knowledge are required to be a physical therapist. This curriculum also provides students with skills needed for the engagement in reflective practice that will result in deliberate, moral action and with skills and enthusiasm for lifelong learning. This educational design, complemented by our emphasis on embracing the physical therapy core values and exhibiting the professional behaviors, is commensurate with the new level of education commitment expected by a professional holding a clinical doctoral degree.

Understanding the complexity, as well as the focus, of the clinical doctoral degree, or DPT, in physical therapy education will allow school administrators and other members of the related service team in schools to value the contributions of the DPT. The recent graduate of a DPT Program will be well prepared as an entry-level physical therapist, and have the breadth and scope of skills and knowledge required of a generalist practitioner. Most entry-level physical therapists are not well-prepared to assume employment in school-based practice without additional education, training, or mentorship (Rapport & Effgen, 2004). It is only through additional educational opportunities, on-the-job experiences, or definitive mentorship that the DPT becomes a school-based PT who possesses the competencies recognized as essential for the school setting (Effgen & Chiarello, 2007).

Concerns have been raised by physical therapists currently working in schools, and in other clinical settings, as they wonder whether their new PT colleagues graduating and entering the profession with the DPT will be accepting of their mentorship as more experienced clinicians despite the differences in their academic degrees. While there is no evidence to determine whether or not a person with a new DPT degree will reach out to their more experienced colleagues, we can surmise that new graduates will continue to seek mentorship from their more experienced counterparts regardless of the degree each possesses.

Just as related service providers from a variety of disciplines each bring different qualities "to the table," it is likely that a physical therapist with a DPT will bring their own expanded knowledge base to the school-based team and the children on their caseload. Once the new DPT graduate has an opportunity to apply the additional knowledge and skills necessary for school-based practice, and then gains experience in this unique practice setting, he/she will demonstrate a level of clinical decision-making that will be a benefit to the students receiving PT as a related service as well as the rest of the school-based team. As part of the team, the physical therapist collaborates to determine goals and interventions appropriate for the student. The scope of practice of physical therapy is developing an expanding through the DPT curriculum, and the school-based related service providers, other IEP team members, and the students with disabilities will be the recipients who benefit directly from this professional degree transition.

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