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“Finis Origine Pendet” – Enhancing Later Learning and Professional Socialization Through an Introductory DPT Course

Kyle P. Meyer, PT, MS, MPA

Patricia A. Hageman, PT, PhD

Robert H. Fuchs, PT, MA

Amy E. Tyler, PhD

Gregory M. Karst, PT, PhD

Division of Physical Therapy Education, University of Nebraska Medical Center

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Abstract

Background and Purpose: In developing a new Doctor of Physical Therapy (DPT) curriculum, the faculty at a mid-west academic health sciences center decided to introduce course content historically placed near the end of the program's Master of Physical Therapy curriculum at the beginning of the DPT curriculum. The new DPT curriculum was constructed to promote the value of three central themes; 1) evidence-based practice and 2) patient-centered care, both of which contribute to 3) sound clinical decision making. Faculty theorized that by explicitly expressing these themes in a first semester, introductory course, students would acquire a much needed framework for categorizing and integrating future knowledge, and would begin the professional socialization process earlier in the curriculum. The purpose of this report is to describe the new course and provide quantitative and qualitative data regarding the course outcomes. **Methods:** Quantitative data were gathered via a survey administered to 75 students, 37 who had completed all three years of the program and 38 who had completed the second year of the program. In addition, qualitative data were gathered from first year student essays summarizing the course and describing its influence on their perceptions of the field. **Results:** More than 80% of second and third year students agreed or strongly agreed that the course had met all of the primary objectives outlined by the faculty. Essays from first year students also supported many of the purposes envisioned in the development of the course. **Conclusion:** These outcomes suggest students can value and comprehend more advanced content early in allied health curricula and that the early introduction of such content may aid in organizing subsequent learning and professional socialization.

Introduction

Finis origine pendet – the Latin axiom attributed to the Roman poet Manlius, translates “the end depends on the beginning.”¹ While this adage could aptly apply to any number of situations, it captured for the faculty of a physical therapy education program at a mid-western academic health science center the essence of a significant change in curricular philosophy that resulted in the development of an introductory course in a new, entry-level Doctor of Physical Therapy (DPT) curriculum. The course was specifically designed to provide students with an early conceptual framework for the remainder of the curriculum and to facilitate more rapid professional socialization. The rationale behind the change in curricular philosophy, the structure and content of the new course, and outcomes data from the first three classes participating in this course are detailed in this report.

Many health professions education programs organize and deliver curricular content using a traditional format. Specific to physical therapy education, the traditional curricular model often begins with anatomy and physiology courses, followed by courses in the various areas of physical therapy theory and practice, and culminating with clinical education experiences.² Generally speaking, this content correlates with the first, second and third year of the professional education program. The

traditional curriculum, supported by a conventional pedagogy, is built upon the basic assumption that "learning is a rational, orderly and sequential process."^{3,4} In line with this assumption, curricular content is often delivered from the relatively simple to the complex, resulting in physical therapy curricula that tend to deliver more advanced content in research, management, and the health care system near the end of the curriculum, often just prior to the culminating clinical education experiences.³

Associated with any given view on teaching and learning are particular teaching strategies based on the assumptions underlying that view.⁵ In the case of a conventional pedagogy, it is assumed that instructors who are content experts deliver subject content via lectures directed toward achieving pre-determined learning objectives. This may result in learning that is less than optimal because these teaching strategies fail to offer context, and therefore relevance, for the material.⁶ The conventional pedagogy views knowledge as organized and delivered in parts by the instructor. Theoretically, once the learner has acquired these parts, they can be coalesced into the complex whole. Throughout the ten years of the entry-level Master of Physical Therapy (MPT) curriculum offered at a physical therapy education program at a mid-western health sciences center, faculty had consistently identified some students' difficulty in accomplishing this outcome. Faculty noted that even at the completion of the program some students demonstrated difficulty examining issues critically, integrating information from the various courses, and generalizing information from one area of practice content to another. Additionally, students' primary interests seemed to involve the "hands-on" patient care courses, while content in other areas (e.g., management, research, health care system) was often perceived as being of less value. The phenomenon noted by the faculty has been aptly summarized by Kneebone in his description of medical education:

Medical teaching relies heavily on the presentation of isolated nuggets of information. The task of creating an overarching structure of knowledge with which to make sense of these nuggets is then left to each student. An obvious danger is that this may not happen, and that students will form a fragmented view of learning, assiduously collecting unrelated shards without knowing how to create a conceptual whole that allows them to practice what they have learned.⁷

During the conversion from an MPT curriculum to a DPT curriculum, faculty examined the assumptions underlying the traditional construction and delivery of curricular content and determined the need to create an introductory course that provided an explicit "overarching structure of knowledge."⁷ Consequently, *Foundations of Physical Therapy Practice* (hereafter *Foundations*) was developed and placed in semester one of the new 125 credit hour DPT curriculum. The course was designed to accomplish two purposes. The first was to provide students with a conceptual framework for understanding the "big picture" of the profession of physical therapy. This framework was intended to serve as a mechanism for anchoring and organizing future course content. To this end, the course contained curricular content that had historically been covered in the latter stages of the program's MPT curriculum. Secondly, the course was intended to define for the students the core values of the faculty and the profession at the outset of the curriculum. These values were summarized as 1) evidence-based practice and 2) patient-centered care, both of which contribute to 3) sound clinical decision making. Faculty speculated that by assisting students in acquiring a broad conceptual understanding of the profession, their professional socialization would also be enhanced.⁸⁻¹⁰

Foundations Course Overview

The 3-credit-hour course included five modules; 1) finding, evaluating, and using evidence, 2) physical therapy clinical decision-making and the use of the *Guide to Physical Therapist Practice*, 3) theories of health behaviors, including factors that influence patient adherence and compliance, and cultural differences in health behaviors, 4) the structure of the American healthcare system, including documentation requirements, billing and coding, and 5) a conceptual foundation for observation and movement guidance skills used in physical therapy. Table 1 provides a specific overview of the content areas covered within each module of the course.

Table 1 Content of 3-credit hour course, Foundations of Physical Therapy Practice

Course Module	Module Topics	Contact Hours
Finding, Evaluating, and Using Evidence	<ul style="list-style-type: none"> • Introduction to evidenced-based practice • Types of evidence 	2
	<ul style="list-style-type: none"> • Peer review process • Evaluating arguments 	2
	<ul style="list-style-type: none"> • Search techniques for pertinent databases and internet sites (types of sites and evaluating quality of sites) 	2
	<ul style="list-style-type: none"> • Types of research • Structure of a research paper • Reliability and validity • Comparison of research papers 	4
Use of the <i>Guide</i> and Clinical Decision Making	<ul style="list-style-type: none"> • Introduction to clinical decision making • Patient/Client Management model 	2
	<ul style="list-style-type: none"> • Components and use of the <i>Interactive Guide to Physical Therapist Practice</i> 	3
	<ul style="list-style-type: none"> • Disablement concepts and models 	3
Theories of Health Behavior	<ul style="list-style-type: none"> • Theories of health behavior • Healthy People 2010 	2
	<ul style="list-style-type: none"> • Determinants of health behavior 	1
	<ul style="list-style-type: none"> • Influence of culture on health behaviors • Factors affecting adherence to treatment programs 	2
	<ul style="list-style-type: none"> • History of physical therapy 	2
American Healthcare System	<ul style="list-style-type: none"> • Current practice issues in physical therapy (e.g., POPTS, direct access, Vision 2020) 	2
	<ul style="list-style-type: none"> • Introduction to healthcare economics • Healthcare delivery mechanisms 	2
	<ul style="list-style-type: none"> • Introduction to reimbursement processes (documentation, coding and billing) 	3
	<ul style="list-style-type: none"> • Personal space issues • Positioning and draping lab 	1
Observation and Movement Skills	<ul style="list-style-type: none"> • Observation skills; lecture & lab 	3
	<ul style="list-style-type: none"> • Movement guidance skills; lecture & lab 	4

The course uses two primary resources; the APTA *Interactive Guide to Physical Therapist Practice* Version 1.1 (*Guide*) and the APTA *Reimbursement Resource Book*.¹¹⁻¹² The course is team taught by five faculty members using lecture, seminar and laboratory experience.

Examples of Teaching Strategies Used in the Foundations Course

The course begins with a history of physical therapy. This not only provides students with a greater understanding of key developments in the profession, but more importantly, places the students' immediate experience in a longer contextual timeline.

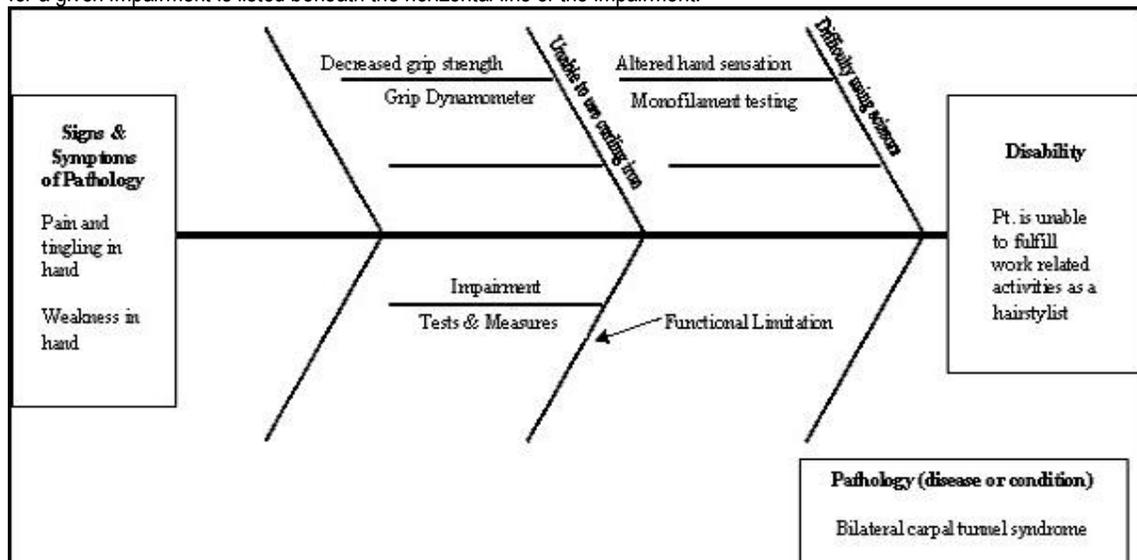
For the module on "Finding, Evaluating and Using Evidence" students read two research articles and compare the type, structure and purpose of the articles, in addition to examining issues pertaining to the reliability and validity of the tests used by the investigators. Students also engage in an instructor-guided computer laboratory experience in which they participate in searching a variety of research, health, commercial, and government internet websites. This activity involves not only learning the search process but also evaluating the quality and potential uses of the information available at the various sites.

The computer laboratory approach is also used in the module on the "Use of the *Guide* and Clinical Decision-Making." Students, with direction from an instructor, actively explore the *Guide* on CD-ROM. Students then independently complete three online, Blackboard®-based quizzes on the basic components of the *Guide*. Another activity in this module involved viewing and discussing a videotape of a second year physical therapy student and an expert physical therapist each conducting a physical examination on the same patient. This exercise introduces concepts associated with clinical decision

making; taking a history, determining appropriate tests and measures based on the history, and applying and interpreting the tests and measures. A fishbone assignment (see Figure 1) augments this section of the course and is used to elucidate concepts associated with the disablement model used in the *Guide*.¹¹⁻¹³ These concepts are applied in the module on the "American Healthcare System" when basic documentation skills are introduced. Students receive instruction on ICD-9CM codes, and the S.O.A.P. note format and write and code an initial examination note, including treatment goals at the level of functional limitations.¹⁴

During the module on "Theories of Health Behavior," students read a review article on the determinants of health behavior and examine the basic components of theories that purport to explain health behavior.¹⁵ Additionally, students identify behaviors that might explain the health choices of a given patient. Students also complete and discuss a number of self-assessments tools designed to assist them in understanding their own health behavior choices and biases.

Figure 1. Sample fishbone diagram connecting the various elements of the disablement scheme: A pathology, its accompanying signs and symptoms, and resultant disability are placed in the labeled boxes. Functional limitations are listed on the diagonal lines with the associated impairment(s) on the top of the connected horizontal lines. A measurement method for a given impairment is listed beneath the horizontal line of the impairment.



Students participate in three laboratory experiences associated with the module on "Observation and Movement Guidance Skills." These experiences are unique, in that they are *not* designed to promote the acquisition of specific manual or technical competencies as is generally the case with laboratory experiences. Rather, they provide the students with opportunities to 1) begin to develop an orderly and repeatable method of observing and describing movement, 2) enhance their comfort level with therapeutically entering another individual's personal space, 3) experiment with various types and purposes of manual touch (e.g., palpation, providing resistance, providing instruction for specific movements), and 4) begin to explore their ability to help others move based on their own anthropometric characteristics. One purpose of this module is to capitalize on the skills students possess and encourage them to begin to express their observations, even before they learn the more technical movement descriptors. To address this purpose, students view a videotape depicting the acquisition of movement in typically developing infants. With the assistance of the instructor, students discuss how movement skills progress by considering basic concepts such as alignment, symmetry, weight shift and force production.

Methods

To assess the extent to which the *Foundations* course met the outcomes desired by the faculty, qualitative assessments were conducted with three groups of students in the program during the 2003-04 academic year. The intent of these assessments was to determine if the students perceived the *Foundations* course as introducing them to a broader understanding of the practice of physical therapy that served to enhance both subsequent learning and professional socialization. A questionnaire was administered to 75 students; 37 who had completed all three years of the program and 38 who had completed the second year of the program. In addition, first year student essays summarizing the course and describing its influence on their perceptions of the field were also analyzed for content.

Results

Eighty-six percent of the graduates and 87% of the second year students strongly agreed or agreed that the course content

was consistent with their present understanding of the major themes of practice, and similarly, 86% of both graduates and second year students strongly agreed or agreed that the *Foundations* course was an effective means of providing a "bigger picture" understanding of the profession early in the curriculum. Both graduates (84%) and second year students (87%) strongly agreed or agreed that the content of the *Foundations* course had been re-visited in subsequent course work, and 81% of graduates and 84% of second year students either strongly agreed or agreed that the content of the course assisted them in comprehending and learning content delivered in subsequent courses.

The reflective essays written by the students who had just completed the course proved to be very revealing. The representative excerpts provided below appear to support many of the purposes proposed by the faculty for the implementation of the *Foundations* course. Many students commented in some fashion that the course expanded their understanding of their profession and that it affirmed their choice of career:

"There are many valuable things that I learned throughout this course, but most of them come down to the realization that physical therapy practice is so much more than just the process of identifying a problem and working toward fixing it...Therapy is multidimensional, involving such things as dealing with the complicated health care system, development of people skills, knowledge of different cultural expectations, and, of course, the ability to be comfortable in another person's personal space. Recognition of these things will help to shape the way I approach learning in each of my courses over the next couple of years, but I realize that learning about therapy does not really stop when I graduate. It will be a continual process throughout all of the years that I practice."

"So you want to be a physical therapist? Well here are some of the things that you never thought you would need to know to be one. This is what this class was for me. I knew that a physical therapist needed to know about the human body and how to manipulate it to enhance the body's response to healing, but most of the information covered this semester I had never thought about before."

Many also predicted the course would help them assimilate future knowledge and expressed appreciation for obtaining an overview of the profession at the program outset. The following student comment aptly expresses this view:

"I believe that this course has laid a groundwork that I will be able to come back to and expand upon in upcoming years. While we barely skimmed the surface in our discussions and lectures, I feel I gained a broad base of understanding for the field of physical therapy. I feel fortunate to have received this broad base of information early in my professional education."

As a final theme, students appeared to have appreciated the course because it provided an early personal connection to the profession, as the following excerpts suggest:

"Foundations of Physical Therapy Practice lays down the underlying principles of Physical Therapy as a profession. In doing so, students begin to see themselves as student physical therapists and are more likely to actively engage in issues related to the profession...."

"Finally, the most important thing that I have learned this past semester is that I am a novice physical therapist. By acknowledging this, I am already building and honing my skills as a physical therapist, even in my first semester of physical therapy school."

Discussion

Student feedback would suggest that the placement and format of the *Foundations* course in the DPT curriculum have been useful in providing a framework for knowledge acquisition and professional socialization. One important aspect of the *Foundations* course is that it provides students with a structured approach to thinking about the profession of physical therapy. The course contains not only specific content, but it also provides students with strategies for *how* to learn about physical therapy. The immediate outcome of the course is that students have a better understanding of the complexity of the profession. However, students are also instructed that the content of the course is explicitly intended to provide them with a framework for thinking about and organizing future learning. For example, students are exposed to the process of clinical decision making by learning about the *Guide's* Patient/Client Management Model. The intent of this instruction is not simply to learn the elements of the model, but to assist the students in placing subsequently taught information (e.g., tests and measures, interventions) in the context of the model, and to assist them in understanding how various curricular components will fit together in the context of physical therapy practice.

The fishbone diagram exercise is another example of the course providing students with a learning strategy; it is used to not only teach the disablement scheme, but to provide students with a conceptual map for understanding the relationships

between the various components of the scheme. This is intended to assist them in writing more effective patient-centered goals and in understanding which elements of disablement are being addressed with a given intervention.¹⁶

Finally, laboratory activities in the course are designed less to teach students specific skill competencies than to introduce strategies for dealing with personal space issues and for thinking about both observing and guiding movement. For example, students receive initial exposure to the concept of patient transfers. The variety of specific transfer techniques, as well as the assurance of psychomotor skill competency for performing transfers, is taught later in the curriculum. The exposure in the *Foundations* course is designed to make students consider the implications of being in the patient's personal space and to consider their comfort level with this in order to effectively conduct a transfer. Additionally, students discuss their various "sizes and shapes" in relation to the process of transfers and how their own anthropometric characteristics, as well as those of the patient, will interact to affect transfers. In examining and reflecting on their own physical characteristics students begin to develop personal methods of assessment that they can continue to use in assessing their motor skill development in future laboratory courses. Use of techniques such as these to help students understand *how* to learn, not just *what* to learn, has been demonstrated to be an important but often overlooked aspect of teaching and learning at multiple stages of development.¹⁷⁻¹⁹

Comments contained in the reflective essays of first year students who had just completed the *Foundations* course demonstrated that students valued the course and experienced little difficulty in understanding the content of the course, although most had little prior exposure to the specific areas of content. This may be the result of attempts on the part of the faculty to draw upon students' previous experiences to assist them in learning new material. For example, students complete the fishbone diagram using a patient (often the student) with whom they have familiarity. Likewise, students discuss the concepts of health, illness, and responses to illness embedded in the theories of health behavior by examining the health habits and beliefs of their families and the resultant biases inherent in these beliefs.

Teaching and testing strategies like those used in the *Foundations* course were found by Sellheim to be instrumental in creating a learning environment that promoted the use of a "deep" learning approach by physical therapy students.⁶ Such an approach is motivated by the student's interest in the subject matter and a desire to understand the material and identify its relevance. Students identified understanding relevance as the single most important factor in promoting learning. Sellheim suggests "faculty need to be more deliberate in linking what they are teaching to a clinical, professional practice, or other context to assist students in seeing the relevance of the material."⁶ The teaching strategies used in the *Foundations* course are intended to help students understand the relevance of the course material, but more broadly, the course itself is intended to assist students in understanding the relevance of the entire curriculum.

First year student reflections also suggest the *Foundations* course is useful in beginning the process of professional socialization. In two studies conducted fifteen years apart, researchers studying the professional socialization process of physical therapy students noted that students entering physical therapist education programs do indeed possess perceptions about the roles of the physical therapist.^{9,10}

In their 1987 study, Corb et al. recorded the extent to which students identified with various pre-defined roles of the physical therapist (i.e., staff therapist, department head, clinical researcher, clinical instructor, and professional organization member).¹⁰ They noted students' perceptions about the characteristics associated with these various roles were present at matriculation. In a more recent qualitative study of Swedish and English students entering undergraduate studies in physiotherapy education, Richardson et al. attempted to gain a more descriptive understanding of students' expectations about the professional role of the physical therapist at entry into their course of study.⁹ Student expectations about professional roles varied considerably, but generally involved four areas; 1) activities and behaviors associated with acting professionally, 2) instructing patients, 3) caring for patients and, 4) communicating with patients. The authors concluded that students possessed a significant awareness of their emerging roles as professionals and wished to acquire strategies to assist them in their transition to these roles. To this end, Richardson et al. proposed it was the primary responsibility of the educational program to shape the divergent views held by students when they enter a program into a perception that "is congruent with modern practice needs and which includes all the components of the desired professional role."⁹

The intent of the *Foundations* course is to initiate this process in an explicit and planned fashion. By specifying the key themes and values of the profession at the outset of the curriculum, student perceptions are molded and refined as they begin the transition to the role of a professional. It is relevant to note that on the first day of the *Foundations* course, the course coordinator expresses the view held by the faculty that the students are not simply students, but rather "novice therapists." In presenting this concept the course coordinator informs the students that commensurate with this view is the expectation that participants in the program will assume personal responsibility for their educational and professional performance, and begin to contribute to the profession from the outset of their professional education experience. This approach reinforces the expectations of students noted by Richardson et al., and comments of many of the first year students on the reflective essay appear to confirm the value of faculty explicitly promoting the role of novice therapist.⁹

Conclusion

Although the retrospective design of this study does not lend itself to providing strong evidence for the efficacy of the approach, quantitative and qualitative student feedback suggests the original objectives of the course were met and provides support for further prospective research. The approach presented here offers an alternative to traditional curricular designs that may assist health professions educators in modifying existing or developing new curricula, and suggests that students are capable of comprehending and benefiting from advanced knowledge introduced early in a curriculum.

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