

1-1-2007

## Determining the competitive nature of physical therapy education: A multi case study design

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DETERMINING THE COMPETITIVE NATURE OF PHYSICAL THERAPY  
EDUCATION: A MULTI CASE STUDY DESIGN

by

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Bachelor of Science  
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1990

Master of Science  
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A dissertation submitted in partial fulfillment  
of the requirements for the

**Doctor of Philosophy Degree in Higher Educational Leadership  
Department of Educational Leadership  
College of Education**

**Graduate College  
University of Nevada, Las Vegas  
August 2007**

UMI Number: 3281999

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**Dissertation Approval**  
The Graduate College  
University of Nevada, Las Vegas

May 31, 20 07

The Dissertation prepared by

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**Entitled**

Determining the Competitive Nature of Physical Therapy Education:

A Multi Case Study Design

is approved in partial fulfillment of the requirements for the degree of

Doctor of Philosophy in Educational Leadership

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## ABSTRACT

### **Determining the Competitive Nature of Physical Therapy Education: A Multi Case Study Design**

by

Peter Andrew Altenburger

Dr. Mimi Wolverton, Dissertation Committee Chair  
Professor of Higher Educational Leadership  
University of Nevada, Las Vegas

Higher education is becoming more competitive as for-profit and non-profit institutions continue to expand. Healthcare educational programs, such as physical therapy, find themselves competing for quality applicants. Understanding this competitive environment and how to thrive within is critical for program survival. The purpose of this study was to determine the competitive strategies being used by entry-level doctorate programs in physical therapy.

Eight physical therapy programs, ranked in the top 15% of schools, were purposively selected for the study. Four of the programs were private institutions represented by the University of Southern California (USC), University of Miami, Northwestern University, and Creighton University. The four public campuses include Northern Arizona University (NAU), University of Iowa, University of Nebraska, Omaha (UNMC), and University of Illinois-Chicago (UIC).

A qualitative, multi case design was used to evaluate the variances in competitive strategy. Programs were assessed through documented materials

faculty interviews, and site assessments. Data from all three sources were triangulated revealing twelve consistent categories. A cross comparison of programs was performed assessing presence of competitive strategies.

Competitive advantage can be gained through cost leadership, differentiation, and/or focus. The four public institutions (average cost of \$29,500) demonstrate a significant cost leadership advantage when compared to the private institutions (\$81,250). Campus and program orientation revealed significant program differentiation relative to Carnegie Classification, supportive programs, and institutional environment. Specifically, significant differentiation was noted for five research extensive institutions. In addition, the presence of a PhD program and a medical campus location were also distinguishing features. USC and Iowa exhibited all three differentiation elements. All eight programs exhibited some level of focus. Miami revealed a cost leadership focus. Each of the four public programs demonstrated significant differentiated focus through program delivery while the four private schools had a strong curricular design and recruitment focus.

Although there is some overlap, institutional type fosters differences in competitive strategy. Public institutions have a significant cost leadership position that when combined with perceived value can result in a strong competitive position. These four public programs create value by taking advantage of their educational environment and providing exceptional educational delivery. In contrast, the four private programs must combat the impact of cost by creating a differentiated educational environment. The four programs in this study have

combined multiple elements, such as curricular design, medical environment and research to create a perceived value that exceeds normal student expectation.

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## ACKNOWLEDGEMENTS

Dr. Mimi Wolverton for her guidance, wisdom, and incredible patience. I am in her debt for all of the knowledge and expertise she has provided me.

My Committee: Dr. Bob Ackerman, Dr. Gerald Kops, and Dr. Wes McWhorter, thank you for all of the in class expertise and out of class real world influences. I am extremely appreciative of your devotion to higher education.

To my children: Kate, Jack, and Sam, thank you for never letting me forget who I am and what is truly important in life.

To my wife, Beth, thank you for all of your tremendous love and support. I could not have accomplished this goal without you. I love you.

## CHAPTER 1

### INTRODUCTION

In the United States, a successful business is often based on the value of the product produced. The exceptional performance of Intel's computer chips has made their product an industry leader and valued by many current and future consumers. Similarly, the trust in generic drugs has allowed pharmacy chains like Walgreens to offer alternative choices to consumers creating value through cost. The ability of these companies to establish consumer-valued products has allowed their businesses to effectively compete within their respective industries.

Other organizations outside of big business also attempt to achieve success through value-based competition. As Newman and Couturier suggest, "higher education in the United States has always viewed itself as competitive," however, current trends suggest an escalating competitive environment (2001). New forces, such as the emergence of more than 650 for-profit institutions and virtual universities, provide greater opportunity and increased consumer choice. As a result, colleges and universities need to establish competitive strategies that enable them to triumph over their rivals (2001).

Although Newman and Couturier focused their discussion at the institutional level, competitive forces can also be seen across universities at the college or department level. MBA programs, for example, contend with each other for

students, resources, and faculty (Wolverton & Penley, 2004). As a consequence, each individual program must develop a strategy that enables it to compete within its academic environment. An examination of physical therapy graduate education suggests that similar competitive forces are also at work.

In 1993, Creighton University developed the first entry-level doctorate degree in physical therapy (DPT). At the time, no other school offered this type of degree program for physical therapy. Idealistically, the faculty at Creighton along with other physical therapists and the American Physical Therapy Association (APTA) believed that the development of the DPT brought greater autonomy for physical therapists and represented the true depth and breadth of physical therapy education. Practically, the implementation of this unique DPT degree created a highly valuable educational experience and a distinct competitive advantage for Creighton.

Competitive advantage is achieved by an organization, such as Creighton, when it establishes greater value through cost control or unique benefit (Porter, 1985). The DPT degree was unique, which gave this program and all those that soon followed a superior student recruitment advantage over programs that offered only master's degrees. Obtaining such an advantage generates individual program success; it also actively shapes how the future environment will change. The APTA's House of Delegates, the association's governing body, endorsed the following statement in June of 2000:

“Physical Therapy, by 2020, will be provided by physical therapists who are doctors of physical therapy and who may be board-certified specialists. Consumers will have direct access to physical therapists in all environments for patient/client management, prevention, and wellness



services. Physical therapists will be practitioners of choice in clients' health networks and will hold all privileges of autonomous practice (*APTA Vision Statement for Physical Therapy 2020, 2000*)."

This statement indicates the desire of the association to move all physical therapy education to the entry-level doctoral degree further supporting Creighton's educational philosophy. The APTA's alignment with the DPT establishes legitimacy to the degree and further elevates the competitive advantage for those programs offering it. As a consequence, by 2005 more than half of the existing physical therapy programs had converted to the DPT with data suggesting the trend will continue.

Ideally, program conversion should be based strictly upon an educational belief that the DPT is the right degree choice; however, several recent surveys indicate that competition is the main reason for many of the current program changes (Domholdt, Stewart, Barr, & Melzer, 2002). Thus, the DPT degree has had a competitive impact on recruitment, which has resulted in a need for other institutional programs to consider altering their degree structure (Domholdt et al., 2002).

The uniqueness of the DPT degree also helped to eliminate cost restraints. If the buyer considers the product to be valuable with no equal alternative, then cost increases are nullified (Porter, 1985). Programs that established the DPT early on could offer the degree at any price since students had no competitive alternatives. A majority of the original DPT conversions were private institutions (CAPTE, 2003). Recent analysis, however, reveals a more dominant adaptation occurring within public institutions.

All indications suggest that the degree differentiation advantage, held primarily by private universities since the late 1990s, will be significantly reduced by 2007-2008. Since no additional degree differentiation is possible, physical therapy educational programs will need to assess and emphasize alternative characteristics in order to create a competitive advantage.

MBA programs use ranking systems highly correlated to starting salaries, program variability that offers specialty education, and relationships within communities that offer unique educational experiences to differentiate themselves from other programs (Wolverton & Penley, 2004). In comparison, physical therapy programs have a limited ranking system that is not correlated with starting salaries; accreditation standards restrict substantial variability among programs; and student clinical internships tend to be structured similarly across most programs. Therefore, the question becomes, how will physical therapy education programs create and sustain a competitive advantage once a majority of them have transitioned to the DPT degree?

#### Purpose

The purpose of this study was to examine the competitive strategies being used by entry-level doctorate programs in physical therapy. An analysis of multiple, highly ranked DPT programs provided an in depth understanding of how each of these programs has established a competitive advantage. In addition, further study of these institutional programs focused on their strategies for sustaining an advantage into the future.

## Framework

Porter has described competitive strategy as a fundamental component of success for any business (Porter, 1985). Each organization develops strategies for success around three basic types of competition: cost reduction, differentiation, and focus (Porter, 1985). Cost reduction attempts to increase consumer purchase by providing equal quality at a lower price (Porter, 1985). For example, in the air transportation market, Southwest Airlines offers fares at lower costs than most other airlines (Hallowell, 1996). However, cost reduction is only successful if the consumer believes the value of the product is equal to its competitor or is "good enough" to satisfy his/her needs (Porter, 1985).

Freedom from cost restraints can be established through differentiation, in which an entity attempts to provide a unique product or service that is currently not being offered within an industry (Porter, 1985). Since the product cannot be obtained from any other company, the organization is able to set the market value (Porter, 1985). The creation of the Internet led to a need for the development of companies that could provide access for the general population. As a consequence, companies such as America Online (AOL) were among the first to provide these services. Their early entrance into this business field afforded them the opportunity to establish their own market and offer services at their own price.

Organizations can also attempt to identify subsets or niches within a larger field. With competitive focus, a firm attempts to create an advantage within a smaller segment of an industry controlled by larger companies (Porter, 1985;

Richardson, 2002b). The ability to create a focus is dependent upon larger companies providing a lack of depth within a given area (Porter, 1985). Within the food industry, Starbucks was able to establish focused differentiation through the development and marketing of gourmet coffee. In this underserved area that lacked consumer confidence, Starbucks was able to corner the market. This same market, now full of competitors, still provides Starbucks with above average performance due to its reputation and focused success.

The application of one or more of these principles can effectively alter the competitive balance among for-profit businesses. However, establishing an advantage is only half the battle, sustaining it requires ongoing analysis of the competitive environment.

Several different authors have developed concepts that identify ways to maintain an organization's competitive position. Kaye and Dyson (1999) refer to internal focus as a form of analysis that, repeated over time, keeps a company in tune with its mission and goals. As a consequence, sustaining success is partially dependent upon a detailed analysis of the firm's strengths and weaknesses.

In addition to an internal focus, sustaining long-term success requires the production of an external focus. This strategy involves evaluating rivals within the market place and discerning the company's position relative to change (Panayides, 2003). Researchers have described this as "competitor orientation" and believe it to be pivotal to lasting success (Panayides, 2003; Trout & Ries,

1985). Combining competitive strategy with internal and external focus creates a conceptual framework for ongoing organizational success.

A prime example of this framework at work within physical therapy education has been degree transition. Physical therapy educational programs throughout their history have attempted to gain and sustain competitive advantage through degree elevation. However, the entry-level degree ceiling has been reached with the granting of a DPT degree. Therefore, it is imperative that programs begin to search for alternative methods for establishing and sustaining success.

### Research Questions

The primary focus of the investigation can be summarized in three general questions. First, this study attempted to explain how entry-level doctorate programs in physical therapy (DPT) gain a competitive advantage over rival DPT programs. Several associated propositions were made prior to the start of the study to help guide data collection and analysis. Yin suggests that proposition statements enable the researcher to focus on relevant materials to better answer research questions (2003). Proposition one suggested that all eight physical therapy programs, since they are successful, would demonstrate considerable development in at least one area of competitive strategy. Proposition two stated that successful programs would not be based solely on cost leadership. Finally, a third proposition implied that the highest ranked programs would be those who were able to use a combination of strategies.

The second question dealt with understanding the competitive environment when comparing programs housed within public institutions to those that reside in private universities. Theoretically, variations in competitive strategy should emerge when evaluating programs across institutional type. For instance, institutions more than likely focus on differentiation while public schools seek to take advantage of cost benefits.

The final question dealt with the accelerated rate of program conversion to the DPT; specifically, can older programs with established DPT curriculums expect to sustain their advantage over time? Expectations were that older programs would demonstrate a more structured approach to program evaluation and strategic planning enabling them to be better prepared for future change.

## Methods

Multiple types of research strategies can be used to answer these questions, however, this particular study requires an interpretation of current, uncontrolled events taking place across multiple physical therapy educational programs. Thus, these research questions are best answered through an in-depth analysis of the current status of this social phenomenon using a case study approach (Merriam, 2001; Yin, 2003).

Yin defines case study strategy as “an attempt to understand current phenomenon within a real-life context.” Unlike experimental research that removes the variable from its environment, the case study design looks to answer questions through careful analysis of the event within its context. Graham

Allison, in *Essence of Decision*, illustrates how understanding the contextual framework provides invaluable information about a particular phenomenon (Allison & Zelikow, 1999). His case study on the Cuban Missile Crisis analyzes the different decisions made in reference to the changing circumstances that affected United States and Soviet interactions.

The current evolving state of physical therapy DPT education suggests that extreme variability exists among competing institutions. Therefore, a single case design, while informative about one institution, would not provide a sufficient analysis of the variability across multiple programs. Instead, a multiple case study design was used to capture replicating and/or contrasting competitive strategy data found among selected physical therapy higher education programs.

Program selection was based on several key characteristics. First, since the study focused on the development of competitive advantage over and above degree variations, each program had admitted at least one class of entry-level doctorate students. Second, this study involved an assessment of four public and four private institutions. Third, individual program selection was also based on the length of time an institution had been offering an entry-level doctorate. Therefore, each institutional type (public, private) had four programs that had been in existence for at least four years and four programs that had been operating for less than four years.

Approximately eighty programs meet the above criteria requiring further delineation to narrow the selection process. A purposive sample was selected from the top fifteen percent of US News and World Report's Physical Therapy

Program Rankings. Selection of potential sites within this grouping was based primarily on accessibility. Only one program, the University of Pittsburgh, refused to be in the study.

### Definition of Terms

**Physical Therapy:** it is a healthcare profession designed to help individuals prevent or recover from mobility problems. Therapists work in many different settings and with all age groups (Association, 2007a).

**Entry-level Doctorate in Physical Therapy (DPT):** it is a clinical degree awarded to students who are preparing to enter the healthcare field to practice physical therapy. The term entry-level has been attached to the degree to communicate to students that a master's degree is not required before entry into the program (Association, 2007b).

**Competitive Strategy:** the search for a favorable competitive position in an industry. It aims to establish a profitable and sustainable position (Porter, 1985).

**Competitive Advantage:** the value a firm is able to create for its consumers that exceeds the firm's cost of creating it (Porter, 1985).

**Cost Leadership:** a firm attempts to be the low-cost producer within the industry. The firm has a broad scope and serves many industries (Porter, 1985).

**Differentiation:** a firm seeks to be unique within an industry. The firm selects one or more attributes that buyers believe to be valuable and seeks to meet their needs exclusively (Porter, 1985).



Focus: Success is based upon a narrow competitive scope. The firm selects a segment of the industry and tailors its strategy to serve that niche. The firm can provide both a cost focus or differentiated focus (Porter, 1985).

Design: How a firm or program is organized. Design includes the overall purpose and how the company plans to achieve its goals (Porter, 1985).

Delivery: How a firm or program will implement its design. This includes production and facilities (Porter, 1985).

Marketing: How a firm or program will advertise to consumers. Strategies used to attractive prospective buyers (Porter, 1985).

#### Limitations

Although multiple case study design provides for comparison across several different institutional programs, it is beyond the scope to this study to sample all DPT programs. This design provides insight into what different programs are doing to create a competitive advantage but the small number of subjects limits the overall generalizability of the findings.

Programs selected for inclusion in the study were based on US News and World Report's Ranking of physical therapy programs in 2004. Unfortunately, there is no other alternative ranking system to use as a comparison. Only having one ranking system creates some potential for bias and may have eliminated some competitive programs not measured accurately within the ranking system. In addition, since the most current ranking is already several years old, there is a

potential for the top fifteen percent to be different if it were measured more recently.

Finally, this study focuses on understanding the principle of competitive advantage from an institutional perspective rather than a student's perspective. It is reasonable to assume that pertinent information could be obtained from the consumer aspect. Although intriguing, the student's beliefs about competitive advantage are different from those of the program faculty and beyond the scope of this study. A comparison of institutional and student perspectives however, would be an excellent follow up study.

### Significance

First, the findings indicate the presence of a competitive environment within physical therapy higher education. Second, this study revealed how programs are able to create a competitive advantage. Third, it demonstrated the ability to apply a business model to physical therapy educational programs. Finally, understanding the implications of different strategies can help to improve program success.

### Conclusion

The implementation of the doctorate in physical therapy created a differentiation within the physical therapy educational field. Recent events indicate that this degree gap between programs is about to be eliminated. How different programs have prepared for this change and their ideas on how to

achieve a competitive advantage within a less differentiated educational environment are important issues for program survival.

## CHAPTER 2

### LITERATURE REVIEW

The goal of this investigation is to examine the types of competitive strategies used by successful physical therapy programs offering an entry-level doctorate degree in physical therapy (DPT). The business literature contains a variety of discussions on competitive strategy and implications for competitive success. In contrast very little literature exists regarding competitive strategies and their application to higher education. Therefore, this chapter begins with an explanation of these principles using examples from the business literature. Next, an exploration of the application of these principles within higher educational is presented. This is followed by a more specific analysis of competitive strategies within the physical therapy literature. Finally, this chapter concludes with a discussion about the current unanswered questions concerning the application of competitive strategy within physical therapy education.

#### Competitive Strategy

Porter has described competitive strategy as a fundamental component of success for any business (Porter, 1985). His book, *Competitive Advantage, Creating and Sustaining Superior Performance*, illustrates how companies develop strategies for success around three basic types of competition: cost

reduction, differentiation, and focus (Porter, 1985). Cost reduction strategies attempt to provide a product at a reduced cost when compared to its competitors' offerings (Porter, 1985). Pharmaceuticals that offer generic products attempt to increase sales by providing low cost medication when compared to brand name merchandise. However, above average sales are only secured if the consumer believes the quality of the low priced product is the same as the brand name (Porter, 1985).

Freedom from cost restraints can be established through differentiation, in which an entity attempts to provide a unique product or service that is currently not being offered within an industry (Porter, 1985). Since the product cannot be obtained from any other company, the organization is able to establish any price (Porter, 1985). American Hospital Supply competes within the medical supplies industry providing various products to hospitals. They are able to differentiate their services through the implementation of information technology by installing online access terminals for product orders within hospitals creating a fast and easy way for staff to order the necessary supplies (Rackoff, Wiseman, & Walter, 1985). Over time, competitors have entered the market but as Porter suggests, differentiation also creates customer loyalty, which enables a company to sustain success over a long period of time (Porter, 1985). Differentiation can occur within existing markets as well; Partners Healthcare Systems experienced success by implementing an integrated cardiac delivery system within several Massachusetts hospitals (Greenspan, Krentz, & O'Neill, 2003). Adjusting their

service delivery model of healthcare resulted in effective treatment of cardiac patients and sustainable success for the company (Greenspan et al., 2003).

Organizations can also attempt to identify subsets or niches within a larger field. With competitive focus, a firm attempts to meet the needs of a smaller segment of an industry controlled by larger companies (Porter, 1985; Richardson, 2002a). The ability to create a focus is dependent upon larger companies providing a lack of depth within a given area (Porter, 1985). Competitive focus can be subdivided into cost and differentiation advantages depending upon the strategic plan of the organization (Porter, 1985).

Johnson and Johnson, one of the many providers of shampoo and hair care products, was able to establish focused differentiation through the development and marketing of baby shampoo. In this underserved area that lacked consumer confidence, Johnson and Johnson was able to capture above average market performance. South (1999) suggests that the future survival of clinical laboratory sciences is dependent upon focused differentiation. Indeed, twenty-first century survival no longer will depend upon cost control, instead she believes companies will have to “get different” in order to obtain a competitive advantage.

In contrast, La Quinta hotels are an example of competitive focus through cost control. By eliminating restaurant services and other amenities, La Quinta is able to provide low cost rooms at a large number of sites across the United States (US). Within the larger industry of hotel accommodations, La Quinta’s cost focus with limited amenities provides a service to price conscious consumers who simply need a place to sleep for the night.

Multiple research studies within business management have evaluated the implementation of these strategies across different competitive fields. Miller and Friesen (1986) assessed several different clusters of businesses in an attempt to determine successful performance. Their results indicated that the most profitable businesses within each cluster were the ones able to effectively implement differentiation, cost leadership, or focus strategies.

Findings by Panayides (2003) within the shipping industry suggested that low cost advantages while effective for some companies did not always result in competitiveness. Instead, maintaining efficiency in production with differentiation lead to greater performance. Several studies agreed that if price reductions result in poor quality then superior performance will often be sacrificed over the long term (Miller & Friesen, 1986; Panayides, 2003). These findings suggest that cost leadership can be effective at creating competitive advantage; however, it may not be as strong as differentiation.

Further research has looked at the effectiveness of one strategy versus another. Walker and Ruekert (1987) argued that across many fields differentiation has a stronger influence on performance than cost leadership because smaller companies are more effective at applying differentiation. Yamin, Gunasekaran, and Mavondo (1999) found that a combination of both differentiation and cost leadership is superior to either one independently. Murray (1988) and Panayides (2003) also concluded that implementing more than one strategy enables businesses to outperform their rivals. In the end, all agreed that companies pursuing some form of strategy out performed all others that were not

effectively using a competitive strategy; but in most cases differentiation was superior to cost leadership.

Fewer studies have been done on the effectiveness of focus. Woo and Cooper (1982) demonstrated that ineffective business performance can often be attributed to an “absence of clear focus.” Their study revealed that low market performance was strongly correlated to an inability to define company direction. Panayidas’s study on the shipping industry revealed no statistical difference between focus strategy and competitive performance. He suggests that focus strategy may be more effective for smaller companies and small markets (Panayides, 2003). Zahra and Covin (1994) found a technological focused strategy within the electronics industry resulted in positive firm performance.

An assessment of the literature concerning competitive strategy reveals a consensus belief that organizational success requires implementation of cost leadership, differentiation, or focus. Several of the articles also suggest that more than one strategy creates superior competitive advantage. Achieving an advantage, however, does not mean that it will be maintained for ever. To obtain long-term success, companies need to understand their rivals and plan for the future.

### Sustaining Market Leadership

Once a company achieves success, the emphasis switches toward maintaining long-term performance. Employing any one of the three competitive strategies formulated by Porter (1985), can lead to sustained success, but the



firm must create barriers to imitation. Persistent performance using cost leadership requires a unique advantage, such as new technology, or multiple relationships that prevent other companies from duplicating the product at the same cost. Porter (1985) illustrates how Gallo wines has used specific technologies and economic price advantages to create sustainable performance through cost leadership in the wine industry.

Companies that choose to differentiate must create a product that will sustain its perceived value (Porter, 1985). In addition, differentiation is susceptible to failure if duplication occurs. Reuter's News agency developed a business founded on spreading unbiased information throughout Europe. Their ability to set up a cartel in 1870 enabled them to protect their business from duplication, fostering sustained economic success (Bartram, 2003).

Focused strategy requires that a company provide a product that is not easily imitated in price or quality. The local baker must be able to create cakes and cookies that are higher in quality in order to compete with the large grocery chains. In turn, the larger grocery chains must focus on high quality produce and competitive pricing to compete with Walmart. If these variances are achieved, then focused competitive strategy can be sustained.

The ability to achieve sustained competitive strategy requires strategic planning through focused analysis. Porter (1985) discusses the need for all firms to perform a systematic analysis of their activities. Kaye and Dyason (1999) suggest that maximizing performance requires an internal self-assessment that enables an organization to provide a focused quality effort. In addition, multiple

authors have discussed the need to attend to the competitive environment within which an organization resides (Kaye & Dyason, 1999; Panayides, 2003; Porter, 1985). External focus allows companies to be oriented toward their competition and prepared to use the correct strategy to compete within their given markets.

### Internal Focus

Each organization can be broken down into a series of functions that include general operations, distributions, marketing, and service. Understanding the value of the different activities within a given business provides the company with the capability of creating a sustained competitive advantage. For example, Southwest and Delta Airlines have different advertising approaches, use different boarding procedures, and provide different onboard services. Each of these activities employed by each airline represents the building blocks of their individual competitive strategy. Therefore, developing a competitive advantage requires the creation of value through detailed functional analysis.

More importantly, maintaining an ongoing internal assessment allows a company to determine operational strengths and weaknesses. This process of quality assurance is based on the principles of internal focus and should be a foundation for strategic planning and future growth. Difficulties with change arise when alterations occur without internal inspection often leading to mismatches between production ideas and operational talent. Consequently, sustained leadership requires ongoing improvement structured from an internal focus of a company's strengths and weaknesses.

## External Focus

Understanding the competition is also critical factor in organizational success and sustained leadership. Competitor orientation, described by Panayides (2003), involves understanding your competitors' capabilities and how they compare to your own and the changing market. His research demonstrated that shipping companies that were aware of their competitors practices and adjusted accordingly, had greater overall productivity than those companies less were less aware. Trut and Ries (1985) suggest that competitor orientation is more important than self-assessment when it comes to business success. For example, Bloomberg news agency entered the market with innovative ideas and new approaches to business news reporting. Rueter's, who had been in the same business for a long time, ignored their new competition. Their lack of external focus resulted in poor competitor orientation, ending their ability to maintain a competitive advantage over Bloomberg (Bartram, 2003).

Maintaining an appreciation for a competitor's activities allows a company to maximize their opportunity to find deficits within the market place. This process forms a powerful construct for future growth and development creating sustained value. In addition to competitor focus, market changes influenced by external factors must also be taken into consideration. In education, for example, factors such as funding deficits and accreditation restrictions might have a greater impact than competitor activity. Consequently, sustained market leadership requires focused planning through external and internal monitoring (Kaye & Dyason, 1999).

## Non-profit Competitive Strategy

The question arises: are these theories of market success only applicable to for-profit businesses? The bulk of the research involving obtaining and sustaining competitive strategy deals with private businesses and firms dependent upon a distinct advantage for financial security. However, Richardson (2002b) suggests that public entities need to understand the importance and effective implementation of these same strategies. A lack of competitive strategy prevents public institutions from dealing with environmental changes, capitalizing on new resources, and limiting the ability to operate efficiently (Richardson, 2002b). Worrell (1998) suggests that limited resources and political influences make competitive strategies indispensable. Further analysis of the literature reveals that competition and the need to maintain an advantage over rivals has, indeed, infiltrated higher education.

## Higher Education & Competitive Advantage

Newman and Couturier, in 2001, suggested that current trends in higher education represent an intensified competitive battle among institutions across the United States. Indeed, universities are in competition for the best students who will elevate the prestige, increase the rankings, and improve the legacy of that institution (Winston & Zimmerman, 2000). Lynch and Baines's (2004) study on competitive advantages within United Kingdom (UK) higher education suggest a similar competitive environment exists within these non-profit entities as well.

Although a company's goal may not be above average profits, covering costs and increasing resources secures a nonprofit company's future.

Furthermore, Meyer (2004) suggests not only is competition among nonprofit higher education provider's present but that the competitive forces at work will have an impact on the quality of the product provided. The newly advancing competitive environment will require programs to assess the quality of their product and answer questions from consumers (Meyer, 2004). With greater options and different resources, buyers will have a greater appreciation for the educational product they desire.

As a consequence, each institution will need a competitive strategy in order to effectively rival other schools. Newman and Courtrier (2001) suggest that these strategies must be dynamic and focused considering the changes currently taking place. In the past, institutions of higher education have often attempted to be many things to many people; however, the business literature suggests that this strategy is often unsuccessful. Therefore, each institution will need to focus on defining activities that will enable it to become unique (Newman & Couturier, 2001).

Lynch and Baines (2004) looked at a resource-based view (RBV) of establishing competitive advantage for a particular institution. Companies using such a strategy focus on identifying different unique resources that allow it to outperform other organizations. In this case, Lynch and Barnes attempted to identify particular RBVs that were most effective for UK higher education institutions. They suggested that long-term competitive advantages were

obtained through perceived reputation, innovation, and knowledge-based resources, such as faculty. Although these scholars have studied the theory of competitive strategy at the institutional level, individual departments often control student recruitment to a university, particularly at the graduate level.

In a multiple case study review of elite public MBA programs, Wolverton and Penley (2004) provided detailed examples of all three competitive strategies at work. Across many states, public MBA programs compete with private universities for applicants. Public universities often use cost variability to provide tuition rates at lower prices enabling them to maintain a cost advantage. In addition, many schools have attempted to differentiate themselves through the establishment of unique programs like international, agricultural, and entrepreneurial business programs. Wolverton and Penley (2004) also discovered focused themes within many schools that enable them to create an independent image. Their results indicate that competitive strategy is an important aspect within MBA programs. The question becomes: do much younger educational programs, such as physical therapy, use comparable approaches?

#### Competitive Strategy within Physical Therapy

An analysis of physical therapy higher education in the US does reveal traditional cost variability among public and private institutions. In addition, an evaluation of the literature demonstrates an historical trend of degree differentiation throughout physical therapy education. Over the past one hundred

years, this profession has evolved from therapists who possessed limited treatment knowledge, focusing primarily on the restorative care of polio patients, to highly trained specialists who treat a wide variety of orthopedic and neurological problems (Moffat, 2003). With this evolution in scope of practice came a dramatic shift in the educational process for physical therapists, which began as physician-supervised apprenticeships and evolved into postgraduate level education (Echternach, 2003). Along the way, many changes were made to curriculum requirements, faculty qualifications, and research expectations (Beard, 1961; Echternach, 2003).

In addition, significant changes have also occurred in the degree structures awarded to graduates of physical therapy educational programs. In particular, the degree structure modifications occurring over the past 20 to 30 years created a great deal of variability in the credentials held by practicing therapists (Echternach, 2003). For example, a patient seen in a physical therapy clinic today could be treated by a therapist with a bachelor's, master's, or entry-level doctorate degree.

Historically, changing the degree structure has also brought about significant differences among institutions offering physical therapy education. These variations within a relatively short period have created confusion among students, faculty, healthcare professionals, and the public. Over the years, several different reasons for changing the level of degree awarded graduates have been provided including, representation of the appropriate level of

education, fostering professionalism, and providing for autonomy of practice (Domholdt E, 2002; Domholdt et al., 2002; Worthingham, 1960).

One such factor is the recruitment advantage a program receives by transitioning to a higher degree granting status. For instance, there are two hundred and nine physical therapy programs across the US (CAPTE, 2007). Sixty-one of these programs offer an entry-level doctorate degree in physical therapy (DPT) while the other 139 programs award graduates with a master's degree in physical therapy (CAPTE, 2007). In many cases, students seem to prefer the higher degree award due to the potential monetary gains and increased autonomy. Thus, a university program that develops an advanced degree award first gains a significant competitive advantage for student recruitment over its rivals.

Rivals can be multifaceted, changing over time as programs evolve and mature. Within the last century, physical therapy programs began with external rivals from nursing and physical education and now have evolved to a primarily internal conflict between rival programs. Physical therapy education was founded at the turn of the century by physicians or the military to treat polio patients and war veterans. These reconstruction aides and physical therapy technicians (early titles for physical therapists) were predominately women who were physical education majors or nursing candidates from normal schools (Beard, 1961).

Leaders in the field began to envision a future where they would be recognized as healthcare professionals. Development and growth of such a



profession required an association of individuals with common goals that fostered such an ideal (Begun & Lippincott, 1993). As a consequence, The American Women's Physiotherapy Association (AWPA) was formed in 1921, later changing its name to the American Physiotherapy Association (APA) (Echternach, 2003). Among the concerns of these early leaders was the desire to establish and maintain appropriate professional and scientific standards (Beard, 1961). One noticeable variance was the level of educational preparation found among the working therapists. In an attempt to begin establishing some common educational standards, the initial members of the APA enacted guidelines that only allowed graduates of recognized schools of physiotherapy to participate in the organization (Beard, 1961).

The original members of the APA understood that a healthcare profession must be rooted in a strong educational foundation. In fact, it has been well documented that one key distinction that separates a profession from an occupation is the educational level of its members (Begun & Lippincott, 1993). More specifically, a professional education is rooted in a foundation of scientific knowledge coupled with the development of critical thinking skills delivered at the higher education level (Begun & Lippincott, 1993). Enacting standards and creating guidelines helped begin a transition of physical therapy technicians to a more legitimate professional standing within the healthcare arena.

Also included in early discussions on standards within the association were concerns about an equal level of education provided by all credentialing programs. This led the APA, with the assistance of the American Medical

Association (AMA), to construct a standardized level of education for physical therapy technicians in 1928 (Beard, 1961). The “Minimum Standards for Schools of Physical Therapy” included a set number of hours required for all graduates, as well as a list of expected courses (Nieland, 2003). Based on these guidelines, a committee was formed to assess how well each program met the published guidelines (Beard, 1961). In the end, there were 11 programs out of a possible 43 approved by the committee (Beard, 1961; Echternach, 2003; Worthingham, 1960).

### Competitive Analysis

Historically, the development of educational standards and program comparisons demonstrates an attempt by physical therapy technicians to solidify a focused niche within the healthcare field. The necessity for therapy was born out of disease processes and acts of war but its ability to survive within the healthcare professions required strategic planning. Competitively, the profession had gained some health provider recognition, but very little societal recognition, which created a significant disadvantage within the hierarchical structure of healthcare educational programs. The creation of the APA and minimum standards for education initiated an important strategic process for gaining legitimacy for physical therapy, helping to elevate the ability of educational programs to compete with other professions for qualified students.

Additionally, program approvals published by the APA created differentiation among the early physical therapy education programs. The approval process

recognized that some programs provided a higher-level of education. This differentiation established a clear competitive advantage for those eleven APA approved programs when compared to the other colleges offering certificates in physical therapy.

#### The Bachelor's Degree: Raising the Level of External Differentiation

The APA's size, resources, and experience made it difficult for them to maintain effective control over educational policies and accreditation standards (Echternach, 2003). Therefore, in 1936 the American Physiotherapy Association asked the AMA to take over control of educational policy and accreditation for physical therapy practice (Echternach, 2003; Scully & Barnes, 1989). Thus, for the next twenty-five years, the AMA had a significant influence over proposed modifications to the educational guidelines (Echternach, 2003). During this period, few changes were made to the academic standards and subsequently, there was very little external pressure applied to higher education programs (Scully & Barnes, 1989). This relationship has been suggested as one reason for the stagnated growth of the profession (Echternach, 2003). Even so, members were able to officially adopt the title of "physical therapist" leading to the association's name change to the American Physical Therapy Association (APTA) in 1947 (Scully & Barnes, 1989).

By the mid 1950s, many physical therapists involved within the APTA leadership believed that the scope and depth of healthcare treatment for most therapists had changed substantially (Echternach, 2003). The educational

guidelines established in the late 1930s were not a true representation of the needs for appropriate education. Thus, the AMA with the help of the APTA, established new guidelines for physical therapy education. Among the changes was a statement that suggested the appropriate culmination of study was the awarding of a bachelor's degree. The APTA's legislative body, the House of Delegates, adopted a resolution in 1960 that stated the minimal educational requirement for a physical therapist would be a bachelor's degree (Association, 1960).

Regardless of the lack of influence from external sources like the APA and AMA prior to 1960, higher education programs sought advancement and differentiation. The 1940s saw the involvement of the US in WWII, which required additional therapists to heal the injured and restore the function of many war veterans. The army reinstated their therapy-training program with an entrance requirement of a bachelor's degree for all women who were interested in obtaining a certificate in physical therapy (Vogel, 1967). The elevated educational requirements allowed the military to commission women physical therapists (Vogel, 1967). This new requirement may have limited the potential number of applicants but at the same time the end product must have been appealing for many women.

During this same period, public and private institutions still offered certificate programs in physical therapy. The number of APTA approved programs had increased from eleven in 1930 to sixteen in 1940. In addition, one program began offering a bachelor's of science degree for its graduates. The change from

certificate to degree program was a significant step that was met by seventeen of the twenty-five approved programs by 1948 (Beard, 1961). In addition, programs recognized the need to update practicing therapists with the latest advancements in science and treatment techniques. Therefore, many programs began to offer advanced educational programs at the master's and doctorate levels (Beard, 1961).

Expansion continued throughout the fifties with an increasing number of approved programs as well as those transitioning to degree programs. Beard notes that this time period was also marked by a substantial effort to increase enrollment (Beard, 1961). Chapters of the Association were asked to help increase awareness of the profession by attracting students to educational programs (Beard, 1961). Their efforts were rewarded by a substantial increase in student enrollment by the mid 1950s (Beard, 1961). In addition, statistical data on enrollment during this time reveals that eighty-one percent of the students were in degree programs (Beard, 1961).

### Competitive Analysis

The mid 1930s through 1960s marks a period where there was very little association influence on higher education yet significant changes occurred. For instance, the military programs, needing a substantial number of women to enroll to support the war recovery efforts, began offering commissions. This focused differentiation provided these programs with alternative rewards not available to higher education institutions. Similarly, colleges and universities began to

recognize that the level of education being provided to most physical therapy students often equated to a bachelor's degree (Echternach, 2003). Thus, transitioning to a degree award from a certificate program provided differentiation among contending physical therapy schools but more importantly, it established greater external competitive balance. As noted by the APTA student requirement efforts, physical therapy programs were also in competition with other healthcare professions and it was critical for students to consider it a legitimate livelihood (Decker, 1974).

#### The Post-Baccalaureate Degree: Moving Toward Internal Differentiation

Starting in 1955, the APTA attempted to convince the AMA to make substantial changes to the basic standards of education required for physical therapists; however, their suggestions did not produce any substantial change. This situation significantly changed in 1974; the APTA policymaking body, the House of Delegates, approved the "Essentials of an Accredited Educational Program for the Physical Therapist," which was a radical shift in educational policy (Scully & Barnes, 1989). Prior to this document, all policies concerning physical therapy education dealt with specific courses to be taught and the overall amount of hours required for degree awards. The emphasis in the new document was on the educational process with no specific course listing. Instead, it required programs to demonstrate appropriate outcomes including appropriate competency levels. This legislation provided the initial framework for the programs of the future.

During this same time period, universities developed schools of allied health professions as a way of promoting health professions within institutional settings (Echternach, 2003; Nieland, 2003). This move brought much needed attention to all health related educational fields (Perry, 1968). However, previously established programs with significant educational history, such as nursing, had the greatest benefit.

During this period of educational expansion, the APTA and its members wanted to eliminate the AMA from having the power to alter the educational philosophy for the profession (Scully & Barnes, 1989). In 1977, the National Commission on Accreditation officially recognized the APTA's Commission on Accreditation in Education (CAE) terminating the joint partnership between the AMA and the APTA (Nieland, 2003). This historical change allowed the membership to effectively create policies on education without any limitations from the AMA (Echternach, 2003).

As a direct result, the APTA immediately reevaluated educational policies in 1978 creating the "Standards for Accreditation of Physical Therapy Educational Programs" as well as "Criteria for Accreditation of Physical Therapy Educational Programs." These documents outlined an advancement required of all graduates in the areas of knowledge, professionalism, and clinical skills. The Association believed that the advancements that were made reflected the changing professional expectations of physical therapists within the healthcare system (Scully & Barnes, 1989).

The development of these accreditation standards was partly the result of a series of published reports conducted in 1960 by Catherine Worthingham suggesting change was needed (Worthingham, 1960). Doctor Worthingham performed an in depth analysis of all existing physical therapy education programs similar to that which was conducted on medical schools by Abraham Flexner in 1910 (Hislop, 1968). Her intent was to formally evaluate the depth and breadth of physical therapy education in the US (Worthingham, 1968). One of the most significant findings to come from her research was that physical therapy education should be at the post baccalaureate level (Worthingham, 1970). Worthingham suggested that many students graduating at the bachelor's level were not mature enough to effectively work in the healthcare environment or to advance the profession into the future (Johnson, 1974; Worthingham, 1970).

At the time of her assessment, two approved programs already offered a master's degree in physical therapy. Case Western Reserve University, a private institution, was the first to offer the master's in physical therapy and had been doing so since the late 1950s (Echternach, 2003). By 1970, there were a half a dozen programs offering post baccalaureate degrees in physical therapy (Echternach, 2003). Based on Worthingham's recommendations, the association reevaluated its position on degree requirements with an eye toward increasing practice expectations. As a result, the APTA in 1979, issued a new policy which stated that all physical therapy educational programs would be at a post baccalaureate level by 1990 (Echternach, 2003). This mandate was not greeted by institutions with positive accord. Many college and university leaders,



including the State Higher Education Executive Officers Organization, were concerned that an outside organization was attempting to influence higher education curriculum and questioned whether this was simply degree inflation (Echternach, 2003).

As a consequence, following the discussion and publication of this policy significant controversies arose. Only 8% of the existing programs offered a master's degree at the time, creating concern among institutions about finding appropriately prepared faculty that could provide the necessary educational environment. The main concern, however, was projected from institutional presidents regarding the ability of the APTA to provide autonomous accreditation decision-making that directly impacted university educational programs. Institutions were worried that the APTA would bias its decisions for accreditation based upon its policies and not on the merits of the programs. By 1989, the resulting pressures forced the APTA to transfer the power of accreditation from the Association controlled committee to a separate entity (Nieland, 2003). The Commission on Accreditation for Physical Therapy Education (CAPTE), the agency designed to manage the accreditation process, was sanctioned in 1977 and elevated to an independent entity in 1989 (Nieland, 2003). This agency was given the authority to accredit appropriate programs, as well as revise the evaluative criteria for accreditation (Nieland, 2003).

## Competitive Analysis

Programs able to develop master's level education early on enjoyed significant degree differentiation. At the time of Dr. Worthingham's report in 1960, two programs out of a possible forty-two had converted to a master's degree level. Although external policy changes by the APTA would later have a significant impact, it is apparent that several programs had already made the change, repeating the differentiation attempts that were observed during the initiation of the bachelor's degree. The differentiation impact was more significant by the 1980s considering the proliferation of accredited programs, which increased internal competition among physical therapy education providers.

Early changes to the master's degree again helped further establish physical therapy as a respectable profession. However, the grouping together of many different fields with a school of allied health professions promotes uniformity not differentiation. Johnson (1974) stated that the definition of allied health refers to support personnel who are sub-servant to physicians, dentists, and nurses and therefore not a true representation of the physical therapy profession. The development of an advanced degree status for physical therapy was needed to help promote professional diversity and differentiate it from other healthcare professions.

### The Entry-Level Doctorate: Focused Internal Differentiation

Institutional resistance and limited faculty resources prevented significant advancement of educational programs toward the master's degree. Finally, in

2000, CAPTE instituted guidelines limiting accreditation only to programs offering a master's degree or higher, which made all certificate and bachelor's programs obsolete. However, long before this could be accomplished, academics and policy makers within the APTA began to initiate discussions concerning the viable nature of a clinical doctorate degree.

Geneva Johnson's address to the APTA in 1985 outlined an expectation that the clinical doctorate should be the entry-level standard of education for physical therapy by the year 1990 (Johnson, 1985). She further acknowledged that any current program unwilling or unable to transition to the graduate level (at a minimum the master's degree) should cease operations (Johnson, 1985). Her comments, along with others, led to the formation of an Education Division Committee of the APTA to evaluate the appropriateness of an entry-level doctorate education (DPT). It concluded that the DPT was an appropriate degree award for entry-level graduates (*Report on Doctoral Education*, 1989).

Subsequently, the first DPT Program was developed and implemented in 1993 by Creighton University with five additional programs operational by 1998 (Domholdt et al., 2002). The APTA, however, did not formally endorse the DPT as the academic degree of choice until the year 2000 (Domholdt et al., 2002). A vision statement drafted by the House of Delegates foresees a profession composed of therapists who are doctors of physical therapy by the year 2020 lending support for the further development of DPT programs.

By 2000, there were eighteen DPT programs, fourteen of which were housed within private academic institutions including the likes of the University of

Southern California (USC), Duke University, MCP Hahnemann University, and New York University ("Education Programs Leading to Qualifications as a Physical Therapist," 2000). These programs, spread throughout the country, offered a unique educational degree that was often comparable in length to many of the master's programs.

The development of DPT programs throughout the 1990s also corresponded with substantial increases in the number of universities offering physical therapy degrees (Echternach, 2003). Public support for allied health professions had grown significantly and college administrators began to see a future in schools of allied health professions (Echternach, 2003) By 2000, there were 180 physical therapy programs across the US. This proliferation of programs began to significantly limit the overall applicant pool for many programs ("Education Programs Leading to Qualifications as a Physical Therapist," 2000). As a consequence, establishing any type of differentiation enabled a program to increase the quality and size of its applicant pool.

In addition, the escalation in the number of programs was combined with significant changes in healthcare reimbursement that eventually impacted physical therapy employment opportunities (Domholdt et al., 2002). These federal policies caused layoffs, longer hours, and an overall dissatisfaction among many working therapists. The impact of these actions trickled down to students who were considering physical therapy as a potential profession. Ultimately, programs felt the effects, which were manifested in smaller and inferior applicant pools (Echternach, 2003). The increase in the number of

programs at the same time as applicant pools were diminishing created a need for many programs to reinvent themselves. Therefore, led by the private schools, institutions began adopting the DPT educational model as an opportunity to differentiate themselves from the rest.

### Competitive Analysis

History repeats itself yet again with the transition to the clinical doctorate; physical therapy educational institutions led the way with implementing this higher level of education before any association consensus was reached. These early DPT programs, while fundamentally believing the advanced educational philosophy was appropriate, also established significant program differentiation during a period of substantial growth and instability. This was especially true for private institutions, which included five out of the six initial programs and twenty of the first twenty-nine; thus enabling them to attract larger applicant pools and quality applicants with unlimited cost restraints.

In the end, substantial growth in the number of physical therapy degree programs has altered the competitive landscape. Prior to the 1990s, physical therapy education programs often competed with other allied health professions to attract sufficient numbers of applicants. Now, substantial physical therapy program growth has created a greater internal competitive battle between physical therapy schools to attract the best candidates. Many students interview at more than one program with greater consumer understanding and questions about what each program will offer them.

## Differentiation Today

As of 2005, the development of the entry-level doctorate degree for physical therapy (DPT) has created a unique difference among universities. So much so that a survey performed in 2000 revealed that 58.7% of master's programs were in favor of switching to the DPT (Domholdt et al., 2002). When faculty were asked to reveal the reasons for switching degrees, 51% cited competitive advantage as most important (Domholdt et al., 2002). In a repeated survey performed in 2003, this number had increased to 68.3% (Domholdt, 2002). The original 2000 study, also looked at the rate at which programs were switching to the DPT and predicted that by 2006, 72% of all physical therapy programs would be at the doctorate level. Following the 2003 survey, this number was revised to 87%, indicating that the prevailing degree for physical therapy will be the DPT.

In addition to the competitive effects of implementation of the DPT, physical therapy programs have been experiencing declining numbers of qualified applicants since the late 1990s. From 1991-1994, the APTA reported that physical therapy education programs were often dealing with too many qualified applicants (Goldstein & Gandy, 2001). However, by 1999, healthcare reforms and other business forces had affectively created a decrease in applicant pools across the nation resulting in greater competition for the most qualified candidates (Burgess, Ponton, & Weber, 2004).

Analyses of the types of programs that have converted to the entry-level doctorate degree reveal that more than 60% of them are housed at private institutions (CAPTE, 2003). The differentiation created by the change in degree

has eliminated the cost restraints for private institutions. Expensive private universities, by offering the unique DPT degree early on, captured a stronger student applicant pool that had been declining since the mid 90s. However, current analysis reveals that 64% of the programs now in the process of converting to the DPT degree are public institutions that can provide the same degree at lower cost (CAPTE, 2003).

These studies indicated that the degree differentiation advantage, held primarily by private universities, would be significantly reduced by 2006 (the year the current study was conducted). In addition, due to the terminal status of the doctorate degree, further differentiation via degree advancement is no longer possible. Therefore, physical therapy programs will need to develop alternative competitive strategies. Creating alternative competitive strategies within physical therapy programs can be restrictive due to constraints of accreditation and program requirements. The question becomes, how will physical therapy education programs establish or maintain an individual competitive advantage once a majority of them have transitioned to the DPT degree?

### Competitive Strategy Research in Physical Therapy

To date, there are no published research articles that have evaluated the competitive strategies used by physical therapy education programs. One study performed by Burgess, Ponton, and Weber in 2004 stated that "a review of literature revealed no studies describing recruitment strategies employed by

professional physical therapy education programs” (Burgess et al., 2004). Their study, using a questionnaire, attempted to determine how programs were recruiting students. The survey results suggested that many programs use traditional methods, such as brochures; electronic methods, such as web pages; and personnel interactions. This study, however, did not discuss or evaluate the competitive strategies included with these advertising methods.

In addition, one other study by Johanson (2004), looked at the factors that influenced physical therapy program selection from a student’s perspective. The study assessed master’s and DPT students’ reasons for selecting the respective programs. The results indicated that students took into account the following considerations: cost, reputation, location, and program characteristics (Johanson, 2004). Although informative, Johanson’s project approaches the discussion of program variance through the buyer’s perspective and not the seller. Both of the previously mentioned studies have emphasized the ever increasing competitive nature of physical therapy education programs. Future recruitment success will depend upon understanding and promoting competitive strategies. Therefore, the current project attempted to understand how programs use competitive strategies to achieve recruitment advantages over other institutions. Researching and defining current program success provides in depth insight into how educational programs attempt to obtain and sustain a competitive advantage.



## Conclusion

Competition is a fundamental part of most business practices within the United States. Achieving competitive advantage requires implementation of cost leadership, differentiation, or focus. The business literature demonstrates that using one or a combination of these strategies results in above average performance. The literature also suggests that these same principles can be applied to non-profit organizations like higher education.

Multiple studies on higher education illustrate that recruiting top students is essential for maintaining institutional performance. The study on MBA programs revealed the implementation of competitive strategies enabled competitive recruitment advantages.

A current review of the physical therapy literature reveals an historical approach to competitive advantage through degree differentiation with the DPT representing the terminal end for growth in this area. Future strategies for success will have to be based upon alternative ideas, such as cost or differentiation in some other area.

To date, no research in the area of competitive strategy and student recruitment has been performed on physical therapy educational programs. Several studies focusing on student recruitment suggest that greater competition exists for fewer qualified applicants. Further survey research also indicates that many programs are concerned about achieving a competitive advantage. Thus, understanding how current successful programs have implemented different

strategies to create a recruitment advantage should enhance future program development.

## CHAPTER 3

### RESEARCH METHODOLOGY

Both quantitative and qualitative research paradigms could be used to answer questions concerning the competitive nature of physical therapy entry-level doctorate programs. Quantitative research focuses on objective findings developed through controlled experimental designs where the majority of behaviors can be manipulated (Merriam, 2001; Yin, 2003). In contrast, qualitative experimentation centers more on gaining a detailed understanding of the phenomenon to be studied through interpretation (Merriam, 2001). Deciding which approach to use is dependent upon the questions you are attempting to answer (Merriam, 2001).

Research questions often present themselves in three basic forms exploratory, descriptive, and explanatory. Exploratory research seeks to answer questions concerning relatively new or completely unknown phenomenon (Babbie, 2001). For example, the recent tsunamis that impacted the Indian Ocean coastlines stimulated many news organizations to perform exploratory research to better understand the phenomenon. This type of information gathering is often used to develop a more focused follow up study (Babbie, 2001).

Descriptive studies attempt to provide a detailed account of a particular event or situation with the end result of a clear picture of the incident (Babbie, 2001). Therefore, a descriptive study of the tsunami disaster would involve a detailed account of exactly what happened to a particular region or group of people. Babbie suggests that descriptive studies will often lead to the development of explanatory investigations.

The explanatory study provides us with specific information about how and why a particular event occurred (Babbie, 2001). These particular types of studies involve experimental designs that control for many variables. A researcher who wishes to understand why some people survived the Tsunami disaster while others did not is attempting to answer an explanatory question.

As Miriam (2001), Yin (2003), and others suggest, the formation of the research question should clearly define what particular type of research study should be performed. "Who," "What," and "Where" questions serve to answer exploratory and descriptive research about a particular event or situation. In contrast, "How" and "Why" questions seek to illustrate a link or relationship within a given context or set of parameters and thus are more explanatory. Babbie reminds us that the goal of many research investigations is to answer a combination of exploratory, descriptive, and explanatory questions.

Specifically, this study sought to answer a combination of descriptive and explanatory questions. The primary focus of the investigation is summarized in three questions. The initial question attempted to explain how entry-level doctorate programs in physical therapy (DPT) gain a competitive advantage over

rival DPT programs. The second question dealt with comparing programs housed within public institutions to those that reside in private universities. The third research question attempted to determine how older programs, especially those found within private institutions, expect to sustain their advantage over time.

Within the broader context of these two issues are several related propositions that were formulated to help guide the research process. Proposition 1 suggests that highly ranked programs will use at least one competitive strategy. Second, cost leadership will not be the only competitive strategy used by a program. Third, the most successful programs will be those that combine multiple strategies. Fourth, private institutions will focus more on differentiation while public schools will use cost leadership as a marketing tool. Finally, older programs will demonstrate a greater appreciation for internal and external focus.

Multiple types of research strategies can be used to answer descriptive and explanatory questions. For example, controlled experiments, survey research, and case study designs could provide answers to these questions. This particular study required an interpretation of current, uncontrolled events taking place across multiple physical therapy educational programs. Thus, the evolving nature of the proceedings studied did not lend themselves to an experimental design with control parameters (Yin, 2003). In addition, historical reviews provide only minimal amounts of data and leave out the present state of competitive strategic development (Yin, 2003). Survey research would provide general information about how many different programs have developed competitive strategies. However, the depth and breadth of the analysis using survey instruments can be

significantly limited (Yin, 2003). Instead, these research questions were best answered through an in-depth analysis of the current status of this social phenomenon using a case study approach (Merriam, 2001; Yin, 2003).

### Case Study Research

Yin defines case study strategy as “an attempt to understand current phenomenon within a real-life context.” Unlike experimental research that removes the variable from its environment, the case study design looks to answer questions through careful analysis of the event within its context. Graham Allison and Zelikow (1999), in *Essence of Decision*, illustrated how understanding the contextual framework provides invaluable information about a particular phenomenon. His case study, on the Cuban Missile Crisis, analyzed the different decisions made in reference to the changing circumstances that affected United States and Soviet interactions (Allison & Zelikow, 1999).

The goal of this project was to explain how physical therapy programs are currently attempting to compete within a highly evolving educational market. Analyzing competitive strategies within this contextual environment provided much more meaningful results.

Case study investigations also focus on multiple forms of evidence that when converged help to provide solid answers to the research questions (Yin, 2003). For example, although a survey research approach could provide a general understanding of recruitment strategies, it would not enable convergence of

multiple forms of data. The ability to combine multiple forms of data provide stronger support for explanatory conclusions.

Prior to data collection, case study strategy relies upon the development of theoretical frameworks to guide the data collection process. Allison incorporated three different approaches to understanding the governmental decisions made during the Cuban Missile Crisis (Allison & Zelikow, 1999). In the end, his integration of different frameworks of analysis created a deeper understanding of governmental administrative processes.

For this study, physical therapy educational programs were evaluated through two different theoretical frameworks. First, Porter's (1980) principles of competitive strategy were used to thoroughly examine each institution's ability to separate themselves from other programs. Beyond separation at one point in time lies the ability to sustain educational leadership. The second approach uses an analysis of competitive forces requiring organizations to establish an internal and external focus (Trot & Ries 1985; Panayides, 2003).

### Research Design

Case study methodology can be designed around a single case or multiple cases. Single case design usually involves a unique, extreme, or critical case that is not representative of the norm. In specific instances, single case designs can also be used when one case represents the typical situation or normative model. In contrast, multiple case study designs require the analysis of more than one case with the results providing the researcher with either replicating or

contrasting data (Yin, 2003). The selection of multiple cases that will support the same outcome results in a “literal replication” (Yin, 2003). For example, if three different tribes in India had been taught the same tsunami survival skills prior to the disaster, a case study analysis of each group’s response and outcome might yield replication of the overall effectiveness of the training. Contrasting data or “theoretical replication” involves the selection of additional case studies that will illustrate a different result (Yin, 2003). The assessment of three additional tribes that did not receive the training might yield a different outcome. Thus, literal replication provides evidence of the existence of a phenomenon while theoretical replication establishes support for the underlying speculative principles that govern it.

The current evolving state of physical therapy DPT education suggests that extreme variability exists among competing institutions. Therefore, a single case design, while informative about one institution, would not have provided a sufficient analysis of the variability across multiple programs. Instead, a multiple case design provided a greater sense of similarities and differences within physical therapy higher education. Specifically, a multiple case study design was used to capture replicating and/or contrasting competitive strategy data found among selected physical therapy higher education programs.

### Case Selection

Several different key factors were used to select the particular programs for this study. First, since the study focused on the development of competitive



advantage over and above degree variations, each program had admitted at least one class of entry-level doctorate students. Master's programs in transition to the DPT were more than likely focused on degree equalization to restore competitive advantage instead of alternative approaches. Thus, each institution within the study was already offering the DPT degree. In addition, the goal of the study was to develop an understanding of how programs at the same level compete for distinction and not how master's programs compare to entry-level doctorate programs. Therefore, no master's level programs were included.

Second, entry-level doctorate programs are currently located in both private and public institutions. Significant variances, such as cost, exist between these two types of universities that may create advantages or disadvantages when attempting to influence student participation. This study involved an assessment of four public and four private institutions (Table 1).

Table 1: Type of Institutions Selected for Study

Institutional Type	
Public Schools	Private Schools
4	4

Theoretically, the public institutions should have similar advantages and limitations with a strong potential for using cost as a primary means for establishing competitive advantage. In contrast, private universities may attempt

to establish focused differentiation through program variability. By using multiple sites within each category, I attempted to establish a “literal replication” of data for each category while comparisons across the two categories could reveal contrasting theoretical approaches (Yin, 2003).

Third, individual program selection was further based upon the length of time an institution has been offering an entry-level doctorate. Variations in program existence may provide different perspectives on the need for developing competitive strategies but more importantly create variations in strategies geared toward sustained success. Longer existing programs may have implemented, evaluated, and subsequently adjusted strategies based upon experience. These changes may coincide with substantially different competitive strategies for sustained growth. Therefore, each institutional type (public, private) included four programs that have been in existence for at least 4 years and four programs that had been operating for less than four years (Table 2). These different operational time periods should reveal whether there are substantial strategic variations between obtaining and sustaining competitive advantage.

Table 2: Institutional Type Combined with Years Offering the DPT

		Institutional Type	
		Public	Private
Years in Existence	Less than 4 years	2	2
	4 years or Greater	2	2

Approximately eighty programs met the above criteria requiring further delineation to narrow the selection process. A purposive sample was selected from the top fifteen percent of US News and World Report's Physical Therapy Program Rankings (*Physical Therapy Program Rankings, 2004*). Selection of potential sites within this grouping was based primarily on accessibility. If access was achieved, programs from the next ten percent would be evaluated and subsequently added to the matrix where applicable. The eight programs evaluated are listed in table three. Of the eight original programs selected for the study, only the University of Pittsburgh refused to participate.

Table 3 Participating Institutions

		Institutional Type	
		Public	Private
Years in Existence	Less than 4 years	U. of Nebraska U. of Iowa	U of Miami Northwestern
	4 years or Greater	Northern Arizona U. U. of Illinois-Chicago	USC Creighton

### Measurement

Once access was granted, determining the existence of competitive strategies required the gathering of specific data from each program. This study used four different sources of data: documentation, archival information,

interviews, and artifacts to develop an understanding of competitive strategies within each program.

Documentation data involved careful examination of written materials that may pertain to competitive strategy. This included mission statements, goals, proposals, minutes, advertisement materials, and curricular plans. The data collected did not constitute definitive answers to the research question but instead provided the researcher with an ability to corroborate or refute evidence collected from other sources (Yin, 2003).

Archival information represented historical data from the past (Yin, 2003). These materials included computer records, documents that outline changes to the program, various forms of quantitative data, and organizational charts. This data in particular helped identify program changes that may lead to sustained competitive advantage.

Interviews are a vital component for any case study analysis (Yin, 2003). They are often conducted with open-ended questions in a conversational format. This allows the participant to feel comfortable while still enabling the researcher to gather all of the necessary data. The information gathered provided valuable insight into the thought processes for obtaining and sustaining competitive advantage for each program. In addition, the interview data combined with documentation and archival information provided strong corroborating evidence concerning the implementation of these strategies (Yin, 2003). Interviews were conducted at each institution and included the department chair and at least one other faculty member.

An additional source of evidence for each case study was an examination of the programs physical plant. The ability of some programs to offer superior physical amenities, such as exposure to a clinic, advance research laboratories, high tech classrooms, or advanced technological equipment, may provide them with distinct advantages. Therefore, physical artifact analysis was conducted at each site with an attempt to understand the uniqueness of each program's facilities.

### Measurement Protocol

The case study design required adherence to a preset protocol in order to maintain reliability especially when using multiple cases (Yin, 2003). The protocol provided a template for gathering data from one site that can be repeated at each additional sites maintaining consistency throughout the process (Yin, 2003). Specifically, the protocol included a general outline of the case report, data collection procedures, and case study questions (Yin, 2003).

The general outline provided the researcher with an overview of the information to be gathered from each individual case. This template provided consistency for each evaluation and enabled the researcher to organize findings following each individual evaluation. For this study the general outline included

- General demographic information
- Mission and philosophical goals
- Strengths and uniqueness of the program
- Use of competitive strategies and associated outcomes

- Goals for the future
- Areas of focus for sustaining competitive advantage

### Collection Procedures

Data collection procedures provided a more specific description of the materials and associated timeline required to obtain the necessary information at each site (Yin, 2003). The procedures enabled the researcher to effectively prepare and perform each site visit consistently and effectively helping to establish reliability across multiple cases. The data collection procedure for this study is outlined in table four.

Table 4: Data Collection Procedures

Data Collection Procedures	
Name of site	
Years in existence	
Contact Person	
Date(s) of visit	
Day(s) and Times of interviews	
Documents to be reviewed on site	Mission
	Educational Philosophy
	Minutes to meetings
	Annual Retreat minutes
	Admissions Procedures/requirements
	Student Costs
	Operational Costs
	Supplemental Funding
	Student manual
	Faculty manual
	Research
	Tour of facilities
Information to be reviewed prior to visit	Website
	Curriculum
	Research
	Cost
	Resources

## Case Study Questions

Case study protocol contained two distinct levels of questions; level one pertained to specific questions that were asked during the interview process while level two involved questions to be answered about the individual case. Level one and level two questions for this study are outlined in table five (Appendix I).

## Specific Collection Procedures

Each of the eight programs in the study was contacted by email and phone to arrange for a date and time to visit the school. Prior to visiting a site, detailed analysis of the program's website was performed. Campus visits included a tour of the facilities, interviews with the faculty, and a review of documents. Each interviewee was provided with an informed consent and agreed to participate in the study as well as be recorded during the interview process. Following each trip, recorded materials were transcribed by a professional transcription service. A detailed description of the facilities was constructed and written documents were reviewed for content.

The first program to agree to participate in this study was the University of Southern California (USC). Dr. James Gordon is the current chair of the department and agreed to be interviewed for this study. In addition to Dr. Gordon, Dr Susan Howell associate professor and associate chair was also interviewed. Unfortunately, during both interviews the recording device malfunctioned resulting in a loss of a portion of Dr. Gordon's interview and Dr. Howell's entire

interview. The available recordings were transcribed professionally and the rest of the information was reproduced from memory that same day. Interviews and a site assessment were conducted on January 6, 2006; program documents were gathered that day and from the website prior to the visit. After careful analysis of all of the documents, several different categories emerged that best describe all of the aspects of the USC program.

From this initial case study fourteen distinctive categories were created that might best represent areas of competitive strategy for each of the eight programs (Table 5). Subsequent, data from the other seven programs were evaluated using the same framework.

Table 5: Color Coding System for All Documented Materials

Identified Area	Color
1. Mission	Purple
2. Educational Philosophy	Sky Blue
3. Departmental Structure	Orange
4. Faculty	Green
5. Research	Red
6. Student/Alumni	Blue
7. Recruitment	Brown
8. Curriculum	Yellow
9. Cost	Red Orange
10. Facilities	Yellow Green
11. Unique Features	Light Brown
12. Competitors	Black
13. Environment	Pink
14. Future Planning	Peach

The first public institution to be interviewed and the second overall program to be evaluated was Northern Arizona University (NAU). Dr. Mark Cornwall, chair of



the department and Karen Mueller, assistant professor and academic coordinator of clinical education for the program were interviewed. Both interviews as well as the site visit were conducted on January 11, 2006. Prior to my visit, I reviewed all of the program's website documentation. While at NAU, I was given a tour of the facilities by Dr. Cornwall and provided with documented information about the program.

The second private institution to be assessed for this project was the University of Miami. Data from its website and documents detailing the program's philosophies were collected in late January of 2006. Dr Sherrill Hayes, program director, was interviewed on February 2, 2006 and Dr Carol Davis, curriculum chair and director of faculty development, was interviewed on February 3, 2006. Both discussions occurred at the Combined Sections Meeting (CSM) hosted by the American Physical Therapy Association (APTA) in San Diego and were professionally transcribed. As an alumnus of the Miami Physical Therapy Program, I have a unique appreciation for the department and overall physical plant. Therefore, a specific onsite assessment was not conducted, however a detailed discussion with the program chair did happen confirming my knowledge of the facilities.

The next set of schools to be evaluated was Creighton University and the University of Nebraska. Both programs reside within Omaha and are located approximately nine miles apart. Consequently, both interviews and campus visits were performed on the same day. Creighton University was evaluated in the morning of February 13, 2006. Dr Gale Jensen, Professor of Physical Therapy

and Associated Dean, was interviewed along with the chair of the program Dr. Robert Sandstrom. Included in the visit was a tour of the facilities and presentation of documents describing the program.

Following my visit with Creighton, I drove across town to the University of Nebraska Medical Center to visit the physical therapy program. Interviews and data collection were performed on the afternoon of February 13<sup>th</sup>. Dr. Pat Hageman, program chair and Dr. Kyle Meyers, coordinator of clinical education for the department were interviewed. A tour of the facilities and campus was provided.

On Monday, April 3<sup>rd</sup> two additional programs were evaluated. The University of Illinois-Chicago (UIC) and Northwestern University both reside in the City of Chicago, approximately twelve miles apart. The procedure for the Nebraska trip was repeated in Chicago with a morning excursion to UIC. The chair of the program, Mary Keehn, and the associate dean and physical therapy faculty member Suzanne Campbell were interviewed. A brief tour of the teaching facilities was provided, however time did not permit us to view the teaching hospital. Documents were also collected during the visit.

In the afternoon, I visited Northwestern University in downtown Chicago. Interviews were conducted with Professor Babette Sanders and the chair of the program, Dr. Karen Hayes. A tour of the facilities was provided along with program documents detailing their educational approach.

The final program, the University of Iowa, faculty finally agreed to be interviewed on April 23<sup>rd</sup>. The program chair, Dr. David Neilsen and Dr. Karen

Maluf, professor were interviewed. In addition, an extensive tour and detailed written documents were provided during the visit.

Following the return of the transcribed materials, detailed chapters were created for each of the program evaluated for the study. Following the development of the individual chapters, a summary chapter provides an overview of all eight programs.

### Measurement Controls

In order for any research project to be acceptable, specific steps must be taken to ensure accurate data collection and analysis. Case study research design should adhere to construct validity, internal validity, external validity and reliability measures to ascertain quality results (Yin, 2003).

Construct validity deals with correctly identifying dependent measures that represent the concepts under study (Shadish, Cook, & Campbell, 2002; Yin, 2003). This study attempted to identify how competitive strategies are used in physical therapy education programs to gain and sustain an advantage over their rivals. Program documentation, archival records, and interview information when triangulate together provided a comprehensive evaluation of each program's competitive strategies. The presence of multiple forms of data that all suggest similar results indicated strong construct validity (Yin, 2003).

Internal validity is concerned with answering questions about cause and effect while ruling out alternative explanations (Shadish et al., 2002). The program setting (public or private) and/or the years of existence (greater than or less than

4 years) may create significant difference in the type of competitive strategy used (cost, differentiation, focus). Multiple case study methodology, unlike experimental design, does not directly control for alternative explanations. However, inferences about the data collected can be supported through a data analysis process that incorporates explanatory models while evaluating the potential for rival explanations (Yin, 2003). In this case, competitive strategies identified by individual programs were compared against a model of competitive advantage. In addition, multiple cases were used to substantiate findings.

External validity enables the researcher to generalize the findings beyond the sampling data (Shadish et al., 2002). In a case study design, generalizations about findings are not made to other cases but rather to theory development. For example, the results might indicate that private institutions rely on focused differentiation to create competitive advantage while public institutions primarily use cost controls. In order to make such external claims, the data must be substantiated through replication. This multiple case study design provided significant replication that allowed for generalizations.

The ability of another researcher to reproduce the same results would indicate the reliability of the findings. Multiple case study designs can be highly susceptible to reliability errors (Yin, 2003). As a consequence, a detailed data collection protocol is required to enable the researcher to follow the same procedures at each case study site (Yin, 2003). This prevented variations within each site and across sites.

A second way to enhance reliability is to develop a chain of evidence (Yin, 2003). This allowed any outside observer the ability to start from the basic study protocol, review the procedures, analyze the data, and end up with the same conclusions as the researcher. Developing such a chain requires careful documentation throughout the data gathering process. Miles and Huberman (1994) have suggested developing a table that coordinates data gathered with ideas under study. Constructing this table shell prior to data collection further enables the research to carefully gather all relevant materials at each site (Appendix I). Following data collection and individual program analysis, a second table shell was constructed to provide further analysis of the data (Appendix I).

### Summary

This research study used a multiple case study design to evaluate the use of competitive strategies employed by physical therapy educational programs. Specifically, this project focused on programs offering a DPT and currently rank nationally in the top fifteen percent. An analysis of multiple programs provided for an opportunity to establish strong data replication. In addition, the multiple cases, detailed research protocol, and various forms of evidence created a well-controlled study. The findings from which helped to establish a comprehensive understanding of competitive strategies within physical therapy educational programs. The next eight chapters represent the findings from each of the individual programs evaluated.

## CHAPTER 4

### THE UNIVERSITY OF SOUTHERN CALIFORNIA

The University of Southern California (USC) is a private, research extensive institution located in the heart of the city of Los Angeles, California. The physical therapy department resides on the Health Sciences Campus adjacent to the large USC+LA County Medical Center. Each fall, ninety new graduate students begin a three-year program that culminates with the awarding of an entry-level doctorate in physical therapy (DPT). In addition to the DPT program, the department has a well-established PhD program in Biokinesiology and two separate residency programs for post entry-level graduates. As of September of 2004, US News and World Report ranked the USC DPT program number one out of 209 physical therapy programs in the United States (*Physical Therapy Program Rankings, 2004*). Dr. James Gordon and Dr. Suzanne Howell were the two faculty members interviewed for this study.

The USC Department of Biokinesiology and Physical Therapy was originally founded in 1943. At that time, successful completion of the curriculum culminated in a bachelor's degree. Since its inception, the department has considered itself "a pioneer" in the development of physical therapy education illustrated by a constant and progressive evolution that began with a transition to the master's degree in 1974. Recognizing the need to provide a resource for faculty

development, the department implemented one of the first PhD degrees in physical therapy in the early eighties. Subsequently, USC became “the first physical therapy program to directly award a PhD degree in 1984.” By the early eighties, the program’s leader, Dr. Helen Hislop, began suggesting that entry-level physical therapy students should be awarded a clinical doctorate instead of a master’s degree. USC finally saw this vision grow to be a reality in 1995, becoming the second program in the nation to offer the DPT degree. Also during the early nineties, the department changed its name to Biokinesiology and Physical Therapy to reflect its research emphasis in movement science. Overall, the department considers itself one of the “premier programs” in the country.

#### Departmental Structure

The USC Department of Biokinesiology and Physical Therapy offers several different degree programs. The largest program is the three year entry-level Doctor of Physical Therapy (DPT) for students who want to become licensed physical therapists. The curriculum is comprised of didactic and clinical course work with approximately 249 students enrolled. The department also offers a Master of Science (MS) and Doctor of Philosophy (PhD) degree in Biokinesiology preparing students to become research scientists. In addition, there are two different post-professional programs for licensed therapists. Therapists who do not have a DPT degree can enroll in the post-professional DPT program obtaining advanced clinical practice skills and a transitional DPT title. The other program is a specialized residency designed to provide therapists with advanced

practice techniques in either orthopedics or neurology. The department has an overall enrollment of approximately 300 students.

### Mission

A mission statement defines the specific objectives for any company or organization. In academia, most academic departments develop mission statements relative to each of the specific educational programs it offers and at times may develop a single global statement that is more visionary in nature. An assessment of USC's Department reveals program missions for each program that are fairly typical and provide an appreciation for the expected outcomes. However, what really defines their actions and goals is a global mission or ideal that shapes the current DPT program as well as providing a vision for the future.

USC has stated within its documents that the DPT program's goal is to "prepare graduates to be autonomous practitioners, capable of evaluating and treating patients without the need for referral and with the ability to collaborate with other health professionals." This was reiterated by Dr. Howell who suggested, "The program strives to produce graduates who are able to achieve autonomous practice and are provided with the necessary tools to differentially diagnosis." The department's mission, however, is much broader reflecting a need "to enhance the physical well-being and quality of life of humans by advancing the practice of physical therapy and the science upon which it is based." To accomplish this broader objective, the program focuses on three primary areas: physical therapy education, clinical and life science research, and



developing and providing innovative models of clinical practice. When I attempted to isolate the DPT mission from the other components of the department, it became apparent that the faculty interviewed believe this to be impossible.

Dr. Gordon suggested the DPT program is not considered separate and distinct from the PhD or residency programs and therefore falls under the more global mission statement. He stated that “these three programs are “interwoven” and thus a more global mission defined by the principles of education, research, and clinical practice serve as the focal point for the faculty.” Dr. Gordon believes that focusing separately on each component of the department would weaken the outcomes and limit the achievement of its graduates.

Subsequently, at the forefront of this global mission is the concept that education is an ever-evolving process that is directly supported by scientific research. The faculty at USC believe “competent, autonomous practitioners are developed through the integration of newly discovered information that is derived from basic science and clinical research.” The department’s implementation of a PhD program back in the early eighties created the foundation for a strong integration of basic fundamental knowledge combined with new research evidence. Dr. Gordon reiterates this message by stating “our research mission is coequal with our educational mission.” Thus, the mission of the DPT program is to educate the student using newly discovered research findings enabling the graduate to be “the expert” within the movement science field and, more specifically, movement science related to disability. The department wants each

of its DPT graduates to be “on the cutting edge” in relation to treatment design and implementation in all areas of physical therapy.

The concepts of education and research are further integrated by the implementation of innovative models of clinical practice studied in their different clinical settings. The clinical practice component of the mission was first initiated during the 1990s when the University Hospital was built. Dr. Gordon explained that the department was approached with the opportunity to be in charge of providing the physical therapy services for the hospital. The department accepted the challenge and has since evolved its practice into two additional outpatient clinics that are linked to both the medical campus and the main student campus. The access to these clinical sites has provided the department with the resources to conduct investigations on alternative approaches to patient care that could advance the overall effectiveness of physical therapy treatment.

Ultimately, the mission of the department is to help advance patient care to benefit humanity. The combined emphasis in education, research, and clinical practice serves to achieve this goal through advancing the practice of physical therapy. One conduit for the advancement of patient care lies with the DPT graduates who are exposed to a highly developed evidence-based curriculum.

### Educational Philosophy

The ability to produce a competent, autonomous practitioner comes from a strong, evolving curriculum that is centered on the study of Biokinesiology. Dr. Gordon stated that “the name was adopted in the early 1990s to reflect the need

for a strong foundation in movement science as well as to reflect a more research-centered curriculum.” Specifically, students are educated from the perspective of normal and abnormal movement science. Each faculty member provides a different area of expertise that contributes to the overall growth of the student’s knowledge within this movement science. The mixture of faculty expertise centered upon movement science knowledge creates a well-rounded advanced education that enables the student to become an expert in all areas of rehabilitative movement science.

Additional emphasis is also placed upon the educational atmosphere. Program documents state several different times that the department strives to create a dynamic learning environment through patient interactions and exposure to clinical and research activities. Dr Gordon described how the clinical residency programs are considered “laboratories for creating models of practice where the envelope can be pushed.” The results subsequently impact the DPT students who observe the residents in the clinic and are often taught by them in laboratory courses. In addition, Dr. Howell discussed the fact that clinical internships are dispersed throughout the curriculum to allow for greater integration of classroom material creating a more dynamic learning environment. She also reported on a new component to the clinical curriculum where faculty work with students in their final year during clinical rotations to solidify their knowledge of complex patient care.

The faculty also believe that student involvement in research is integral to their ability to development as practitioners and leaders. The goal is to foster an

appreciation for clinical research through laboratory and clinical research experiences. Students are not required to complete research projects but the exposure enables students to appreciate the value of clinical research.

### Faculty

The USC Biokinesiology and Physical Therapy Department is composed of twenty-six full time, doctoral prepared faculty and forty adjunct faculty. Twenty-two of the full time faculty are physical therapists with the four remaining faculty having expertise in fields related to movement science. The entire staff is comprised of both strong scientific and clinically oriented people. Many of them are distinguished leaders within their fields of expertise and have strong records of research productivity and publication. Dr Gordon states, "I would say the faculty really are the primary strength of any program." Dr. Howell also stated that one of the strengths of the USC program is its faculty. Several of USC's faculty are recognized nationally as leaders within their research and teaching fields. Many of them annually present research and teach lectures nationally.

Having twenty-six full time faculty allows the program to select and hire individuals with specialized areas of interest and expertise. This creates a staff that is very diverse, enabling the program to offer a curriculum that is both broad and in depth. Dr. Gordon suggests that a faculty of 7 or 8 are more than likely teaching at least one class in which they lack expertise and producing a less than optimal outcome. The USC program, in contrast, can have multiple experts in various fields, such as orthopedics, cardiopulmonary, and neurology, who can

offer differing perspectives or expertise in a very specific area of practice. In the end, this combination of faculty allows for a very advanced and specialized DPT education. As previously discussed in the mission, the faculty number, expertise, and diversity allows for the development of a research supported educational program that is “intellectually rich.”

### Research

As illustrated in the mission, the research endeavors are an integral part of the overall approach to the DPT education. Dr. Gordon stated, “Dr. Helen Hislop, prior chair of the program, believed a physical therapy program should operate like a medical school where faculty conduct research at the cellular level as well as the clinical level.” This approach has enabled the department to “have a group of research faculty who also teach predominately in the more science oriented courses.” Subsequently, as the staff has grown, new faculty as well as old have adopted this approach, giving the department a diverse group of cellular and clinical researchers. The program’s slogan “From molecules to movement to behavior” emphasizes this multilevel approach to understanding human movement. The diverse expertise of the staff creates an environment where “students are being taught by people who are on the cutting edge,” and therefore are always raising the level of DPT education.

All of the research activities at USC are centered around a core theme related to the study of biokinesiology and focused on an attempt to understand “the causal links between biological mechanisms and purposeful movement.” By

constructing a central movement science theme, the program has been able to create seven “state of the art” research laboratories where faculty conduct multiple research projects. Several labs focus their efforts on understanding the musculoskeletal system and the effects of aging. For example, the cellular aging laboratory specifically looks at the influences of aging on skeletal muscle, bone, and also the mechanism of muscle hypertrophy. The clinical electrophysiology lab is attempting to better understand the effects of muscle stimulation in different populations. The clinical exercise research lab conducts studies evaluating the interactions of exercise, drugs, and hormones on aging populations and the musculoskeletal biomechanics lab focuses its studies on understanding the root causes of musculoskeletal disorders and the biomechanical basis for functionally based exercises and their governing principles.

The neurological laboratories are subdivided into three different areas: motor behavior, motor control, and oral motor function. The motor behavior and neurorehabilitation lab focuses on discovering the brain-behavior relationships that are essential for the learning and execution of skilled movement behaviors. The motor control development lab investigates prenatal and postnatal motor behavior and the understanding of early experiences and environment in normal motor development. Finally, the oral motor neuroscience lab looks at the developmental relationship between the brain and facial region in an attempt to better understand pediatric feeding disorders. Overall, the department possesses a significant level of research capability as measured by the amount of space

and equipment. As a consequence, the faculty have invested a great deal of time and resources into making its research aspect a success.

Students in the DPT curriculum are not required to complete an individual research project. However, they are given the opportunity to participate in research activities that the faculty are conducting within a given laboratory. The exposure to these research activities, as well as the emphasis on research findings produced by the faculty, provide the student with a strong appreciation for evidenced-based clinical practice.

The faculty's research efforts have been rewarded with more than \$1 million in external funding including NIH awards. In addition, the department received a \$1.5 million grant (the largest ever granted) from the Foundation for Physical Therapy to establish a multi-site clinical research network. All in all, the research approach to advancing the DPT education is well integrated within the program design at USC.

### Facilities

The Biokinesiology and Physical Therapy Department at USC occupies more than 35,000 square feet on the USC Health Science Campus. Within this space, the program has several dedicated lecture based classrooms including one large lecture hall. The lecture rooms are equipped with monitors, computers, and video machines to allow faculty to present material in a variety of formats.

The department also has five large teaching laboratories that contain a variety of state of the art equipment. Each of the teaching labs has specific equipment

designed to teach students different aspects of rehabilitative care. For instance, the orthopedic lab has many electric plinths and orthopedic equipment for students to practice different spine and extremity techniques. The neurological laboratory has multiple large electric mat tables to enable students to practice their treatment techniques designed at aiding recovery from stroke, spinal cord, and brain injury. The cardiopulmonary lab has exercise equipment and other resources that allow students to become familiar with aerobic based treatment applications. Each of these laboratories are equipped with cameras and television monitors suspended from the ceiling to allow students in the back of the room or away from the demonstration to see the activities up close while remaining at their stations.

Besides the lecture halls and teaching laboratories, the DPT students also have access to their own cadaver laboratory, locker room, and a computer lab. Dr. Gordon described the USC facilities as “outstanding and a big strength of the program.” The cadaver lab offers every student within the program the opportunity to participate in dissection activities. Since the cadaver laboratory belongs to the program, the students have the opportunity to use the lab throughout an entire academic year, which is often rare among physical therapy programs.

The classrooms, laboratories, and research facilities are centrally located within the Health Sciences building providing easy mobility for students and faculty. The building itself is older than the hospital and has an institutional feel created by the plain white paint on the walls and the plain white tile flooring.



Overall, the amount of space, size of the classrooms, and the equipment available is impressive and support the program's perspective that it has "outstanding facilities."

### Curriculum

Curricular design in physical therapy is not standardized. USC has created a thematic approach where students learn concentrated areas of study. Dr. Gordon provided the following example, "First year students take several different focused semesters that will concentrate their studies on a particular set of material, such as musculoskeletal, neurological, or cardiopulmonary. Following the implementation of a specific area of concentration, each student then completes a clinical education rotation within that area." Dr. Howell believes that these short clinical rotations strengthen the program. This (clinical rotation) provides the student with an opportunity to solidify learned didactic material through clinical practical application.

The didactic portion of the curriculum is supported by 48 weeks of clinical education. Dr Gordon believes that their approach to clinical education is unique because each student completes seven different rotations throughout the course of the program rather than the more traditional format where internships are all conducted at the end of the program. The USC program offers three, two-week clinical internships at the end of each of the concentrated segments. In addition, each summer, students complete a 6-week internship. Once the entire didactic portion of the program is complete, each student participates in two 16-week

internships, one of which is broken up to allow the student to attend three days in the clinic and two days at school. Dr Gordon describes this set up as “our integration semester” where the students are mentored by faculty at the university on their off days. This clinically oriented capstone experience helps to finalize the student’s preparation for entry-level practice. The disbursement of these internships throughout the curriculum works to help students maximize their educational potential and make them ready for autonomous practice.

Beyond the basic design of the curriculum, Dr Howell feels strongly that the students also benefit from a well-developed base of clinical sites. Many of the program’s graduates work in settings that support the program through clinical educational contracts. In addition, Dr. Howell reports, “The program has a wide variety of clinical settings across the country including Alaska as well as international sites,” all of which allow the student to maximize their clinical development.

### Student Recruitment

One question posed to the interviewees was the importance of attracting good students. As Dr. Gordon suggests, “in order for the curriculum to work you need excellent teachers but also excellent students.” Both Dr Gordon and Dr. Howell agree, as a strength, excellent students create an environment where the level of information taught is often raised fostering a greater exchange of ideas and higher learning. Dr. Gordon believes the program’s reputation attracts some of the best students from across the country. In turn, these students graduate

becoming excellent therapists who represent the University and demonstrate its educational effectiveness. He suggests "a strong marketing tool for any program is the successful visibility and quality of their graduates."

USC has created several different marketing strategies to promote awareness about its program. First, Dr Gordon feels that the most important tool for promoting the program is its internet site. He feels strongly that most applicants today first inquire about a program through the use of the internet. The USC website covers all areas of the department including multiple places where interactive video can be activated to see classrooms and hear from faculty talking about the program. Information and applications for the program can all be acquired through the internet site. In addition to the website, the program has produced a DVD that provides the prospective student with information about the program.

Besides the website and DVD, the department holds an annual open house for students interested in enrolling in the DPT program. All applicants are invited to attend and to meet with the faculty and students and learn more about the program. Dr Gordon stated that "this is a time for the students to find out about our program." The faculty take this opportunity to explain to students why USC's is a great program. The program does not do individual interviews with applicants but instead feels the need to provide the applicant with as much information about the program as possible. Thus, the open house provides them with this avenue.

USC, because of its ranking and reputation, is competing with many other quality programs for its applicants. Dr Gordon reports that USC is in competition with national programs across the country, mainly other private institutions. He believes most often they are competing with Washington University in St. Louis, Northwestern, Pittsburgh, Delaware, Duke, and Miami. However, USC does not lose many of its applicants to instate schools. Currently, many of the instate programs are unable to offer the DPT, thus limiting their competitive strength. In addition, Dr Gordon believes that USC's rich history and reputation give the program a competitive advantage over instate rivals. The program does lose potential applicants each year but for different reasons. Both Dr Gordon and Dr. Howell agreed that the number one reason for losing a potential student was cost.

#### Cost

The program is funded through tuition dollars and thus requires students to absorb the majority of the cost to run the program. Students are required to pay approximately \$40,000 per year for the first two years with the third year costing only \$24,000. With other associated fees, each student will pay approximately \$105,000 for the three-year program. This does not include books, living arrangements, traveling expenses, or food.

The average private DPT program in the US costs approximately \$60,000 while the average cost for a public DPT program is around \$35,000. USC tuition

costs make it the most expensive entry-level DPT program in the country. Although loans are available, most students graduate with sizable debts.

### Unique Features

The department has evolved with the expansion of the medical campus. Dr. Gordon stated, "In 1991, when the University Hospital was built, it provided the program with an opportunity to start a clinical practice. Later this initial inpatient practice was expanded into two additional outpatient clinical practices. Together the three sites are known as USC PT Associates. The access and control of these clinical sites allows the program to offer unique educational opportunities not always available at other institutions. Students have access to patient care examples during the didactic portion of the curriculum, which creates a very interactive and comprehensive learning environment. For example, Dr. Gordon described a process where initial interview training for first year students involves performing them on patients in the acute hospital. The program's relationship with the hospital has also created other educational opportunities.

In addition, control of and proximity (a short walk from the department) to the hospital has allowed the department to institute a residency program for licensed therapists. This program is designed to advance an experienced therapist's skills in either orthopedics or neurology. The goal of the program for therapists is to bring them up to a level where they feel they are on a "peer-to-peer level" with physicians. Although the DPT students are not directly involved in the residency

program, the residents interact with the DPT students providing them with laboratory assistance and clinical role models.

The residency program also provides the faculty with an avenue for real life laboratory experimentation. One of the department's future goals is to be a leader in post-professional education. The residency program represents the department's first endeavor into this arena. The program is designed to "push the envelop" of physical therapy healthcare allowing the faculty to observe and effectively evaluate different models of clinical practice. The results should shape future changes in the DPT curriculum helping graduates become leaders for the next generation.

### Environment

The USC Physical Therapy Department is located in the heart of Los Angeles. Drs. Gordon and Howell suggest that this can be both a positive and negative with regard to student enrollment. The nice year-round climate provides students numerous outdoor opportunities and thus attracts many applicants from the Midwest. Juxtaposed against the climate is the cost of living, which is very high and can be a strong deterrent for some applicants. Besides the climate and cost of living, the department's age and its location within a research extensive university provide some additional environmental effects.

The program has been in existence since 1943, which makes it one of the oldest programs in California. Historically, over the last seventy plus years, the department has evolved and changed to meet the growing healthcare needs of

California and the US. In doing so, it has earned a national reputation as a leader in the field of physical therapy education, which has given it a superior reputation within the state of California. Dr Gordon suggests, "The length of time and success has provided USC with a monopoly status within California when it comes to recruiting quality students." In addition, alumni of the program far outnumber those of any other program in California, which further influences potential applicants through mentoring situations and professional interactions. The clinical exposure of potential applicants to these alumni can strongly influence an applicants perceptions about the program.

Besides the department's historical success, its private institutional setting within the California educational environment provides a unique advantage over public programs. California has a three-tiered public educational system where doctoral degrees are awarded at the university level; state colleges offer bachelor's and master's degrees while the community colleges offer associate and bachelor degrees. Thus, in the late 70s and early 80s, physical therapy programs were developed within the state college system and not at the university level. As a consequence, state institutions are unable to offer students a DPT degree because of their institutional setting. USC, in contrast, can alter its curriculum because of the private research institutional environment and therefore is one of only a few programs within California to offer the DPT. This unique environment works to support a continued difference in degree offerings among the public and private programs in California.

One other environmental aspect that impacts this program is its classroom size. Each year the program accepts ninety students into the DPT curriculum. This is one of the largest (class size) programs in the country. On average, most DPT programs accept forty students per year with the high end near sixty and low end near twenty. The program has enough classroom space and equipment to effectively accommodate this size of class, but Dr. Gordon admits that some students are often concerned about their ability to learn in such a big class. The faculty recognize that having so many students in one class limits their ability to know each one individually; however, they believe the high volume of students provides them with some significant benefits.

Dr Gordon believes the large class size can be considered a strength because it provides enough revenue to have an extensive and diverse faculty. Currently, USC has 26 full time faculty, which is twice as many as most programs. The large staff offers a unique capacity to have specialists teaching in all most every aspect of physical therapy, which sets USC apart from most programs. In addition, the funds generated allow them to have over forty adjunct faculty who support the teaching process through laboratory instruction. Dr Gordon suggests, "It is important to look at laboratory teaching ratios, with the number of adjunct faculty, USC's ratio is close to 10 to 1 for many of its laboratory classes." Still, Dr Gordon admits, the overall size of the class has some negative effect on recruitment and retention of students.



## Future Goals

The USC Department of Biokinesiology and Physical Therapy views itself as a leader in physical therapy education. Therefore, the program is constantly evaluating its outcomes and determining where it will attempt to improve itself. Dr. Gordon expressed several times during our interview the vision and goals of Dr. Helen Hislop. It is apparent that her ideas and goals have set a foundation for the DPT program as well as the Department. These ideals have been at the forefront of the growth of the different degree tracks and the overall success of the department. It is also obvious speaking with both faculty members that the success of the program in large part is due to its assessment and implementation of new ideas, such as a PhD program, Biokinesiology emphasis, and the DPT program, throughout the years.

Dr. Gordon discussed two different areas of future growth for the department. First, the faculty are discussing an interdisciplinary approach to treating and enhancing wellness. They would like to develop a patient centered approach to healthcare that teams occupational therapy, physical therapy, and pharmacy. The project would entail joint research efforts that would promote health and wellness in different populations.

A second area of future advancement for the department deals with specialist certification. Specifically, the department sees the future of specialist degrees under the control of the educational system similar to a medical model approach. Therapists would be provided with training emphasizing a specialized area of

clinical practice. Completion of the training would culminate with the awarding of a specialist certification.

Inherent within the program already is the focus on the advancement of the DPT curriculum through research findings and assessment of clinical models. The faculty's concerted efforts to discover answers to movement impairments will continue to enrich the educational process for the entry-level program. In addition, the strong PhD program will also continue to influence clinical practice and the DPT students.

### Summary

The DPT program at USC is shaped by the faculty's belief in their mission of education, research, and clinical practice. The integrative faculty approach to these three areas provides constant program enrichment. Overall, it is apparent that their efforts have resulted in a highly respected program.

## CHAPTER 5

### NORTHERN ARIZONA UNIVERSITY

The University of Northern Arizona (NAU) is a public, research intensive institution located in Flagstaff, Arizona. The Department of Physical Therapy is one of three programs housed within the School of Health Professions. Each fall semester, forty students are admitted to the entry-level doctorate in physical therapy (DPT) program that is thirty-three months in length. In addition to the entry-level program, the department also has a transitional DPT degree that provides licensed physical therapists with the education necessary to advance their bachelor's or master's degree to the clinical doctorate.

Dr. Carl DeRosa, a current member of the faculty, founded the NAU Department of Physical Therapy in 1978. The original curriculum provided students with a baccalaureate degree until 1989 when the department decided to change the program to a Master's in Physical Therapy (MPT). This transformation corresponded to alterations in educational philosophy being promoted by the American Physical Therapy Association (APTA). Similarly in May of 2001, the program opted to modify its degree award to the entry-level doctorate degree (DPT). Since its inception, the program has maintained a national reputation for academic excellence and was ranked tied for 16<sup>th</sup> in 2004

(*Physical Therapy Program Rankings*, 2004). The following faculty, Dr. Mark Cornwall and Prof. Karen Mueller, were interviewed for this study.

### Departmental Structure

The NAU Department of Physical Therapy offers two-degree programs. The larger of the two programs is the entry-level DPT, which consists of 111 credits divided over a three-year period. Within that time frame, students complete didactic and clinical course work that prepares them to take on the responsibilities of providing quality healthcare services to all types of patients.

The transitional DPT program provides licensed therapist with an avenue to advance their bachelor's or master's degree to the doctoral level. Students enrolled in this degree track complete coursework on the weekends and evenings in an entirely face-to-face format.

### Mission

The NAU brochures document several different statements that outline the mission of the department. The educational programs are said to “prepare students to be life-long learners, critical thinkers, and clinically competent practitioners who function autonomously within a complex health care system.” In addition, program brochures also define additional goals, such as “is a primary mission of the department to prepare physical therapists to assume leadership roles within the health care system.” The website reiterates these points and adds the following:

“To prepare graduates with a foundation in the natural, behavioral, applied, and health sciences coupled to the art and science of physical therapy, which imparts the knowledge and skills to make diagnoses, prognoses, provide interventions, and empower patients.”

“To provide physical therapists who are trained for general practice and can serve as a point of direct access.”

An overall assessment of these statements reveals a program focused on developing a clinically-competent professional.

In discussing the mission of the program with faculty members, there is a strong emphasis placed on student performance. Dr. Cornwall describes the mission as “preparing the best possible student,” while Prof. Mueller suggested the program, “emphasizes teaching our students a good general education that will prepare them to function effectively in any setting.” Their statements along with the documented mission suggest that the primary goal of the program is to produce physical therapists that can work in any healthcare setting.

However, discussions with faculty also indicate that producing quality healthcare practitioners also involves preparing them to be active leaders within the profession. As Dr. Cornwall alluded, “We want our students to meet the challenges and hopefully advance their profession not just ‘fill a vacancy’.” The faculty believe part of the educational process involves developing professional values that will allow graduates to become leaders within physical therapy.

Conspicuously absent are statements that provide insight into faculty goals and objectives. Conversations with the faculty suggested that part of the mission of the program is to produce research and maintain a strong link to the physical therapy community, but the main emphasis of the program is on student

outcomes. Prof. Mueller asserted, “We are a very student-centered program where the emphasis is on teaching” students to become clinical therapists and professionals.

### Educational Philosophy

NAU’s student-centered approach to physical therapy education focuses on academic and professional development. Their ability to achieve successful outcomes is based upon an “integrated” approach.

Academically, the program focuses on creating an environment where students must apply their knowledge. Prof. Mueller acknowledged, “A lot of emphasis [is placed] on the development of problem solving skills.” Students are asked to solve problems through “case-based learning,” which forces them to integrate learned material when solving complex patient problems. Prof. Mueller stated, “We try to integrate (material) even though we have different tracts within the curriculum.” For example, aspects of the musculoskeletal component of the curriculum are added to the patient cases used within the neurological courses. This integrated approach to entry-level education enables the department to produce a highly competent practitioner who is able to succeed in multiple clinical environments.

Professionally, the faculty want students to appreciate the values and responsibilities that are required when assuming the role of a healthcare provider. Therefore, they have adopted a philosophy of “professional modeling” that enables them to demonstrate the values and beliefs that they believe each

student should strive to achieve. As Dr. Cornwall affirmed, “We have made a conscious effort to encourage them (the faculty) to be active in association activities both at the local and state levels,” demonstrating their commitment to professional leadership. He further suggested, “We’ve made sure that students understand that we think it’s valuable and we think it’s important.” Subsequently students are encouraged to attend conferences and be involved in governance whenever possible.

As the program has made the transition to the entry-level doctorate degree, the faculty have asked what is it that will make this degree different from the master’s degree. As Prof. Mueller describes, philosophically the faculty believe that doctoral students should evolve into an “engaged professional” who is “prepared to use [his/her] profession for the good of society,” requiring active student participation. This process begins with a talk about the core values established by the APTA. Prof. Mueller states, “We don’t just say here they are, we ask them to give us examples by going out into the community.” She has termed it “core values week” where students have to live the values through exploration within the community. What she hopes they gain is “an appreciation that core values are an integrated part of who you are (as a therapist), not just something external that the APTA tells you that you got to do.” Beyond the core values, students are exposed to different leaders and their perspectives on the role of the physical therapist within the health care profession hopefully leading to a complete professional education.

In essence, NAU's educational philosophy focuses on developing a competent professional capable of providing quality care and leadership. To accomplish this requires a dedicated and committed faculty who subscribe to the same beliefs.

### Faculty

The NAU Department of Physical Therapy has eight full-time faculty, seven of which hold post-professional doctoral degrees (PhD). All of the faculty teach as well as engage in clinical practice; and many serve professionally at the local, state, and national level. In addition, they are all active researchers publishing articles and presenting findings annually. The core faculty are supported by 10 to 12 adjunct faculty who teach different specialty components, such as wound care and acute care.

When asked about the strength of the program, interviewees believed the number one strength is its faculty. Dr. Cornwall asserted, "Clearly it's the faculty because of the nature of their tenure." Although a small faculty (8), four of them have been there for over eighteen years with the shortest tenure being four years. The lack of turnover has created a very stable environment. Dr. Cornwall believes the lack of turnover is directly related to how well everyone likes each other - "we like each other, we get along with each other," which translates into a highly effective teaching unit. The unity reinforces the student-focused educational philosophy. Dr. Cornwall stated, "We work to make sure the



students are getting what they need, and we talk about the students and how they are doing.”

Prof. Mueller had similar feelings; “I don’t know that you’ll find many [programs] where a substantial number of faculty have been all here for twenty years or more.” This stability brings a working collegiality that is translated into a strong academic program. Prof. Mueller believes, “We have stayed together because we’re all really passionate about what we do,” which translates into “a great sense of teamwork.” In talking with the NAU faculty, it is obvious they are extremely passionate about what they do but more importantly all believe in their educational philosophy. As a consequence, they have been able to develop a very integrative educational approach.

An additional attribute of the faculty is their commitment to maintaining a constant level of clinical practice. Prof. Mueller stated, “All of us are practicing clinicians, so not only do we stay current in research but we also stay clinically current.” The program does not have its own clinical practice, so faculty members has found different places to maintain their clinical skills. Prof. Mueller believes the students really value the fact that the faculty maintain clinical contact, it “gives credibility to what we do [teach].”

Ultimately, it appears that the faculty’s stability has lead to a solidified educational philosophy that results in strong academic success. In addition, each has committed to modeling professional values and clinical competency further demonstrating to the students their loyalty to the program.

## Research

The faculty are all engaged in research activities. The program has a Gait Research Laboratory that is equipped with a force plate and 3-D video analysis. The primary application of the equipment involves faculty who are interested in assessing foot and ankle dynamics relative to gait. In addition to the gait lab, other faculty members have research interests that span multiple topics including physical therapy education and neuroplasticity. Although the faculty understand the importance of contributing to the profession through research; their capabilities and resources are extremely limited. Prof. Mueller emphasized, "We are not bench (mark) researchers, we're a teaching institution," and therefore do not stress research as a high priority.

The limited nature of their research narrows the students overall exposure. Prof. Mueller states, "If a student really wants to get involved in the research process that is not what we do." The program does not require students to complete a research project as part of the curriculum nor has it the resources to offer research based financial assistance. Students are exposed to the research process and the importance of evidence-based practice through faculty lectures and classroom assignments.

## Facilities

The NAU Department of Physical Therapy is housed on the first floor of the Health Sciences Building. Both faculty members interviewed stressed that the building is overdue for renovations and that it should be happening soon. The first floor contains a staff office along with smaller faculty offices. The program has two large teaching classrooms, one is more lecture oriented while the other contains treatment tables for clinical demonstration and practice. The lecture-based classroom is equipped with various media that aid in the presentation of materials. A third room is used for both research purposes and clinical demonstrate and practice. The room contains all of the Gait Laboratory Research equipment as well as many of the different pieces of clinical equipment found in many physical therapy departments, such as hot pack units, walkers, and mat tables. In addition, the program also has a cadaver lab for their anatomy classes.

Overall, interviewees believe the facilities are adequate for their teaching purposes, however they would like to see renovations sooner rather than later. Dr. Cornwall stated, "The facilities overall are adequate. This end of campus is pretty old. The building was built in the 60s, it's got issues." The physical therapy building is not the only building that needs refurbishing; several of the buildings on campus are scheduled for renovation. Dr. Cornwall described multiple years of budget crunches that caused the educational system to put the building maintenance funds into other projects leading to the current state of decline.

In addition to the building maintenance requirements, the program facilities are located on an academic campus that is not affiliated with a medical school. Although such an affiliation is not necessary, faculty believe their research

productivity would be greatly enhanced if this link existed. Moreover, the lack of a medical school initially limited their access to library resources; however, with the expansion of the Internet, interlibrary loan, and e journals students and faculty have better access to many medical resources. Overall, the program feels comfortable in its current setting.

### Curriculum

The three-year curriculum exposes students to a basic science-oriented first year, which provides them with a theoretical foundation. As they progress into the second year, the curriculum shifts to a more clinical focus. During this year, clinical case studies require students to apply their knowledge and clinical skills toward solving complex patient problems. In third year, students must successfully finish three long-term clinical internships. Graduates must complete 111 credits that are divided into 42 the first year, 39 the second year, and 30 the final year.

Dr. Cornwall suggested that most programs offer similar curriculums but NAU does provide a slight variation. Their approach to physical therapy education is derived from four different practice patterns: musculoskeletal, neuromuscular, cardiopulmonary, and integumentary systems. Although these tracts are not unique, the department has integrated each of these areas throughout the curriculum to produce a more complete student.

Practical exams are used to assess a student's ability to demonstrate competence in his/her clinical skills prior to internships. Each DPT student must take a comprehensive exam demonstrating knowledge in all subject areas. Dr.

Cornwall refers to these as “Grand Practicals,” which prepare students to be able to assess and treat a variety of simple and complex patients.

Prof. Mueller also believes that one of the strengths of the program is its clinical education. Dr. Carter, the other academic coordinator of clinical education, and Prof. Mueller have worked very hard at finding quality educational sites for their students. She believes, “It’s not about numbers, its knowing that the ones (clinical sites) that we have are really good quality.” This is accomplished through good communication regarding educational philosophy. She thinks, “We need to make sure that we’re really at the table with each other in talking about where we see this profession going and what are the critical things our students need to do so that we can make clinical education more effective and timely.” There detailed approach to clinical education provides students with a very positive and effective clinical experience.

### Student Recruitment

I asked the interviewees what type of student they were looking for during the admissions process. Dr. Cornwall believed that prospective students need to be “good communicators who have a genuine interest and excitement about the profession.” He contended that it was difficult sometimes finding those students, “If I could figure out how to find those people in the interview process, then it would be a lot easier.” Based on the department’s leadership goals, I asked Prof. Mueller if they felt better about taking type A personalities. She stated, “Type A no, I think leaders can be leaders in many dimensions, I am looking for

somebody who really has the passion for being the best that they can be.” Both faculty members believed that recruiting the best students is a priority and recently altered their approach to student recruitment.

The program uses several different recruiting tools, such as the Internet and documented information. Dr. Cornwall remembers a time when recruitment was not really necessary, “fifteen years ago, the applicant pool was so strong that even students with a 3.0 were good, that has changed.” As a consequence, several years ago the program reopened admissions to out-of-state students.

Interviewees expressed the need to sell the program to applicants. Dr. Cornwall states, “We started using the weekend to really recruit, telling them what we had to offer, telling them what we can do, introducing them to faculty and buying them lunch.” Prof. Mueller agreed, “We’ve made a real change toward a recruitment based application process, we try and make it personal.” Their goal is to provide applicants with a better understanding of the program and its goals.

Interestingly, faculty members interviewed felt strongly that the Internet was important but not the way most students find out about the program. Prof. Mueller believes, “They have heard about us through our clinical sites and alumni, we have students all over.” A strong component of the program is its alumni base. These practicing clinicians through their clinical expertise provide a constant reinforcement of the quality of graduate from NAU. As a consequence, potential applicants working with graduates see the value of an NAU education. Beyond modeling, former students maintain a strong bond with the department through

an alumni organization that provides an annual continuing education weekend. Prof. Mueller discussed the organization, "We have a reunion education program once a year called "The High Altitude Lecture Series" where alumni gather for education and reunion events." The loyalty felt by alumni further influence potential applicants who may come in contact with these graduates.

Dr. Cornwall believes that NAU is really not in competition with the other program in Arizona citing their longer history and tradition. Instead, the top students are "lost to Northwestern, Duke, Washington University (St. Louis), and USC." He stated, "I've never heard anybody from Arizona going to another state school, they go to private schools." Prof. Mueller thinks most of their applicants come from the western United States. Overall, the program's history dominates in-state students perception but the program often battles with private institutions for out-of-state applicants.

#### Cost

The NAU Department of Physical Therapy is state-funded with an annual budget that supports faculty and department operations. Students accepted to the program pay \$200 to \$225 per credit hour. Tuition approaches \$2,500 per semester during the school year and \$1,600 to \$1,800 during each summer term. Therefore, an instate student will pay approximately \$22,000 in tuition at NAU. Out-of-state students, however must pay an additional fee per semester that brings their total tuition cost to \$45,000.

With the average cost of \$30,000 to \$40,000 (BAR, 2003) for state-supported physical therapy programs, NAU's cost makes it extremely competitive for residents of Arizona. Even out-of-state students pay less than if they attended most private institutions. When asking Prof. Mueller if she felt low tuition was an advantage, she was quick to point out that cost was not something they focused on, "I have heard students say that it is a big advantage, but there is a certain point at which it's like, 'is it really worth it'." Therefore, it is not something the faculty concerns themselves with because they believe strongly in the value of their product and don't wish to demean it by advertising cost advantages.

#### Unique Features

The first and most obvious unique feature about the NAU Physical Therapy Program is its faculty stability. Eighteen years of service demonstrate a commitment and unity that has fostered substantial program success. The small stable unit has produced a department that philosophically is in agreement with all aspects of their mission.

#### Environment

The NAU Department of Physical Therapy is located in Flagstaff, Arizona, a small town two hours north of Phoenix. The University is known as "the 'mountain campus' because of its 7,000-foot elevation and close proximity to the San Francisco Peaks." The campus location offers students a wide variety of outdoor activities, such as hiking, skiing, water sports, and cycling. Prof. Mueller agrees,



“It’s beautiful, the air is clean, it’s safe, it’s a great place to raise your kids.” There is, however, one limitation, the cost of living is very high. Interviewers agreed that they were unsure how students do it. The majority of the problem lie with housing; many of the apartments are extremely expensive and at the same time Prof. Mueller believes it’s very hard for students to find good paying jobs. The high cost of living not only impacts students but also makes it difficult for the program to attract new faculty.

Northern Arizona University is one of three state-funded institutions in Arizona. The other two campuses, Arizona State (the third largest campus in the country) and the University of Arizona are both much larger than NAU and, thus, place it third when it comes to funding. As a consequence, budget allocations are impacted, frequently limiting the ability of the program to update its facilities. In addition, it is interesting to note that the state medical school is housed in Tucson at the University of Arizona. This situation leaves the NAU Physical Therapy Program without any direct link to a medical campus, which is not essential for program success but having access to a medical library or hospital could provide the program with additional educational advantages. Primarily, the access to an academic hospital would enhance the faculty’s ability to conduct clinical research and acquire grants that would impact the infrastructure of the program.

From a professional standpoint, most of the state’s legislative activities occur in Phoenix, the largest city in the state. The faculty realized very early on that if they did not become involved in state governance that they could be quickly “isolated” within their own state let alone nationally. Dr. Cornwall stated, “One of

the struggles we have in Flagstaff is we're quite a ways away from most of the therapists in the state. It would be very easy for our program to become detached, so becoming active in associations is one way that we make sure we stay involved."

### Future Planning

Competitive advantage is often maintained over long periods of time because the organization regularly updates and changes its perspectives to be ahead of its competition. After leaving the NAU interview, I felt that one of the program's weaknesses was a lack of appreciation for change. It seemed that faculty were not as concerned about the future and how best to be ahead of the curve. Upon rereading the transcripts and assessing their information, I believe the contrary.

When asked directly about future planning, interviewees listed curricular changes as the number one priority. They agreed that some changes had been made prior to the DPT degree in 2001 but that those changes were minor, dealing primarily with clinical component of the program. Dr. Cornwall stated, "Our curriculum has essentially been the same for about ten years, not quite, but (about the same), so I thought it would be a good time." Prof. Mueller reiterated similar sentiments suggesting, "It's time to really do it (curriculum) again in a concentrated way and to look at our curriculum and retool it." With respect to their student-centered focus, it makes sense that the program would look to assessing and progressing their curriculum first.

In addition to the curriculum, Prof. Mueller discussed the importance of faculty teaching within a DPT program to have the clinical doctorate degree. She asserted, "Should we be getting a DPT also? Is that the ultimate modeling of commitment to the profession? Does that make those faculty more attractive?" Current faculty have master's degree in physical therapy with academic PhDs. She thinks acquiring the clinical doctorate is a personal choice not something the faculty is necessarily discussing but she believes it to be a legitimate future question for her program. This concept makes sense from the standpoint that the NAU educational philosophy hinges on professional modeling.

Beyond the curriculum and potential issue of acquiring DPT degrees, I found another area within the program that represents future planning. The core strength of the program is its stability, which produces a sense of strength and confidence that could be mistaken for over confidence in its ability to maintain its prestige and position. Instead, what stability here provides is an ongoing process of evaluation and assessment of their philosophy that leads to minor changes but in the end produces a strong progressive program. For example, early on the program identified the need to stay active within the state to avoid isolation, which also is congruent with its philosophy of leadership. Overtime, the program also developed a more dynamic integrative approach to the curriculum to enhance learning. The transition to the DPT also fostered an analysis of the clinical education component of the curriculum and the need for better, more consistent sites. At the same time, the faculty have altered the curriculum emphasizing professional responsibility. Prof. Mueller described the program and

faculty as “managing to be more proactive than reactive.” Overall, it appears that the program has been ahead of the curve with their implementation of ideas, which I believe can be directly attributed to their collegial stability.

Interviewees discussed the ways in which they want to upgrade the facilities and make changes to the overall building, but that is difficult to control. In the end, their future planning primarily deals with what they can control.

### Summary

It is obvious when talking with faculty and evaluating the NAU program that they are a student focused, leadership oriented program. Their goal is to produce competent practitioners who will also choose to be leaders within the profession. What is even more obvious is the belief and dedication the faculty have to making their goals a reality.

## CHAPTER 6

### THE UNIVERSITY OF MIAMI

The University of Miami (UM) is a research extensive institution located in Coral Gables, Florida several miles outside of downtown Miami. The Department of Physical Therapy is a subdivision of the Leonard M. Miller School of Medicine and is situated in an office building adjacent to the main campus. Like many institutions that offer healthcare education, the University of Miami has a separate Health Science campus located next to Jackson Memorial Hospital in the center of the city. Although the Medical School and other healthcare departments are located downtown, the Physical Therapy Department's has remained a part of the main campus.

The program admits 45 to 60 students each May for a three-year program that culminates in a clinical Doctorate in Physical Therapy (DPT). In addition to the DPT degree, the department has a PhD program in physical therapy that focuses on transitioning clinical therapists into academic faculty. As of September of 2004, US News and World Report ranked the Department of Miami number ten out of 209 physical therapy programs in the US (*Physical Therapy Program Rankings, 2004*). The following faculty members, Dr. Sherril Hayes and Dr. Carol Davis, were interviewed for this study.

The Miami Department of Physical Therapy was originally founded within the School of Education in 1979, which suggests one possible reason for its location on the main campus. The program has seen quite a few changes since its inception, including several movements within the academic hierarchy. Initially, graduates were awarded a bachelor's degree but by 1986 the program instituted the Masters of Science (MSPT) following a trend within physical therapy education. During this time period, the program was also relocated to the School of Medicine becoming a Division within the Department of Orthopedics. With this transition to the master's degree, the program adopted a student research focus as part of its educational philosophy. Dr. Steven Rose, who was appointed Associate Director of Research in 1988, was credited with developing the program's student-faculty research paradigm. Overall, the faculty have remained committed to this endeavor striving for "excellence in education and research."

With a more prominent emphasis on research, the faculty also began designing a PhD program in physical therapy that would create "movement scientists" capable of producing the next generation of therapists. The culmination of their efforts occurred in 1995 with the implementation of a PhD degree in Physical Therapy. Meanwhile, the advancement to the entry-level DPT had begun at other universities and as a result the faculty, while "very satisfied with its Masters and PhD program structure," began evaluating the implications for further change. A five-year evaluative process culminated with a transition from the MSPT to the entry-level DPT in 2001. Most recently, the program's

stability, productivity, and excellence were rewarded with an evolution to Departmental status within the School of Medicine.

### Departmental Structure

The Miami Department of Physical Therapy now offers two different degrees, the entry-level Doctorate of Physical Therapy (DPT) and a Doctor of Philosophy (PhD) in Physical Therapy. The DPT program is a three-year program encompassing 109 didactic coursework hours and 32 weeks of clinical internships. The goal of the program is to prepare students who are “capable of providing excellent physical therapy care.” In contrast, the PhD program is an academic degree striving to produce teachers and researchers. Dr. Davis described the processes as “a socialization of clinical specialists into academia, prepared to take on the responsibilities found within higher education.” The PhD curriculum includes four distinct areas: teaching, research, movement science, and a core area specific to the individual. Combined, these two-degree programs enroll approximately 70 students annually.

### Mission

Similar to other physical therapy departments, the University of Miami has a global mission encompassing a variety of program objectives with a separate statement that defines more specific goals for the DPT program. An evaluation of these two mission statements reveals three overlapping themes: education, research, and service that shape the program’s purpose.

The Miami Department of Physical Therapy's documented mission is "to provide excellence in physical therapist education, to expand evidence-based practice of physical therapy through research, to provide high quality care to all who need it, and to be a community partner," outlining faculty oriented objectives in the areas of education, research, and service. The DPT mission statement is "to produce a highly competent generalist practitioner at the doctoral level who is capable of incorporating the patient/client management model, is competent in the interpretation and implementation of research leading to evidence-based practice, is capable of providing high quality care to all who need it, and is a participant and leader in community service activities," defining student outcomes that center on quality healthcare, valuing research, and providing community service. Together, these statements suggest a strong link between faculty and student outcomes. This premise is substantiated by the faculty who emphasized that program success is often measured by student achievement. Dr. Hayes stated, "We decided (back in the late 80s) that we wanted to be known for our research effort and for excellence in education from both our faculty as well as our students." Dr. Davis added, "We believe that the future of the profession counts on our being able to graduate people who are able to perform at a level of excellence that we set and that they (the students) need to be well-rounded."

As a consequence, the program strongly emphasizes producing quality healthcare practitioners capable of providing care in any environment. Dr. Hayes stated, "Our mission is to prepare clinical therapists who are excellent as generalist practitioners." Dr. Davis reiterated, "At the minimum, we educate very



well-prepared clinicians to go out and treat patients.” The faculty have been able to achieve this success through their constant efforts to provide the most comprehensive and contemporary education possible. Dr. Davis noted, “We have a faculty who are up-to-date in the literature and are willing to challenge each other on ideas,” enabling them to maintain a high level of education.

The program also believes physical therapy graduate level education encompasses an active participation in clinical research. The faculty want each of their graduates to be able to “contribute to the body of knowledge in research.” As a result, DPT students participate in faculty driven research projects during the course of their studies. Dr. Hayes stated, “The faculty are committed to research, not only for themselves but also for the student.” Therefore, the program’s achievement is measured by its ability to produce “clinical scientists” prepared to investigate findings and provide care that is supported by evidence.

The third component of the mission deals with service, which can be defined many different ways. For the Miami Physical Therapy Department, the emphasis is placed on professional service. The faculty attempt to foster a professional obligation within each student that will translate into future leadership roles. Dr. Davis suggested, “The bottom line is (we) want to graduate physical therapists who are involved and committed to the profession.” She went on to discuss how the program wants its graduates to look to the future with an emphasis on “furthering the profession.” As proof of this component of the mission in action, she believes a “majority of graduates are involved in the community.”

The Department values “excellence” in education, research, and professional service for both the faculty and the DPT student. While the faculty are recognized nationally for their involvement in research and professional service, their measure of success is also strongly defined by their student’s performance.

### Educational Philosophy

To produce a research savvy, generalist practitioner, the department has focused on developing a ‘program sequence’ that will foster academic and professional growth. When Dr. Davis was asked about creating Miami graduates, she said that it was not any one thing but rather how “we sequence the program,” which includes basic and applied science and evaluation and examination skills, as well as focusing on the art of communication. The faculty believe they have created a system that fosters the development of highly skilled therapists. The program sequence concludes with internships that allow students to practice and develop their clinical skills. Overall, Dr. Hayes believes the program is “strong in all areas” and “provides an education beyond entry level in all of the major practice areas.”

Beyond the basic and applied sciences, the program also has developed an emphasis on “humanistic communication” that they believe to be an essential educational component. Dr. Davis emphasized that developing the student’s humanistic side is very important. As a consequence, effective communication is emphasized throughout the curriculum. Overall, the Department philosophy states, “There is an integration and expansion of knowledge in the sciences, the

humanities, and applied science,” suggesting a conscious effort to provide a well-rounded education.

In addition to the basic curricular sequence, the Department has developed a specific approach to student research that emphasizes student participation instead of just exposing them to the process. Philosophically, the faculty believe graduate students should be involved in organizing and conducting clinical research. The faculty believe this process will prepare students to assume the future responsibility of developing new clinical evidence.

### Faculty

The centerpiece of the Miami program is its faculty. The department has sixteen full-time faculty, fourteen of whom possess post-professional doctoral degrees. In addition, the program has five part-time faculty and an extensive administrative staff. Six of the faculty are certified clinical specialists, eleven are engaged in clinical practice, and two are Catherine Worthingham Fellows. When asked to discuss the strengths of the Miami program, interviewees contended that the faculty are the primary reason for its success. Dr. Hayes stated, “I think it’s the faculty and who they are and the fact that they all have this value of really wanting to be good teachers and also possess an understanding and valuing of clinical research.”

The number of faculty allows the program to cover a wide range of topics and investigate various types of research questions. The variability, however, is not what makes them strong but rather their unified spirit toward presenting the best

possible education. Dr. Davis describes this as “a loyalty to what I would call a consistent description of excellence and how to achieve it.” Part of this pursuit of excellence is a result of a stable core of teachers who have evolved together within the program. Dr. Hayes suggests, “I have people with me, 15 or more years, who have been together a very long time and I think that we actually genuinely enjoy working with each other. We have fun together.” Dr. Davis describes it “as a true sense of ‘collegiality’, that doesn’t mean we don’t disagree with one another but in the end all things return to an attempt to be most excellent.” As a whole the Miami faculty seem to enjoy their jobs, the environment, and the educational challenge to mentor the next generation of physical therapists.

### Research

The Miami Department of Physical Therapy is involved in multiple research endeavors. Their investigation ranges from epidemiological studies to studies searching for a cure for spinal cord injury. A majority of their research efforts take place at the Miami Center for Spinal Cord Research. In the near future, the program will acquire space within the new Clinical Research Building on the Medical Campus where the program plans to open a Functional Assessment and Comprehensive Testing Center, which will enable physical therapists to provide functional measurement testing for all types of patients.

In addition to the faculty, students are required to complete a research project. Small groups of two or three students work together to complete faculty-

assisted projects during the course of the curriculum. These research projects are presented in a culminating exercise prior to graduation. The department's documents suggest that "well-prepared clinical researchers can significantly add to the body of knowledge within the profession." To this end, Dr. Hayes thinks this process allows students to gain valuable insight into the importance of clinical research while having the opportunity for mentorship with faculty. In addition, Dr. Davis feels, "We've got to break down the intimidation that students feel and help them do research and present research so that it's no longer some idea out there that's not accomplishable." The overall purpose is to provide students with the tools necessary to perform effective clinical research.

#### Facilities

The Department of Physical Therapy is located on the top three floors of an office style building. The third floor contains 10,000 sq. ft. of classroom space, which is subdivided into three separate classrooms named: the "Blue Room," the "Green Room," and the "Airplane Room." The Blue and Green rooms are lecture and laboratory classrooms that have two-person desks that can be converted to treatment tables. Each room can accommodate 60 students. The Airplane room is primarily used for lecture but can also be turned into open lab space. Each of these rooms contains fold-down mat tables, computerized projection systems, VCR's, TV's, slide projectors, and other assorted equipment. In addition to the classrooms, the third floor also has a kitchen, quiet study room, and library available during scheduled daytime and evening hours.

The fourth floor houses the 5,000 square foot Steven J. Rose Center for Clinical Research containing multiple research labs including the Linda D. Crane Cardiopulmonary Research Laboratory. Faculty/student research activities are conducted in this Center as well as at the downtown medical center.

The 10,000 square foot fifth floor is home to the faculty and staff. All of the faculty offices are found on this floor. In addition, the office of student services is located on the fifth floor. It handles all services from processing of applications, to admissions, enrollment, and alumni communications. The floor also has one large conference room and small alcoves that allow for student-faculty meetings.

Currently, all department activities, with the exception of gross anatomy courses which are held at the Medical School, are conducted within these three floors. Overall, the physical therapy program has sufficient space to provide an effective educational environment for its students. The proximity of the classrooms and offices provides a feeling of unity and togetherness.

### Curriculum

As outlined in the educational philosophy, the Miami curriculum focuses on a “sequenced approach” to student education. The faculty have developed a curriculum that evolves over each semester moving from an early scientific focus to a more clinically applicable concentration in the second year. Along the way considerable attention is paid to developing the aspects of communication and compassion within each student. Students take 37 credits in the first year, 35 credits in the second year, and 33 credits in the final year.

In addition to the didactic portion of the curriculum, the program has 32 weeks of clinical internship that prepares the student for practice. Students perform one mid-curricular experience that engrains the initial components of the curriculum, which is followed by three long-term internships at the end. Overall, the program provides a dynamic educational process.

### Student Recruitment

With student achievement as a central theme for the program, I asked the interviewees about the importance of recruiting strong students to the program. Dr. Hayes commented that the students are a real strength of the program. She talked at length about the importance of establishing criteria for admission that are compatible with the mission of the program. She stated, "If the faculty are going to be teaching an intense broad spectrum curriculum that produced excellent clinical therapists, then the students need to be able to respond to this level of education." Therefore, even in times of crisis, when applicant numbers were down, the program continued to strive toward strong academically prepared students.

In return, the program has benefited from an extremely devoted alumni base that provides a working example of the quality of education. Dr. Davis believes that maintaining a high quality of student perpetuates the program's reputation, which in turn generates many different employment opportunities for graduates.

Attracting quality students often requires several different approaches, but Dr. Hayes, most importantly, believes "it is 'vital' to have a well-designed webpage;

today's 'Millennium Child' finds out everything through the web." As a consequence, the program has recently altered their Internet site to make it more exciting by adding videos, photos, and information all geared to giving the potential applicant a strong sense of the atmosphere at UM.

Besides the web page, the program provides written information to all potential applicants as well as a CD Rom video that gives an applicant to see a detailed look at life in and around the Miami campus. Dr. Hayes notes, "I think the CD Rom is very exciting, but now that is old technology, it should be a DVD." Overall, she expressed a desire to continue to enhance both the CD Rom and web page in an effort to make it more appealing to applicants.

As with many of the top programs, The University of Miami has multiple criteria that it uses to evaluate potential applicants for the program. Dr. Davis stressed that critical to the selection process is interviewing each candidate during the admission process. She stated, "We did a year without interviews and then we brought the interview back, we want to 'connect' with these folks." The program documents emphasize a search for "students who demonstrate 'intellectual and interpersonal' abilities." The interview process is vital in identifying candidates who will not only be great clinicians but also great leaders.

When asked to describe their competitors, interviewees identified the major private schools, such as USC, Duke, Washington University (St. Louis), and Columbia, as their biggest rivals. Throughout Miami's history, it has had little competition from state institutions. Although there are a large number of programs within the state, the department has always been ahead of the curve



when it comes to transitioning to a higher degree, thus maintaining a competitive edge. Dr. Hayes does admit that it could change within the next few years because of the addition of several new DPT programs housed on public institutions. She states, "Now it will be interesting this year because the University of Florida and University of South Florida have DPT programs that are starting their first year." Overall, Dr. Davis believes, regardless of the degree, that Miami is "significantly different" when compared to their in-state rivals and thus not in competition with other Florida schools.

#### Cost

The Physical Therapy Department is 100% tuition driven, requiring students to pay for the cost to run the department. Dr. Hayes noted that her budget "pays for everything down to the last paper clip." Prior to 1997, student tuition was based upon a cost-per-credit hour. As the price continued to rise, Dr. Hayes felt that competitively she needed to try and provide the students with a tuition that was financially practical. In 1997, the department instituted a block tuition rate of \$8,000 per semester, which translates to approximately \$65,000 for the three-year program. Dr. Hayes admits even with block tuition, her costs do not allow her to "compete with public programs financially, but nobody (private) can." She is confident that her block tuition makes the program extremely competitive with many of the premiere private institutions across the country.

More important to Dr. Hayes is an understanding of the 'value' of an education in relation to cost. She has done a great deal of research, analyzing

primarily physician education, on cost-benefit ratios and their relationship to higher education. She contends that findings suggest, "Anything that's much over 1.0-1.3, where the education costs more than what your earning potential is, is a very unwise move." Thus, by blocking the tuition at \$65,000, Dr. Hayes has created a cost-benefit ratio of 1.0 for her students (average starting salary for new graduates is \$55 to \$65,000), which she believes to be a big advantage over some of the other higher priced programs.

Even with block tuition faculty interviewed suggest that students choose to go to other schools because of cost. Dr. Davis believes that the higher tuition is a "good weeder out." She suggests, "I think the people who really want to be with us and want a Grade "A" education, they are willing to pay for it." She believes the value of the education far out weighs the cost.

#### Unique Feature

The Miami physical therapy program has developed a detailed approach to student education in the areas of professional commitment and socialization. Throughout the curriculum, students organize and run several different types of community services. These activities attempt to foster a strong professional obligation within each student. Examples of these activities include "the Marquette Challenge (students raising money for the Foundation of Physical Therapy), the Wheelchair Challenge (students raising money and awareness regarding individuals with disabilities), and the Recreation for the Disabled course (sailing course for able-bodied and disabled persons)." Dr. Davis stated,

“We want to graduate students who are socially involved, involved in their communities.”

Beyond the social aspects of being a physical therapist, Miami attempts to develop a “strong commitment to the profession. “ This is partially addressed by “providing all of our students with membership in the American Physical Therapy Association and by encouraging students to attend APTA’s Combined Sections Meeting, Annual Conference, and Student Conclave.” More importantly, Dr. Davis believes professional obligation is passed on to students through “the modeling done by the faculty.” She suggests that the faculty’s commitment to an active involvement at the state and national levels of the APTA serve to reinforce the value of professional involvement. Further, the program supports student involvement through financial contributions whenever possible. Dr. Davis stated, “The program is as generous as it can be with funds to support students for exposure to national activities, providing money for travel.” The combination of these experiences provides for a powerful approach to the value professional obligation.

In addition to professional commitment, the Miami Physical Therapy Department also has a unique faculty history that helps to explain its strong understanding of its core values. Most of the faculty have been teaching in the program for more than 15 years; and, in addition, many of these same faculty obtained their PhDs while working in the program. Dr. Hayes talked at length about a 5 to 7 year overlapping period in which multiple faculty members received their advance degrees. This situation could have created a very chaotic

environment but, instead, brought the faculty together. Dr. Hayes describes those times “as a unifying experience” where people provided “very strong support for each other.” Ultimately, it was, “a shared experience and it was all because we wanted everybody to rise up a level and to achieve more.” This shared common experience helped to create an environment of mutual respect and friendship, which has continued to grow throughout the years.

### Environment

The Miami Department of Physical Therapy is located in “beautiful Coral Gables.” Dr. Hayes and Dr. Davis both believe that their location is a significant advantage when it comes to recruiting students. The sunny year-round climate is very attractive to many students, as well as the close proximity to sandy beaches and excellent nightlife. In addition to the obvious climate advantages, the Miami-area provides fairly affordable housing, a reasonable cost of living, and opportunities for employment for students. Dr. Hayes contends, “Miami provides students with opportunities not readily available to those in the Midwest.”

While location within Miami is a positive, the Department’s location away from the Medical School can be a negative for the program. Dr. Hayes does not believe it impacts recruitment but overall limits some of the faculty’s ability to do clinical research and be involved with the Medical School. Although travel to and from the medical center is not difficult, being located on the Medical campus would open up more opportunities for the program.

The educational environment consists of large classes (45-60) that could result in student isolation but Dr. Hayes believes that the general comradrory within the faculty promotes a positive and supportive environment for the students. In addition, she admires the dedication of her faculty and their desire to educate students beyond the walls of the classroom. For example, "faculty genuinely want to be with the students, take them to conferences, and take them to speeches." Furthermore, she feels the faculty's commitment results in an environment promoting a "sense of family" that "brings with it a very strong bond between faculty and students."

The faculty are supported in this effort through strong leadership from their chair. Dr. Davis was quick to point out that a lot of the credit for the steady advancement of the program needs to be given to Dr. Hayes. She states, "The chair has a unique feel for administration, a vision that sees the combined vision of the faculty, but is out on the leading edge of it, and sees how everything kind of fits together." Dr. Davis believes that the leadership environment has enabled the program to continue to be highly successful.

### Future Planning

In discussing the future of the Miami program, several different areas surfaced. Faculty agreed that strategic planning on an annual basis is essential to the ongoing success of the program. Dr. Hayes provided a detailed example of how she and the faculty overcame the loss of student tuition due to declining enrollment but maintained their growth and success. In addition to financial

planning, organizing retreats provide an avenue for curriculum revision, student assessment, and future expansion.

Dr. Hayes discussed the need to add several new faculty members. She implied that it is time to attract new faculty members who can continue the current pursuit of academic excellence. In addition, the recent change to Department status provides the program with new respect and autonomy within the Medical School. Furthering that vision, the Department has developed a Functional Assessment and Comprehensive Testing Center for the hospital. This center will provide functional testing for every type of patient admitted to the hospital. Dr. Hayes sees this as an opportunity to teach other healthcare disciplines how indispensable physical therapy really is as well as enlighten the medical community on the value of functional testing. This program also supports the approach to evidence-based practice and the vision of the future set by the APTA.

Dr. Davis focused her thoughts on changes within the curriculum. She believes that the future will require physical therapists to expand their horizons with regard to the types of intervention employed. Specifically, she wants to increase curricular focus on a holistic approach to patient care that can be supported by evidence. In addition, she believes that emphasis needs to be placed on preparing students to be the initial providers of care without a need for physician referral.

## Summary

The Miami Department of Physical Therapy is centered on the core values of education, research, and professional service. The collegial nature of the faculty and their strong commitment to these values produces students ready to accept the healthcare responsibilities of the future. The program's faculty also believe that graduate level work should include the fundamental aspects of performing research. Ultimately, the program's success is defined by its ability to remain focused on its mission.

## CHAPTER 7

### CREIGHTON UNIVERSITY

Creighton is a Jesuit, Catholic University located in Omaha, Nebraska. This private, Master's College and University I institution contains a central educational purpose that advocates a "value-centered approach focusing on ethical leadership and service." As a consequence, the university and healthcare programs concentrate on curricular development and service activities more than research. As their brochure indicates, "Creighton is a progressive institution with a national reputation for leading-edge curricula and educational development."

Overall, the university provides a home for over 6,200 students in multiple disciplines all situated on one 92.4-acre campus. The Physical Therapy department resides within the School of Pharmacy and Health Professions along with the Department of Occupational Therapy and the School of Pharmacy. The department admits 40 to 45 students annually to an entry-level doctorate in physical therapy (DPT). In addition to the DPT, the department also offers a web-based transitional DPT degree for practicing therapists. As of September 2004, US News and World Report ranks Creighton tied for eighth out of 209 physical therapy education programs (*Physical Therapy Program Rankings, 2004*). The following faculty, Dr. Robert Sandstrom and Dr. Gail Jensen, were interviewed for this study.



The Creighton Physical Therapy Department can be considered a young program since it has only graduated students since 1996. However, it was the first program to offer the DPT degree, “setting the standard for others to follow” and thus is the oldest DPT program in the United States (US). Multiple documents, collected from the site, reveal a program and university that is very proud of this legacy and their leadership in “innovative curricular and educational development.”

### Departmental Structure

The Creighton Department of Physical Therapy offers two distinct degree programs. The main program is the entry-level DPT, which begins each August and continues for eight semesters encompassing a three-year period. Each student is required to complete 133 credits, eighty-six of which are didactic coursework while the other forty-seven credits entail supervised clinical internships in different healthcare environments.

The department also offers a distance-based transitional doctoral program for licensed therapists. The curriculum format is designed to afford working physical therapists an opportunity to advance their degrees and “improve their professional practice” through distance learning. Students take web-based, CD-ROM, and three-day seminar courses providing them with the necessary credits to achieve a DPT degree.

## Mission

The department has several statements, on its webpage and in brochures, outlining expectations for students. For example, the webpage states, “Our purpose in health profession education is to prepare a graduate who can be responsive to the increasing diversity of the population, needs of individuals and communities, and meet the challenges of caring for people in a dynamic health care system.” Program brochures detail more specific DPT outcomes. “The program is designed to provide students with the skills and abilities to prevent disablement and promote wellness, provide primary physical therapy care in all healthcare settings, and advance the profession of physical therapy.” Although these statements describe specific goals for student outcomes, there is a more centralized theme that appears in both documented materials and faculty interviews, which is summarized as “a deep commitment to patient care,” meaning students are expected to develop clinical knowledge as well as social responsibilities. As Dr. Gail Jensen stated, “We are here to prepare professionals to have the ability to change practice through moral values and excellence in education.”

Dr. Jensen alluded to the fact that the physical therapy program’s mission is “tightly integrated with the mission of the institution.” Creighton University’s mission focuses on the development of an individual’s values:

“Cura Personalis – personal concern for the individual  
Magis – striving toward excellence, seeking the greater good  
Women and men for and with others (promoting justice, serving communities)  
Contemplation-in-action (mindfulness, critical self-reflection, and ethical decision making)”

Similarly, Dr. Jensen affirmed the physical therapy program's mission is to prepare professionals who "have the ability to change practice through values." She believes that the Jesuit ideals of "social justice, moral agency, community service, and public good" are the foundation for developing "professional values" that translate into a practitioner who is dedicated to patient care and the profession.

Her sentiments are supported by the department's literature, which also underscores a commitment to professional and personal standards. It proposes that all students take the physical therapy pledge at the beginning of the program to develop "a sense of community where faculty and students are alike holding each individual to the highest standards of professional conduct." Taking the oath illustrates an emphasis on practitioner development through social interactions.

In addition to ethical values, the program's mission also focuses on a devotion to educational leadership. The department's literature states, "Our [educational] standards are high but also consistent with our approach." Originally, the program developed the DPT because it "recognized that a higher educational standard was needed"; today, the mission still reflects this philosophy of advancing educational expectations. Dr. Sandstrom stated, "Our mission is first and foremost to be leaders in education for doctorally prepared therapists." Dr. Jensen agreed suggesting that "excellence in education" was as important as professionalism. The Creighton program is committed to providing a value based education that "continues to be a leading presence" for the future.

## Educational Philosophy

Designing the first entry-level doctorate program required more than a basic curriculum, it meant identifying an educational philosophy that supports the advancing level of physical therapy education. As a consequence, Creighton identified a conceptual model of professional education created by Joan Stark. From her work, the faculty adopted “professional identity” as the focal point of their program of study with four defining components: adaptive competence, clinical reasoning, technical skill, and knowledge. Dr. Jensen suggested that it was the faculty’s responsibility to create an educational environment that promoted these four areas.

As a result, the program has developed a curriculum that offers a strong foundation in the basic sciences, which is followed by more advanced activities of clinical reasoning, skill application, and adaptation across varying degrees of difficulty. Dr. Jensen reiterated that “beyond the foundational curriculum, the program philosophy is really about the people (students),” developing a “value-centered” approach to healthcare. This methodology she feels is directly related to “who you bring on as role models” and therefore believes faculty are a critical element to the success of the mission.

Dr. Sandstrom approached the discussion of educational philosophy from a different perspective. Considering the mission of educational leadership, Dr Sandstrom believes that the Creighton approach is about “providing the best possible experience for everybody each and everyday.” This includes classroom, clinical, and research experiences. To achieve this goal, Dr Sandstrom deems it

critical to have excellent students, well-qualified faculty, proper facilities, and great organizational leadership. He suggests that all of these aspects influence the curriculum affecting the educational outcomes of the program. As a consequence, the program must attend to and regularly evaluate all four of these areas in order to provide an “excellent education.” These varying perspectives appear to mirror the two different aspects of the program’s mission; educational and professional commitment.

### Faculty

The Physical Therapy Department has 18 fulltime faculty. Six of these faculty have PhDs and six have clinical doctorates. In addition, five members are recognized as clinical specialists. The faculty have an average of 15 years of clinical experience and eight years of teaching experience. Dr. Sandstrom believes that the current faculty provide enough depth and expertise to cover all areas of the curriculum. He stated, “We have no faculty openings right now, which means as a core faculty, we teach a majority of the course work within the curriculum.” He views this as a real strength because as a faculty, the department can effectively evaluate, alter, and create variations to the curriculum without having to consult with anyone outside of the current staff. He states, “To make ideological changes, you really need to have all of the people (faculty) at the table.”

Dr. Sandstrom and Dr Jensen pointed out that faculty diversity is an important issue for the program. Dr Sandstrom suggested that the program has faculty with

25 years of experience as well as junior faculty members who are relatively new to academia. This diversity combines senior educational experience with contemporary clinical knowledge, which Dr. Sandstrom believes, “strengthens the overall depth and breadth of the curriculum.” In addition, he also maintains this type of diversity breed’s mentorship fortifying faculty bonding and improving educational outcomes.

### Research

The department believes that faculty, as well as students, need to be involved in research activity. Dr. Jensen specified, however, that not all faculty need to be performing funded research but that all members should be “engaged in scholarship on some level.” Based upon printed documents, the program performs a majority of its clinical research within the Biodynamics Research Laboratory whose mission is to “investigate the effects of therapeutic interventions on movement dysfunction with a primary focus on the adult population.” Outside of the research mission, the goal of the laboratory is two fold: first, to provide students with learning opportunities related to the field of pathokinesiology and second, to provide community members with a clinical environment where movement evaluation can be performed. The lab has a 30m walkway, motion analysis, computer workstations, body weight support (BWS) machine, treadmill, multi-channel EMG, and other gait equipment. The faculty have several different ongoing projects focusing on understanding the gait

mechanics associated with BWS on normal individuals and those people suffering from Parkinson's Disease.

Students enrolled in the DPT program are required to complete a scholarly project prior to graduation. This project can be framed within three different categories: research-based, case-based, or evidence-based. Research-based projects involve assisting faculty with ongoing investigations while case-based activities require students to evaluate and present an in depth analysis of an individual patient case. The evidence-based scholarly project involves an analysis of the literature in an attempt to answer questions related to physical therapy evaluation and intervention. Dr Jensen stated that the format prevents students from having to develop a true research question that is then supported by the faculty. Past experiences with student-driven research has resulted in an excessive burden for the staff and poor productivity.

Dr. Sandstrom considers research productivity to be a current area of emphasis for the program. He and Dr. Jensen believe that the faculty are producing solid results but "we need to have more." Overall, he thinks that the program needs to establish better research productivity to satisfy accreditation requirements. "This is something new for us."

To aid in this endeavor, Dr. Sandstrom has implemented a strategy that directs faculty toward developing a "scholarly agenda" in an attempt to focus their research efforts. Specifically, the department has identified four major areas of research interest: service learning, biodynamics, teaching and learning, and health services. The goal of the strategy is for faculty to involve themselves in at

least one of these areas enabling them to combine their research efforts with other faculty. Dr. Sandstrom believes this will enhance scholarly activity and lead to more internal and external funding. Several of these areas already have faculty who are externally funded, which should decrease the demands for junior faculty to find financial support. Overall, he views this approach as a way of creating a portfolio; "it's not your entire research agenda, but it clearly provides a home (base)." The goal is to enable each faculty member the ability to produce effective scholarly outcomes while maintaining their teaching requirements.

### Facilities

As Dr. Sandstrom suggested, "facilities are very important to the success of any program." As such, he believes Creighton has "very good" space but comparatively, it is "smaller than some and bigger than others." The physical therapy department is housed on the first floor of the Boyne School of Dental Science, which it shares with occupational therapy and pharmacy. The building's interior is white with tile floor providing a very institutional feel. The building is adjacent to the Health Sciences Library and the Creighton Medical Center offering faculty and students easy access to research materials and creating a clinical atmosphere.

Architecturally, the first floor is square shaped with a central hallway that runs around the square separating the floor into an inner and outer box with rooms on both sides. There are three large lecture-based classrooms that are shared between the disciplines located on one side of the inner square. Each of these



rooms offers the latest multimedia equipment and provides a very comfortable environment for learning.

The physical therapy department has two dedicated laboratory rooms for educating students in a more hands-on environment. The larger of the two rooms has recently been upgraded with the addition of several different multimedia items including suspended televisions to enhance learning. This room also contains an abundance of orthopedic and neurologically based equipment and provides students with an effective learning area. The second of these laboratory spaces is a small converted clinic with individual treatment tables for clinical skills training but contains no multimedia equipment.

The Biodynamics Research Laboratory is also located on the inner square. This is a large room with multiple pieces of exercise and therapeutic equipment and a large amount of unused space available for further development. Adjacent to the research laboratory are the faculty offices with approximately six to eight rooms located on two separate small hallways. Each hallway is enclosed within the central portion of the building offering no natural light and an uninviting feel. In contrast, the director's office is a shared space with pharmacy and occupational therapy on the outer square with multiple windows and a much brighter appearance.

The physical therapy department has access to a shared cadaver laboratory that enables groups of five students to share one cadaver. Other amenities include a vast number of student lockers located throughout the hallways and a cafeteria assessable to faculty and students. The architectural design, color, and

location create a hospital type feeling. The dental clinic on the second floor further contributes to the healthcare atmosphere as patients are paged over the intercom that is broadcasted through the first floor corridors.

### Curriculum

Creighton has implemented what Dr. Jensen describes as “a very traditional curriculum” with a first year dominated by foundational sciences and a second year that is divided into three primary clinical tracks: musculoskeletal, neuromuscular, and cardiovascular. These tracks seek to combine knowledge, clinical decision-making, and professional issues into a complete learning experience. DPT students take 34 credits their first year, 50 credits in the second year, and 50 credits in the third year for a total of 134. Clinical internships are distributed throughout the curriculum providing students with an opportunity to apply classroom knowledge in medical settings. The program requires each student to complete 46 weeks of internships, which Creighton believes to be “significantly greater than many of the other programs.”

Printed documents describe the curriculum as “cutting edge” and “comprehensive” relative to the school’s innovative history, but Dr. Sandstrom describes curricular success as the ability of the faculty “to come together around the curriculum” to deliver the best possible education. Although he and Dr. Jensen believe the education at Creighton to be strong, refining and improving it on a regular basis is very important. Dr. Sandstrom has recently implemented a new “systematic way” providing the program with a stronger, more advanced

curriculum. He suggests that recent deficiencies in licensure performance have pushed the program to “get off the dime” and critically assess curricular content.

### Student Recruitment

One of the most important ingredients to Creighton’s success has been attracting quality students. Dr. Sandstrom strongly affirmed that successful implementation of their educational philosophy requires “the best students we can possibly recruit.” He suggests, like many others, that student quality is in part measured by their academic record. However, Dr Sandstrom also believes that it is important for students to have several important personal characteristics. Specifically, he believes applicants need to demonstrate a “sense of purpose” in pursuing a physical therapy degree and that each student knows “he/she will be fulfilled in life” with this career path. The Creighton faculty understand the sacrifice required to become a physical therapist and thus are looking for students willing to make a lifetime commitment.

In addition to this self-awareness of purpose, Dr. Sandstrom suggests potential students must also demonstrate a commitment to service. The mission of the department and university reflect a strong obligation to personal service and community. As such, Dr Sandstrom thinks it is important for students to demonstrate some capacity for helping others and appreciate the value in doing so. Dr. Jensen agreed that the search for these characteristics is essential to student and program success. As a consequence, she believes that the interview process is invaluable. She stated, “Our process [application] is a paper process

and then an interview process but we put a lot of weight into the interview.” The interview provides her with the ability to determine whether or not an applicant has the ability to self-reflect. She suggests that self-reflection is “the absolute fundamental characteristic that we’re looking for” in applicants. Self-knowledge and self-assessment allows the student to develop a deeper appreciation for themselves and others, which supports the mission of the program and institution.

While the interview is an opportunity for the program to evaluate students, it is also enables the program to provide applicants with more information. Dr. Sandstrom stated, “We need to try and give the student as much information about the program so they can make an informed decision.” He feels it is important for students to “understand what they are getting into.” Dr. Jensen reiterated that the interview process is also a time “to market the program.” As a consequence the department uses the interview time to provide students with as much information about the program as possible.

In addition to the interview day, the program gives students a professionally designed brochure with multiple inserts and flaps that contain many different student and faculty comments about the program. Its appearance and content provide the student with an in depth feel about the program’s mission and student expectations. Dr. Jensen thinks there is a sort of symbiotic selection between the program and the student. She suggests that “students really identify with the Creighton mission.” Potential applicants and enrollees come from as many as twenty different states suggesting the mission appeals to a broad group.

As a consequence, Dr. Sandstrom believes “the gateway to the program” is through the internet. He stated, “It’s the front page for many students who are trying to find out more about our program and mission.” He admits that it needs updating and constant attention. Dr. Jensen agreed that the webpage “needs to be more contemporary,” describing what Creighton faculty are doing.

Alumni are often a source of recruitment for many physical therapy programs across the country. Interestingly, Dr. Sandstrom believes this to still be a weakness of the program when compared to other private institutions, such as USC and Northwestern. The weakness is not in the quality of the alumni but rather the number. Having only graduated 10 classes of DPT students, the program lacks the alumni distribution and diversity that many of the other larger private and public programs currently enjoy. This, Dr. Sandstrom suggests also limits the capacity for large alumni donations.

Creighton finds itself competing against other well known larger private institutions when trying to recruit potential students. Primarily, the program sees its main competition as USC, Northwestern, and Washington University in St. Louis. A majority of applicants come from the Midwest and west coast, with fewer coming from the east coast. Dr. Sandstrom thinks they really can’t compete with the public institutions, like Nebraska, because of the difference in cost. In the end, he suggests, students pick Creighton because they believe in the mission.

## Cost

Creighton University is a private school with a program budget supported by student tuition. Tuition and fees for each student are approximately \$ 11,000 per semester. The program covers eight semesters for a total tuition cost of over \$85,000. This price does not include additional expenses, such as university fees, books, housing and living arrangements. Dr. Jensen describes the tuition costs at Creighton as traditionally low when compared to other Jesuit universities. Therefore, the current president is moving tuition costs upward to reach a position in the middle.

Dr. Jensen sees the cost of the program as a limiting factor. The department's lack of scholarship money to offset tuition costs further complicates the situation. As a consequence, she feels some students do not attend Creighton because of the tuition. The faculty thinks scholarship money would allow them to attract a more diverse student population that would enhance the learning environment.

## Unique Features

The Department of Physical Therapy housed within the Creighton University philosophy has created two unique experiences that strongly support the Jesuit ideals. In addition, both of these opportunities engage students in additional clinical educational experience. First, the department has established two residency programs for DPT students enabling them to gain advanced knowledge and skills. Part of the Jesuit mission is to promote superior education; these residencies afford entry-level students with the opportunity to learn and

cultivate skills in a specialized area. One of the programs is with Kaiser Permanente Hayward Physical Therapy, which offers expert training in manual therapy. The other site is located within the Creighton University Medical Center offering students the opportunity to obtain advanced education in orthopedics; few programs within the US offer this type of educational experience.

Creighton students also have an opportunity to participate in physical therapy care for underserved populations in the Dominican Republic. The Jesuit mission of service and care for all is strongly related to this experience. The Dominican Republic Outreach Program provides people with “professional services” from students supervised by faculty and licensed clinicians. Creighton physical therapy students in their final year of the program spend four weeks in the Dominican Republic providing physical therapy care to a variety of patients. Together these two unique experiences help to solidify the professional nature of the Creighton program.

### Environment

The Creighton Department of Physical Therapy is located adjacent to the Medical Center. Program documentation describes the university’s environment as “a highly evolved medical community” creating a true health care training environment. At least one-third of students attending Creighton are majoring in a health care related fields leading to a feeling of “community and passion” for helping others.

Dr. Jensen thinks the program benefits from its location within a university that has a "Comprehensive Academic Healthcare Center." The school, in which the department is located, consists of two other health profession programs creating "strong administrative support and resources." She suggests that it is a big advantage to work and teach in an environment that is supported by disciplines that understand the program's goals and objectives.

The health-related educational climate for students is well defined. Each new student, at the beginning of the program, recites the physical therapy pledge. The purpose is two fold; first, the program wants to define "how serious they are about the profession of physical therapy." Having the students state the pledge at the beginning sets a standard of commitment to the profession and their effort while at the University. Second, the faculty want the students to be welcomed as "part of the community where all of its members, faculty and students alike, are treated with respect and held accountable for their conduct." There is a strong emphasis placed on creating a collegial atmosphere where "professionals are teaching professionals-in-training."

Creighton University is located in Omaha, Nebraska, a moderate size midwestern city. Dr. Jensen thinks the program's location makes it hard to attract west coast students. "We suffer from geography, and there are no oceans or lakes and only small hills." She does believe the growth and development within the city has vastly improved since the program began. Dr. Sandstrom agrees to a point; he thinks the perception related to location will deter applicants but once they actually come and visit the program their views might change. He suggests,



“We don’t have people leaving because they can’t stand the city or the climate.” One positive is the low cost of living, which helps with student recruitment but, even more, so with attracting new faculty.

Omaha is also home to the University of Nebraska Medical Center, which houses the state's public physical therapy program. These two programs are both ranked within the top 15% (US News) although geographically separated by only nine miles. Dr. Sandstrom suggested that both programs are cordial. “We have a good relationship,” but each remains focused on its own goals with little faculty interaction. However, he does think that the students from each program are much more connected and even do some fundraisers together.

### Future Planning

By establishing the first DPT program, Creighton has been a leader in innovation physical therapy education. Planning and working toward the future is a primary area of focus and concern for the faculty. Dr. Sandstrom summarized the importance of staying competitive best, stating, “Long term success is very important because it maintains the value of the education that students within the program received.” His viewpoint reveals a very important truth, that a change in public perception of a program can directly affect alumni as well as new graduates.

As a consequence, the department has several points of emphasis related to future growth and development. One major endeavor is the ongoing assessment and advancement of the curriculum. As stated earlier, Dr. Sandstrom has

implemented a systematic review of the curriculum that evaluates various aspects of the program over time. For example, last year the faculty evaluated the program's content related to the integumentary system to determine its strengths and weaknesses. Next year's assessment will involve the cardiopulmonary system; in this way the program will be able to make the most appropriate advances in content and knowledge.

Although curriculum is important, Dr. Sandstrom on several occasions pointed to scholarly productivity as his biggest concern for the future. The educational community is highly attuned to the research productivity of the major programs across the country. There is a sense that Dr. Sandstrom thinks Creighton is behind when it comes to research and scholarly productivity. This, in part, illustrates why the program has made it a point to focus their research efforts on enhancing their outcomes. Dr. Jensen and Dr. Sandstrom admit that Creighton can never become a strong research-intensive program. The focused attention on teaching limits the overall commitment to research.

One final issue for the future is clinical residencies. Although the program has established two such programs, Dr Sandstrom does not view either one as a true prototype for the future. He suggests that the control of these programs needs to come from the clinic as opposed to the university. Currently, both of their programs are strongly directed by Creighton and not the clinical site. Dr. Jensen also thinks the future of clinical education for physical therapy is residency programs. She thinks the level of the DPT education warrants such programs and if Creighton has the capacity they plan to be leaders in residency education.

## Summary

The Creighton Department of Physical Therapy is very proud of its heritage as the first DPT program. That heritage of being leaders in physical therapy education coupled with the University's mission of educational excellence has pushed the program to excel in curricular content.

The defining component of the program is its emphasis on professional as well as educational development. The Jesuit ideals of social justice and moral values provide a strong centerpiece for developing committed healthcare professionals.

## CHAPTER 8

### UNIVERSITY OF NEBRASKA

The University of Nebraska is comprised of four campuses: University of Nebraska, Lincoln, University of Nebraska, Kearney, University of Nebraska, Omaha, and the University of Nebraska Medical Center (UNMC). UNMC is a specialized medical campus located in Omaha offering healthcare-related degrees. The Division of Physical Therapy Education is positioned on the UNMC campus as part of the School of Allied health Professions, a branch of the College of Medicine. The physical therapy program begins each fall with forty new students who upon successful matriculation receive the entry-level doctorate in physical therapy (DPT). As of September 2004, US News and World Report ranked the University of Nebraska Physical Therapy program twenty-third out of 211 programs (*Physical Therapy Program Rankings*, 2004). The following faculty, Dr. Pat Hagamen and Dr. Kyle Meyers, were interviewed for this study.

An ad hoc committee of the Nebraska Chapter of the American Physical Therapy Association (APTA) first recommended the need for a public physical therapy program in Nebraska in 1968. Their vision became a reality in the fall of 1970 with the admission of twelve students into the two-year bachelor's program. Full accreditation soon followed and has never been lost in the program's 36 year history. The division has evolved with the profession, progressing to a Master's of

Physical Therapy (MPT) degree in 1989. As the educational program became more demanding, so too did applicants wanting access, creating a need to expand enrollment to forty. The faculty recognized early on that the doctor of physical therapy degree initiated by Creighton in 1993 would be permanent; consequently, in 2001 the University of Nebraska became “one of the first public institutions in the nation to offer the DPT.”

### Mission

Information retrieved from the website indicates that the department has three distinct parts to its mission. First, the program’s goal is to “prepare entry-level practitioners through a broad-scope education.” Second, the division wants to provide “professional services” to the community, and finally, the faculty are also committed to advancing the profession through “research and creative activities.” This “three-faceted” approach emphasizes the standard division of faculty obligation.

When Dr. Hageman was asked to summarize the mission of the program, she outlined these same three areas. However, she emphasized that the most important aspect was to “produce physical therapists who will serve the state of Nebraska.” The faculty believe this goal is best achieved by producing a “committed professional” armed with an “extensive education.” Dr. Meyers reiterated similar sentiments and noted that although the change to the DPT required “advancing the curriculum” it remained imperative that curriculum continue to produce therapists capable of practicing in any environment.

The focus on a generalist education is a critical element because of the rural nature of the state. Dr. Hageman explained that 44 of the 93 counties in Nebraska are considered frontiers that are defined as having less than one person per square mile. With so few metropolitan areas, it is highly probable that graduates of the program will find themselves in a town with few or no other physical therapists. As a consequence, the division feels its responsibility is to provide its graduates with an education that will allow them to function in this challenging environment.

To a slightly lesser extent, the faculty maintain strong professional involvement and research agendas. Both of these areas contribute to the DPT educational strategy by providing for an appreciation of the value of service and research as they relate to clinical practice.

#### Educational Philosophy

To achieve its mission, the faculty at UNMC have implemented several different strategies. The first principle is to build a curriculum broad enough to capture as many different areas of clinical practice as possible. Dr. Meyers described a process of matching the amount of curricular content to the amount of time devoted to that area within a typical clinic. He suggested, "The volume is kind of consistent to what practitioners would typically do on a regular basis." This allows the faculty to cover orthopedics and neurological areas in great detail while devoting smaller amounts of time to areas of more limited exposure, such as the integumentary system.

To further reinforce this concept of breadth of knowledge, the program requires each of its students to participate in five different practice areas. Dr. Meyers stated, "We are trying to match our curricular philosophy with our clinical philosophy." The variety of clinical settings offers students an opportunity to treat many different types of patients and use an assortment of skills. This design further illustrates the view that UNMC is preparing the independent rural practitioner.

A second aspect of its educational strategy involves assembling a diverse faculty able to teach this extensive curriculum. Dr Meyer describes the faculty as "people who practice in the same areas that they teach," making them specialists in their disciplines. He suggests this not only allows for the program to create a "breadth of exposure" but also "enhances the depth." This philosophy illustrates a critical link between faculty and curriculum.

While the emphasis on depth and breadth of knowledge are unmistakable, Dr. Hageman also believes that the educational success of her students requires "an interconnection between practice and the profession." The faculty's third goal is to educate students on the value of belonging to their professional association and its relevance to their daily practice. Dr. Hageman used the example that the "association can be a lifeline" for a rural therapist insuring him/her an avenue for communication.

To facilitate student understanding, every DPT student at Nebraska is required to attend two state meetings and one district meeting per year while they are enrolled in the program. In addition, Dr. Hageman described the

development of a student organization, the Students of the University of Nebraska, American Physical Therapy Association or SUNAPTA, which affords students the opportunity to get involved in professional activities prior to receiving their degrees. Professional service, faculty diversity, and curricular scope provide the foundation for the Nebraska Physical Therapy Program.

### Faculty

The Physical therapy program at UNMC has 14-fulltime faculty, six of which have PhDs and eight who are certified clinical specialists. As a unit, the majority of the faculty have been together for at least the past 15 years, creating a very stable educational environment. Dr. Meyer believes that “the stability has [afforded] the program the ability to look carefully for new faculty with particular expertise.” The attention to detail has enabled the program to fill voids in curricular content.

The lack of turnover in staff has created strong camaraderie among the staff. Dr. Meyers stated, “The faculty share similar views about education, life, and interactions.” He believes this to be a major factor for the program’s success and suggested, “It is clearly a strength and one the students often acknowledge.”

Dr. Hageman also believes her faculty are one of the strengths as she addresses their dedication “enabling the program to fully commit to the educational philosophy.” The clinical specialists teach in their discipline maintaining a constant level of community practice while the research faculty



provide core curricular stability. This mixture enables the faculty to provide the most comprehensive and contemporary education.

This dedication, however, is more than curricular; they “practice what they preach.” Dr. Hageman states, “Everyone is actively involved in the physical therapy association either at the state or national level.” In addition, many are involved in other university or community organizations demonstrating a “high professional devotion.” This involvement enables them to reinforce the value of professional commitment to the students.

### Research

Dr. Meyers suggests that Nebraska is “like most academic health-science centers” in that faculty are required to maintain a “three-pronged approach consisting of teaching, research, and service.” He believes each of the faculty are responsible for 50% teaching while dividing service and research among the other 50% of their time. Dr Hageman also revealed that the core faculty are divided into “50% research and 50% clinical.” The research faculty are responsible for conducting clinical studies and obtaining grant support while the clinical faculty assume a larger teaching role with a more limited scholarly activity requirement.

Teaching requirements and a lack of strong research infrastructure has required the faculty to develop two primary focus areas of research: motor control and physical activity. Studies dealing with motor control questions involve subjects with Multiple Sclerosis, Parkinson’s Disease, and more recently total

knee replacements. The motor control lab contains a force plate and EMG equipment to monitor posture and equilibrium capabilities of the subjects. The physical activity research funded through the Arthritis Foundation attempts to understand the effects of activity and exercise on a variety of chronic diseases.

The focused approach to research has also allowed the Division of Physical Therapy to consolidate its grant writing efforts. Over the past ten years the staff has been able to increase its extramural funding from \$64,000 to \$352,000. Dr. Meyers emphasized, "Our approach has been deliberate and purposeful," making them more successful in obtaining grant money.

The program's approach to student research has also been purposeful and deliberate. DPT students at Nebraska are not responsible for conducting research projects but instead are required to complete "a critical assessment of a research question." Dr. Hageman alluded to past difficulties with managing multiple student projects, "it is not productive for the faculty." Dr. Meyers referred to an editorial published in the *Journal of Physical Therapy* outlining the pitfalls of faculty assisted student research in physical therapy. He stated, "We agree with the editorial, instead we want to teach students to be effective consumers of research." The faculty require each student to define a researchable question and formulate a result through literature analysis. This approach provides graduates with a model for applying research findings to clinical practice.

## Facilities

The Division of Physical Therapy Education is located in the Student Life Center on the southeast side of the campus. This building features a student/faculty gym complete with weight training equipment, cardiovascular exercise machines, basketball courts, racquetball courts and a locker room. The physical therapy program is the only educational department housed within the facility. Other amenities include a bookstore and student services. Overall, the building's appearance and services create a very positive impression.

Within the building, the program has two dedicated teaching laboratories and two research laboratories as well as all of the faculty offices. The teaching laboratories have several tables and equipment in them representing an orthopedic training area and a neurological training area. Dr. Hageman believes the location is ideal for the program, "I don't think you can get much better than that" referring to the lab space and other amenities, such as the gym. She also notes that the building's highly accessible entrance has allowed the faculty to conduct research on physically challenged individuals without concern.

While the location of lab and research space is "very nice," Dr Meyers admits that having to teach lecture-based courses all over the campus is a disadvantage. Currently, the Division does not have a dedicated lecture hall. Although frustrating, he explained that the new \$55 million Education Building scheduled to be completed in 2008 should solve many of their classroom issues. He reported that this building will contain state of the art laboratories, large

classrooms, and common areas for student interactions. It will house the College of Medicine primarily but will be assessable to all other programs.

In addition to the new Education Building, the campus also offers an extensive medical library within walking distance of the Student Life Center. The library contains computer terminals, a vast number of books and journals, and multiple places to study for students.

### Curriculum

The Nebraska curriculum, as listed on paper, represents a familiar design with the first year comprised primarily of basic science classes, while the second and third years are dominated by more advanced clinical decision-making coursework. Dr. Hageman suggested that one of the strengths of the program's curriculum is the diversity in the basic science education. Experts from outside of the division, such as anatomists and physiologists, teach several of the science courses providing physical therapy students with advanced education as well as an opportunity to interact with other healthcare students. Overall, DPT students are required to complete 125 credits for their degree, 91 of which are didactic while the other 34 are clinical internships.

Dr. Meyers believes that the program, "probably has too much volume" with the addition of more classes following the transition to the DPT. He suggests that such an amount limits the student's opportunity to learn the material. As a consequence, Dr. Meyers stated that the curriculum is designed in an "iterative

format” to enhance retention. Subjects taught early on in the curriculum reemerge in later classes helping to reinforce the students’ understanding.

To further the educational process, DPT students complete five separate clinical rotations prior to graduation. Dr. Meyers provided insight into the program’s philosophy concerning clinical education. First of all, the faculty felt the program should maintain the clinical length at eight weeks, as was originally designed in the master’s curriculum, limiting the burden placed upon the instructors in the clinic. Second, students are required to complete a rural affiliation conforming to the program’s mission. Third, Dr. Hageman explained that the program has actually decreased the number of clinical sites it sends students to enabling them to develop “stronger relationships with [the remaining] one[s].” Dr. Meyers suggested that it “really allows him to develop a personal working bond with each site.” This close interaction is designed to create an understanding between the clinic and the university regarding the educational expectations for each student.

Overall, the division believes it has assembled a very strong curriculum evidenced by a “very high” first time pass rate on the national exam. In addition, program documents suggest “many students have received national recognition for academic excellence.”

### Student Recruitment

Demographically, Dr. Hageman reports that 80% of each physical therapy class is comprised of in-state students. Although the out-of-state enrollment is

low, she suggests the 20% of out-of-state variability provides students with a diverse educational environment. What is more intriguing is the number of students that come from rural areas of Nebraska. Dr. Hageman believes this number to be around 65% annually. These students often have difficulty adjusting to the large urban community of Omaha. The program is faced with the task of nurturing students through the initial acclimation stage. The integration of urban and rural students adds another level of diversity within the classroom. The faculty, however, remain concerned about the lack of minority students within the program. Dr. Meyers stated, "One of our weaknesses is a lack of ethnic diversity."

Applicants must complete a fairly standard process in order to be admitted to the program. In talking with the faculty, it is not the always the best academic students but rather the students that match the program the best that are accepted. Specifically, they are looking for students who have performed well academically, who write and speak effectively, and who are adept at handling more than just school. To locate these students, the program interviews each applicant. Dr. Hageman believes the interview process is influenced by the "diversity of the faculty, which has led to a diverse student body." Dr. Meyers describes this process as an opportunity to "screen for the people who would be a very bad match," as opposed to "finding the perfect match." Although the faculty admits that there is no literature to support the effectiveness of interviews, they believe admission should be based on more than simply numbers.

The interview process also provides the program with an opportunity to educate students on the value of a Nebraska education. Prospective students meet with current students in the program for a panel discussion, which provides applicants with an opportunity to view the program from a student's viewpoint. In addition, the chair of the program provides a formal presentation emphasizing the "Points of Excellence." These points reflect the faculty's perspective on the benefits of a physical therapy degree from Nebraska. The day ends with an informal gathering of applicants and faculty providing a third chance for students to gain insight into the program's educational approach.

Dr. Hageman believes that Nebraska competes for students with programs in the surrounding states, which include: University of Iowa, University of Kansas Medical Center, Wichita State University, University of South Dakota, and, to a certain extent, Creighton. However, she explained that the program does not lose admitted students very often. Due to the close proximity of the Creighton program, I asked her about their competitive relationship. She reported that the two programs have a good working rapport that has evolved over time and is directly related to leadership. She admits, "I don't think they think of us as a competitor," "I don't think we threaten each other." She attributes this lack of competitiveness to the differences between the two missions: Creighton focuses on Jesuit ideals while Nebraska wants to develop students who will serve the state.

It was apparent during the interviews that the Nebraska faculty were concerned about a second program opening up in Omaha (Creighton). Dr

Hageman remembers that the overall theme became “lets focus on us and fly our plane” alluding to the idea that the Nebraska faculty could only control their own destiny. Their focus on producing physical therapists for Nebraska has created a very strong alumni that populate the entire state. The program’s alumni serve as a constant reminder of the quality of education and thus make for a great marketing tool. Dr. Hageman believes that the program has not done enough formal organization with alumni. As a consequence, the division has just this past year implemented an Alumni Association to better organize their efforts in maintaining a constant link to their graduates.

Although alumni can be a constant source of recruitment, Dr Hageman also believes, “the website is a huge recruitment tool.” As such, it is evaluated and updated three times a year with the addition of an online application coming next year.

#### Cost

Overall, the program is very inexpensive. The state-run institution supports the program, providing 80% of the funding. Students pay approximately \$8,100 each for the first two years and \$6,300 for the final year for a total of \$22,400. Considering that some programs cost more than \$100,000 in tuition fees, the Nebraska program is quit reasonable.

Out-of-state fees raise the three-year total to \$56,000 for nonresidents; however, the University wants to be able to attract “top caliber” medical students who will hopefully choose to practice in Nebraska upon graduation. To entice



them to come, the medical school has been granted a waiver for non-resident fees to lower the cost to out-of-state students. As a consequence, the physical therapy program has been granted a similar waiver for a certain percentage of their students, thus enabling it to also bring in a diverse population.

### Unique Features

The Nebraska Division of Physical Therapy is committed to preparing well-educated, independent practitioners. Many programs across the country will acknowledge that new graduates should begin work in an environment that offers experienced mentorship. In fact, the current trend toward clinical residency suggests that physical therapy graduates might benefit from an extended clinical development period. In contrast, the Nebraska program recognizes that one of the state's largest needs is physical therapists in rural settings, which often means working alone.

As a complement to this goal, the division has partnered with Chadron State College to recruit and educate students from rural Nebraska. The Rural Health Opportunities Program (RHOP) was developed to identify students interested in becoming physical therapists who are from rural Nebraska. It offers students an opportunity to complete three years of undergraduate work followed by three years within the physical therapy program. In addition, the Division of Physical Therapy has also developed a pre-admission track for highly motivated students. The goal of this program is to find students who "through life experiences and personal motivation have a desire to become a healthcare professional willing to

serve persons in need. “ This track is geared toward helping underserved populations. Students selected for this program are guaranteed admission to the DPT degree provided they meet certain undergraduate requirements.

To further their student preparation for independent practice, the faculty implemented a clinical rotation within the first year that provides students with exposure to different specialty areas. Dr. Hageman stated, “The goal of this internship is not to produce specialists but promote an understanding of all areas of clinical practice,” further advancing the students’ scope of knowledge.

### Environment

Omaha is a metropolis with approximately 1.9 million people. While small to some, Dr. Hageman believes it can be a tough transition for many of her rural students. Dr. Meyers agreed, stating, “To Nebraska natives, it’s a big city with all of the things that scare people.” He also admits that while the cost of living is low and there is affordable housing, Nebraska is probably not on the top five places for out-of-state students.” Still, Dr. Hageman insists that Omaha is big enough to attract out-of-state applicants. She feels the combination of size, low cost, and reputation has a significant influence on recruitment.

The program is located within a “Comprehensive Academic Health Science Center,” whose documents suggest it provides students with many benefits including “excellent medical library facilities, exposure to a broad array of faculty members, and the opportunity to interact with many different disciplines. Dr. Hageman considers the opportunity for interdisciplinary coursework to be a

strong asset for the program. Dr. Meyers believes the program's location adds to the recruitment power of the program. Fundamentally, the faculty suggest that being a part of a health science campus provides them with a strong academic interdisciplinary environment where they are recognized for their accomplishments.

In contrast, the program's relationship with the physical therapy staff at the Medical Center is not strong. Dr. Hageman revealed her frustration regarding the limited contact between the Medical Center and her program, "we are not always congruent." Dr. Meyers reiterated, "We are completely separate staffs but our communication is improving." Although this situation remains a limitation, perhaps an even greater limitation is the program's also apparent hierarchical rank. The division of physical therapy resides on the lower end, as Dr. Hageman put it, "We are a small fish in a big pond." This structural environment creates limitations in infrastructure and funding support.

Within the program, the faculty have created an "informal but respectful" educational environment. Faculty and students from the beginning communicate on a first name basis allowing students to "have a more connected relationship with faculty." The faculty believe it is their "professional responsibility to mentor students inside and outside of the classroom." Dr. Hageman suggests that this is partly fulfilled by informal discussion and an open door policy that allows students to seek out faculty at all times. She suggests that over the years many former students appreciate the informal atmosphere. While this creates a unique experience, it has its drawbacks. Dr. Hageman admits sometimes this

environment can create a “challenging line” for faculty-student relations. The goal is to create an approachable atmosphere within the context of a professional relationship.

The open lines of communication also provide the faculty with an opportunity to educate students about professional issues happening within physical therapy. Dr. Hageman describes a “Director’s Advisory meeting” as a way of learning about student issues as well as informing them about national level activities.

### Future Planning

Planning for the future begins with understanding who you are and identifying expected outcomes. Dr. Hageman believes Nebraska’s success is directly related to program growth with purpose. In the early nineties, the faculty identified a goal of expanding research without sacrificing the curriculum, as Dr. Hageman put it, “we want to be something in between a major research institution and a liberal arts college.” As a consequence, the program hired faculty to fulfill both academic and research oriented areas, while at the same time advancing the curriculum to the DPT. Continued growth has now shifted toward the development of a PhD program and faculty research development.

Research development requires infrastructure and funding. Dr Meyers noted that state funding continues to decline, which will require departments to be more self-sufficient. Therefore, he foresees a future where the division will need to be more interdisciplinary in its approach to research activities. This will enable faculty to obtain large grants. He also suggests that it will be important for the

program to maintain physical therapy as a need for Nebraska. Doing so will keep taxpayers and the University in support of the program.

Sustaining a successful reputation ultimately rests with their graduates. Dr. Hageman stressed, "It is the people that make the program successful." Good students and good faculty enable the program to continue to produce quality therapists that reinforce the educational value at Nebraska. Dr. Meyers agreed, "The biggest key is to admit good students, our reputation is directly affected by our product." He further explained that quality practitioners who are also strong leaders will continue to reinforce the Nebraska legacy.

#### Summary

The Division of Physical Therapy at the UNMC is focused on providing broad-based generalists who will provide high quality physical therapy services to the citizens of Nebraska. Their approach to education stresses the need for students to be ready to accept their professional responsibility upon graduation. As such, the faculty have created an informal yet professional environment that stresses the development of broad-based knowledge and professional awareness that enables graduates to succeed in rural and urban practice.

## CHAPTER 9

### UNIVERSITY OF ILLINOIS AT CHICAGO

The University of Illinois is comprised of three main campuses located in Champagne, Springfield, and Chicago. The Department of Physical Therapy is on the University of Illinois-Chicago (UIC) campus with the other healthcare professions. The department is a member of the College of Applied Health Sciences situated on the western side of the campus. Once a year, the program admits 36 new graduate students into its entry-level doctorate of physical therapy (DPT). As of September 2004, US News and World Report ranked the UIC physical therapy program twentieth out of 210 US programs (*Physical Therapy Program Rankings, 2004*). The following faculty, Dr Susan Campbell and Professor Mary Keehn, were interviewed for this study.

The UIC Department of Physical Therapy began its educational endeavors in 1971 by offering students a bachelor's degree in physical therapy. As the profession matured, the program developed additional degrees, offering an advanced master's for licensed therapists and a multidisciplinary PhD in disability studies. In 2000, the clinical bachelor's degree was eliminated in favor of a new DPT.

## Department Structure

In addition to the DPT degree, the department offers an advanced master's degree designed to "prepare practicing professionals for leadership roles." Physical Therapy, Occupational Therapy, and Disability Studies support a joint PhD degree. Prof. Keehn revealed new plans to "restructure the PhD into a health and rehab sciences interdisciplinary degree." She cited the change as a way "to allow students to develop their education in an area of interest." Even with the potential change, faculty expressed displeasure with the current PhD curriculum. Consequently, the department is working on implementing a new DPT/PhD joint degree that will identify two to three entry-level students who might excel in academia. Students entering this track will complete an additional year of coursework, along with a formal dissertation project.

To support practicing therapists, the faculty have developed a Fellowship in Manual Therapy. The curriculum "is designed to provide advanced manipulation and orthopedic training for licensed physical therapists." Enrolled participants graduate with a certificate following fulfillment of the necessary course work and mentored practice hours.

In addition to the academic programming, the department also manages the University Medical Center's physical therapy staff. Dr. Campbell carries the title "chief of physical therapy services," while Prof. Keehn has a title of "director of clinical services." Each title defines his/her management responsibilities. Although this adds more burden to the administration, the program has created a

merger between the department and the hospital that is beneficial to the DPT curriculum.

### Mission

The UIC Department of Physical Therapy documents reveal the following mission statement: "The department maintains a commitment to excellence in research, clinical practice, teaching, and community service." This global declaration reflects the normal responsibilities required of faculty at a research extensive institution. Faculty interviewed provided a more focused assessment of the department's goals stressing that the most important aspect is "to train entry-level professionals." Prof. Keehn agreed adding, "The mission of the DPT program is to prepare practitioners who are valuable members of the healthcare system." She also stressed the importance of teaching students leadership skills that foster patient advocacy and professional responsibility.

In addition to the DPT focus, Dr. Campbell stressed the importance of faculty research productivity. She stated, "We have a strong commitment to scholarship," which supports the obligation faculty feel toward advancing the growth of physical therapy practice. As a result, specific enhancements to research facilities, staff, and resources have been implemented within the past five years. Coinciding with this new research emphasis is the development of the joint DPT/PhD program, which solidifies the next generation of research faculty.

In addition to the development of clinicians and conducting research, the environment provides a third significant objective for the program. The urban



communities of the city of Chicago are in constant need of physical therapists. UIC's state supported funding reflects a "commitment to Illinois", however, Dr. Campbell emphasized, "Our mission is an urban one, to help the underserved populations of Chicago." As a consequence, the department is focused on providing the city of Chicago with healthcare graduates and educational advancement.

### Educational Philosophy

To develop competent therapists who are capable of serving Chicago, the UIC faculty restructured the bachelor's curriculum in 2000 to reflect a more advanced education supported by a clinical environment. Dr. Campbell revealed that modifications have "completely changed our product" in a very positive way. Students are demonstrating a stronger, more effective clinical presence.

The didactic curriculum represents a fairly traditional approach to physical therapy education. What creates the difference, as Prof Keehn describes it, is an "immersion of the clinical setting throughout the whole educational program." She believes that this prepares "students to be ready to actively participate from the beginning of their internships," maximizing their learning process. Many courses incorporate clinical examples and training methods at the Medical Center. This environment offers students the opportunity to see and participate in real-time patient experiences that are often simulated at other universities. Dr. Campbell stressed, "We have really tried to take advantage of the setting, involving the

practicing clinicians as much as possible.” This creates a dynamic and eclectic approach to physical therapy education.

In addition to the clinical environment, the faculty believe it is necessary to create an active learning environment in order to produce confident, independent practitioners. Active learning is fostered through student participation in group projects, presentations, individual projects, and the development of a personal portfolio. Together, these ideals help to build a very clinician oriented education.

### Faculty

The Department has ten full-time faculty members, 70% of which have earned a post-professional doctoral degree. There are four part-time faculty who assist with the educational aspect of the program. The staff has two board-certified specialists and five faculty regularly engaged in clinical practice.

The group can be subdivided into a clinical non-tenure group and research tenure group. The department’s leadership judge this combination to be a “strength of the program.” Specifically, Professor Keehn explained that the variances “add diversity to the program allowing the faculty to provide a broad curriculum.” Dr. Campbell agreed sighting the fact that all faculty teach within the DPT curriculum allowing each instructor to concentrate “on one course in a semester.” The combination of clinical and research oriented faculty along with a focused professorial approach supports the department’s belief in its strength.

The depth was created by Dr. Campbell who has worked diligently over the past ten years to hire experts in a number of different research fields. She noted

that “the tenured faculty have vast research capabilities including orthopedics, neurology, pediatrics, and cardiopulmonary.” The amount and significance of the research adds to the “quality of education for our students.” Dr. Campbell firmly believes that the program’s reputation is based primarily on the faculty. Prof. Keehn agreed, suggesting that the “understanding of roles” between clinical and research staff provides balance and effectiveness.

Beyond the core research and clinical faculty exists a significant number of clinical therapists who routinely participate in the educational process. Dr. Campbell revealed that “many of the clinicians over in the hospital teach in the DPT program,” suggesting it has become an invaluable component to the curriculum. Prof Keehn alluded to a medical center staff teaching requirement that each employee discusses and reviews annually. Their involvement enables the program to immerse the clinical education within the curriculum. In sum this combination of research, clinical, and adjunct faculty provide a deep and diverse faculty.

## Research

Research is considered a critical component to the department’s success. Dr Campbell stated, “Our research is a very important part of our educational program because we are a research university.” Philosophically, there is an expectation for all members of the faculty to participate in scholarly activity. The type and expectations related to research varies depending upon the faculty.

Ten to fifteen years ago, the department had very few faculty capable of producing grant supported research activities. Dr. Campbell's goal has been to "build a movement science oriented approach to research by hiring trained professionals capable of acquiring extramural funding." Subsequently, several post-doctoral researchers have developed a Clinical Gait and Movement Analysis Laboratory at UIC. This lab focuses on developing "neuromuscular defense mechanisms against fall-related injuries." It is equipped with a force plate and motion analysis equipment enabling the researchers to study movement dysfunction in a variety of populations. Interestingly, Dr. Campbell revealed that the ultimate goal of the funded research activity is to allow the clinical faculty "to produce results that affect clinical practice." Currently, the clinical faculty investigate a broad range of research questions that include workforce evaluations, quality of life measurements, and special education.

As many other programs have also considered, the UIC staff contemplated adopting a "focused approach" to research enabling them to be more productive in their efforts. However, the faculty felt the narrow scope would not take advantage of the staff's expertise nor would it promote their continued advancement. As a result, the department conducts research in multiple areas and across varying populations.

DPT students at UIC are not required to conduct experimental research. The program believes student-organized investigations have "limited value while placing a large burden upon the faculty." Dr. Campbell explained, "We gave up on that years ago, it was just a waste of time." She further revealed, "We felt the

students came away from the experience with a negative feeling about research.” Instead the program uses “an applied research approach” that is repeated throughout the curriculum. In addition, each student completes a case study report where they are asked to discuss experimental findings that support their conclusions. The emphasis is placed on students being well versed in applying research findings to clinical practice.

### Facilities

If student recruitment were solely based upon facilities, UIC would struggle significantly. As Dr. Campbell suggests, “The building is pretty crappy, it’s a million years old with no central air conditioning.” Prof Keehn expressed knowledge of plans for renovation but acknowledged that resources are limited and the nature of public funding prevents the program from increasing tuition. Dr. Campbell summarized the situation by stating, “The facilities are our biggest problem when competing for students; everyone else has a new building.”

The department is situated on the fourth floor of the Applied Health Sciences Building (AHSB). It has one big classroom that is used as a lecture/laboratory space with treatment tables that double as desks. This room is equipped with some media capabilities. The program also possesses a second small classroom design exclusively for lecture-based classes. Also located on the fourth floor are all of the faculty offices although currently the program has more faculty than it has space.

The basement contains one large motor control laboratory where faculty have access to ample space in which to conduct their research. Although the teaching area is limited the program has made excellent use of their relationship with the University of Illinois-Chicago Hospital. The medical center, which is a couple miles from the AHSB, provides the program with a vast amount of equipment and clinical laboratory space for student teaching.

Dr. Campbell summarized her thoughts about the departments facilities by stating, "Overall, we lack lab space, office space, and teaching facilities." She confirmed a desire to continue to seek ways to make this situation better for the program.

### Curriculum

The curriculum covers three calendar years in length and is divided into didactic and clinical course work. The first year provides students with a basic science foundation, which is applied to more clinically oriented course work in the second year. The third year consists of 38 weeks of clinical education and three capstone classes that finalize the student's education. In addition to the core curriculum, students can sign up for elective courses that provide specialized training. Three separate areas of focus are offered including pediatrics, woman's health, and urban practice.

Prof. Keehn explained that the curriculum is divided into three separate tracks: neuromuscular, musculoskeletal, and cardiopulmonary. The department possesses both clinical and research oriented faculty who are experts in these

areas providing students with an “advanced education.” Dr. Keehn realizes that the department “has a complicated curriculum that is beyond the entry-level.” However, she notes that changing the curriculum would “decrease the level of the product and the satisfaction amongst the faculty.” So, while the curriculum might be more advanced than needed, the department believes changing it would be a disservice to the students.

In discussions about the curriculum, the faculty believe the centerpiece of the track design is the integration and assessment courses. These experiences, implemented in the second year, are designed to bring together information across all three tracks. Dr. Campbell describes it as “a simulated clinical course.” Students perform evaluations and treatments on fictitious patients in the medical center while being videotaped. This provides them with information about their understanding of the material and their ability to successfully implement treatment within a true clinical environment. These courses help to complete the student’s transition from classroom to clinic.

The faculty also stressed the value of weaving the medical center environment into the curriculum on a regular basis. Dr. Keehn believes student exposure to this atmosphere provides them with an opportunity to integrate didactic material. Classes routinely conduct laboratory activities within the hospital providing both inpatient and outpatient settings. Dr. Keehn states, “It creates a more meaningful learning environment putting ideas into action.”

## Student Recruitment

The program seeks out intelligent individuals who also exhibit a willingness to provide a service to the public. Dr. Keehn stated, "We want students who are not self-centered but rather willing to take on a lot of responsibility." In addition, the faculty believe it is important for the collective group to be diverse, which is defined by ethnicity as well as educational background. Dr. Campbell commented that the class is "anywhere from 15% to 35% minority on average," which she notes conforms to the university's urban mission. Due to this emphasis on urban education of the large Chicago minority population, the program takes extra time to evaluate minority candidates. Overall, Prof. Keehn believes variances within each class "contributes to a better overall outcome."

Recruitment for applicants begins with the website. Prof. Keehn considers it the location students first learn about the program. In addition to the website, faculty do formal presentations to undergraduates across the University of Illinois system. Prof. Keehn believes another positive recruiting tool is their ranking in US News and World Report. Consequently, she feels strongly that the faculty need to continue to do national presentations to maintain and enhance the program's visibility.

The department does not believe in interviewing students for admission. This is, in part, related to the demographics of the applicant pool. Faculty appreciate the economic constraints that many students endure, which makes the cost of attending an interview a potential barrier to admission. The lack of an interview however, prevents the student from seeing the program. As Prof. Keehn noted,



“We realize it eliminates a chance for us to market our program.” Instead, once an applicant is admitted, they are invited to meet with the faculty and tour the facilities. Tours include a trip to the medical center, which Dr. Campbell suggests, “is a big factor; we want students to appreciate the relationship and understand its value.” Prof. Keehn expressed an understanding of the competitive nature of recruitment. “We know we are in direct competition with Northwestern for many of our students, so it is important for us to point out our strengths.”

The department’s major competitors are Northwestern University, also located in the Chicago area, and Washington University in St. Louis, primarily for out-of-state students. Dr. Campbell alluded to a growing problem with this competitive environment. She stated, “We are receiving more and more out-of-state applicants who are the strongest applicants within the cohort. Our limited financial support prevents us from attracting these students to our program.” Currently, the program is unable to offer incoming students scholarships or fellowships, which limits recruitment competitiveness. Dr. Campbell stated, “Financial resources and scholarships for students are something we need to build.”

#### Cost

Student tuition at UIC is approximately \$15,000 for the first and second years of the program. The third year costs about \$12,500 for a total tuition rate of \$42,500. Out-of-state students pay an additional \$12,000 per year for a grand

total of approximately \$70,000. The additional fee makes UIC extremely expensive for nonresidents, further limiting its recruitment power.

Dr. Campbell noted that the program has had difficulty advancing due to the limited allocations associated with state funding. With the implementation of the DPT, the department added a tuition differential allowing the program to acquire funds directly from enrollment. As a consequence, Dr. Campbell described the program as “improving its financial position.”

In addition to the differential funding, the program has been able to offset costs through grant money, salary support from the hospital, and tuition garnered from continuing education courses offered to licensed therapists. Although the program cannot offer financial support in the form of scholarships and fellowships, lower tuition rates for in-state students continues to be a significant recruitment factor.

### Unique Features

While many programs describe an appreciation for community involvement, UIC has made a commitment to providing community service in several different ways. First, the faculty demonstrate this obligation by operating a pro bono clinic for individuals who do not have health insurance. Second, to instill an appreciation for professional service in the students, the faculty have developed an urban health care elective course that features an exploration of community-based services. Third, the program has agreed to supply continuing education to all of the physical and occupational therapists working in the K-12 public school

system. Educational courses are offered twice a year for approximately 200 therapists.

The advancement to a doctoring profession also means students must demonstrate behaviors and attitudes, such as professionalism, consultation, and teaching, that are not often a part of a specific course. In an attempt to better evaluate a student's performance in these areas, the department requires each student to complete a portfolio. Students are required to design and implement "individual projects" that meet the expectations of professionalism and other characteristics. Projects range from providing educational outreach to patients with little to no insurance to offering care to athletes competing in the Special Olympics.

One additional area that Dr. Campbell believes to be unique and beneficial is the development of a Manual Orthopedic Fellowship Program. This program is offered to licensed therapists all over the country. Providing this service, promotes the educational program at UIC, making it more visible to therapist across the country.

### Environment

The UIC Physical Therapy Department is located in downtown Chicago. Faculty suggest the city can be an advantage and a disadvantage. On the one hand, life in Chicago can be a strong attraction for some individuals who want to be close to all that this type of surrounding can offer. On the other hand, Dr. Campbell believes, "We get a few students from southern or rural Illinois who

have a hard time adjusting.” Add to the mix, the high cost of living and transportation issues, you can end up with a challenging recruitment barrier.

The campus is divided into two subcultures identified as the east and the west. Prof. Keehn describes the east as the traditional undergraduate university while the west side contains the health sciences. This separation in fundamental teaching creates a divide between the two sides, which affects funding at times. Specifically, Prof. Keehn addressed the source of much of the debate as revolving around the Hospital and its productivity. For example, the Hospital’s loss of revenue over several years made the west side look like a financial burden creating significant tension within the university. However, lately the medical center has been positive source of revenue and, as a consequence, everyone is looking more favorably upon the health science campus.

The most intriguing aspect of the UIC program is its relationship with the medical center. The program’s affiliation with the medical campus enables it to call upon different members of the healthcare community to contribute to the DPT education. Prof. Keehn suggested, “Our relationship is a bonus because members of the medical center staff have the capability of providing detailed information about a particular topic.” This approach adds “depth to the DPT student’s educational process.” This environment offsets the negative consequences of the program’s didactic facilities.

## Future Planning

Dr. Campbell believes the future of the UIC program will require “great clinical research, fellowship programs, and doctoral training. She was adamant about developing lines of research that will impact the way physical therapists treat patients. She also believes the department will benefit both financially and strategically by developing fellowship programs that create meaningful continuing education for licensed therapists. The development of a stronger, more independent PhD program will allow the university to aide the profession by providing future professors.

Dr. Keehn provided a short list of different ideas that need to be addressed in the future. These areas included facilities, instructional technology, and minority student enrollment. She was quick to suggest that while these changes are warranted “they are only enhancements not necessary for maintaining a successful program.”

When asked to discuss sustaining their reputation, Prof Keehn pointed to several different outcomes that will have an impact. First, the high passing rate for graduates on the board exam will continue to demonstrate the quality of the education. Second, it is important for the school to remain visible at national and state level activities, which will help in maintaining their national ranking. Finally, another strong benchmark for the program is alumni performance; their performance further validates the value of the education. These things in concert represent a pathway for continued success for UIC.

## Summary

The Department of Physical Therapy at UIC is committed to providing an integrative approach to DPT education by combining didactic and clinical education. Their approach centers on the use of the campus hospital, which provides space and teaching expertise to the program. Beyond the responsibility of producing therapists, the program would also like to be known for its research productivity. Recent efforts have created a more developed investigative agenda that has the faculty headed in the right direction. The department is limited by its facilities and appreciates a need for change. The program embraces its environment supporting local therapists and hoping to provide skilled clinicians who will meet the needs of the city of Chicago.

## CHAPTER 10

### NORTHWESTERN UNIVERSITY

Northwestern, a research extensive university, is comprised of two Chicago campuses located approximately twelve miles apart. Undergraduate and graduate level education is provided at the Evanston location, which also contains many of the traditional activities found on college campuses. The Chicago property is home to the professional schools of medicine and law as well as a few other graduate programs. The Department of Physical Therapy and Human Movement Science is located within the Feinberg School of Medicine. Beginning each August, the department enrolls 60 new graduate students in a seven-trimester curriculum culminating in the entry-level doctorate degree in physical therapy (DPT). As of 2004, US News and World Report Ranks Northwestern tied for tenth out of 210 programs (*Physical Therapy Program Rankings*, 2004). The following faculty, Dr. Karen Hayes and Dr. Babette Sanders, were interviewed for this study.

The Northwestern physical therapy department is one of the older physical therapy organizations in the country. It was originally founded in 1928, offering a bachelor's degree. The department grew over the years eventually advancing to the master's degree in 1991. Most recently (2001), advancements in curricular design have transitioned to the DPT as the primary degree for all graduates.

Throughout its tenure, Northwestern has maintained a constant level of academic rigor enabling it to secure uninterrupted accreditation.

### Departmental Structure

The Department of Physical Therapy and Human Movement Science provides students with one terminal degree, the DPT. Faculty have the responsibility of teaching entry-level students as well as conducting research in a vast array of fields. The DPT curriculum is spaced out over 7 trimesters requiring two and half years to complete. Each trimester varies in length from as little as seven weeks to as long as thirteen weeks depending upon the curricular content. The shorter trimesters are found in the program's second year allowing faculty to combine didactic and clinical internships in one semester.

### Mission

Northwestern's brochures and website suggest multiple goals and objectives for the program. For example, "the Department prepares graduates for physical therapy practice, research, education, consolation, and administration." However, documents and faculty stressed one consistent objective that is summarized in the following statement; "The objective of the educational program is to produce physical therapists that can respond to complex patient/client needs quickly, scientifically, and independently." Dr. Hayes comments reflect this focus. "We want to produce clinicians who were capable of contributing to clinical practice immediately." Dr. Sanders stressed the value of "graduating practitioners who are



well-rounded at an entry-level of practice while having a good research base to work from.” The combination of these statements reflects a “well-rounded entry level therapist” who can “function competently in the healthcare environment.”

Dr. Hayes describes a departmental mission focused on two areas only, one, “high quality entry level education and providing knowledge in human movement sciences.” A second involves “identifying existing or potential problems with human movement dysfunction.” The faculty have developed extensive lines of research that investigate the change in movement related to various disease processes. They aspire to be leaders in the development of “new knowledge in physical therapy and movement science.” As a consequence, the investigation of human movement dysfunction has become the central theme for the department. This focus is confirmed by Dr. Hayes’s statement. “Our role is to provide knowledge in human movement science that will enhance the program and the rest of the society.” As a consequence, the department has implemented a curriculum that strives to prepare therapists who are capable of critically analyzing movement dysfunction and create an environment where faculty are given the resources and time for research.

Documents also reveal statements that emphasize an attention to educate students on professional leadership and behaviors. For example, the website indicates, “The faculty expect students to internalize and demonstrate professional values and ethical behavior.” While these comments are frequently a part of many mission statements, the Northwestern faculty did not suggest that values and ethics are a strong point of emphasis for the program.

## Educational Philosophy

Based on the faculty's research objective, the Department has implemented a curricular design with a motor control framework as its central theme. This structure creates a model for movement analysis that provides students with a problem-solving paradigm. Dr. Hayes believes, "This helps them to interpret what they are seeing (with their patients) and how to relate it to science." Dr. Sanders described the concept as a way of "creating a consistent critical thinking process, which can be applied to any type of patient population." The theoretical approach to human movement was initially implemented within the neurological curriculum but later expanded throughout. This concentrated curricular approach merges with the faculty's research objectives creating a united educational philosophy.

The student's problem solving skills are cultivated through "active learning strategies" that foster opportunities to "become engaged with the material." This is primarily achieved through patient case studies that are used in each class and carried across the curriculum. Students apply learned skills and objectives to factious patients enabling them to practice using concepts taught in class. Dr. Hayes suggests that this continuity "further [promotes] the students' application of knowledge." Dr Sanders also contributes the effectiveness of the active learning style to the faculty's "team approach" and their ability to "connect their framework and case studies across the curriculum."

In addition to the detailed curricular structure, the program fosters critical thinking and analysis by requiring each student to complete a "Synthesis Project." The purpose of the project is to "teach students how to develop and

implement inquiry into a narrowly defined topic of relevance.” Beyond appreciating the benefits of understanding how to conduct research, the faculty hope students value the ability “to integrate new information with previous knowledge.” The synthesis project combined with an interactive teaching environment fosters the integration of the department’s motor control framework. The highly structured curriculum is a focal point for the faculty.

### Faculty

The department has 21 full-time equivalents that are occupied by 27 faculty members who are either full- or part-time. More than half of the current staff have completed a post professional doctorate while nine members are currently engaged in clinical practice. Program documents described the faculty as “committed to excellence in teaching, research, and clinical practice.”

Dr. Hayes admits, “By sheer volume, the faculty provide great depth and breadth making the curriculum very strong.” Dr. Sanders believes, “The diversity of teaching and research faculty is a real strength of the program.” The depth creates an opportunity for students to be exposed to “people who have really experienced just about everything in physical therapy.”

The depth of the faculty enables the department to cover all areas of curricular content without having to use faculty from other departments. Dr. Hayes expressed satisfaction that this provides her with “ much more control over the choice of curricular content.” Moreover, it makes possible the department’s ability to implement an extensive motor control framework.

The department also feels a vital component to a successful program is “faculty harmony and unity of purpose.” The adaptation of the motor control framework demonstrates the accord that exists within the program. Dr. Sanders describes a team-oriented teaching approach where many clinical courses involve four to five faculty members. Dr. Hayes also discussed the ability of individual faculty to support others. “We have several different areas where faculty overlap allowing for coverage.” The large size and diversity of the faculty is a program asset.

### Research

The Department’s name indicates the focused approach of human movement research being conducted at Northwestern. Dr. Hayes stressed, “The research emphasis is and always has been on human performance.” She believes the importance of their efforts lies in the fact that they conduct specific research targeted at “discovering changes related to human movement.” To achieve these discoveries, the department has created multiple research laboratories with state of the art equipment.

Multiple laboratories have been developed to help faculty succeed in the goal of finding answers to movement dysfunction. The diverse areas of emphasis include: stroke recovery, balance and falls in the elderly, vestibular rehabilitation, biomechanical impact on movement, and the brains relationship to human movement. Each one of these labs is equipped with a significant amount of equipment that provides the researcher with extensive data. To maintain the

machinery, the department has hired a full-time engineer to provide technical support.

Although the research laboratories are impressive and offer a fair amount of research productivity, not all of the faculty are engaged in human motor performance analysis. Several faculty members are interested in clinical outcomes, while a third group works to analyze the educational and professional aspects of physical therapy. The commonalities among these groups have led to the development of research clusters within the department. Dr. Sanders described three main groups. “We have a biomechanical, an applied clinical research, and an educational cluster. “ She points out, “The clusters help individual faculty to express ideas within a smaller group of faculty receiving appropriate feedback.” She believes this type of approach fosters “faculty development and enrichment,” especially considering the size of the department.

As expressed in the Department’s mission, the goal of the program’s research efforts is to advance the level of knowledge within the physical therapy profession. The cohesive nature found between the curriculum and faculty research allows for the opportunity to “introduce new findings into the classroom that have not been published yet, enabling graduates to be ahead of the game.”

The “Synthesis Project,” introduced early, requires students to formulate a hypothesis or proposition in an area of interest. Data are then collected, analyzed and presented both orally and in written format. Students can also prepare the information in manuscript format for potential publication. Upon completion, students have developed the tools to integrate research into clinical practice.

## Facilities

The Northwestern Physical Therapy Department is located on Michigan Avenue in downtown Chicago. The program moved to this location approximately twelve years ago from its former home in the Rehabilitation Institute of Chicago (RIC). The current location was specifically designed to meet the needs of a large interactive program; consequently the university acquired 35,000 square feet occupying two whole floors.

The eleventh floor houses the faculty offices and administration as well as several different research laboratories. The seventh floor is the main teaching facility and is characterized as “very teachable and flexible.” There is one main lecture room that accommodates over sixty students and contains advanced audio/visual equipment enabling faculty to use any type of electronic medium. Two large laboratory classrooms exist on either end of the floor and contain various pieces of physical therapy equipment. The unique aspect of these two rooms is their ability to be adapted to smaller sizes. Each of these two large rooms can be subdivided into four smaller lab spaces for a total of eight different rooms. This provides the faculty with “flexibility” in their curricular design.

Overall, the faculty consider Northwestern’s facilities as “spacious and state of the art.” Although the classroom size is immense, the program still has enough space to accommodate all of the equipment to effectively operate eight different research laboratories. There is a small amount of residual space left to the students, an eating area and computer terminals are found in a small room near

the laboratory classrooms. Overall, the department has efficient and effective space for conducting all of their activities.

### Curriculum

The didactic curriculum at Northwestern is subdivided into three different areas: basic science, clinical management, and professional development. Program documents state, "Movement science lies at the core of the curriculum and is incorporated throughout the basic science and clinical management course work." The emphasis on professional development is explored in the third component, which is also spread across the curriculum: Together, these three elements make up 92 credits, which is the required amount for graduation.

In addition to the didactic course work, students complete 32 weeks of clinical internships prior to graduation. The faculty believe constant patient interaction during the educational process leads to strong therapeutic knowledge and thus have woven these exposures throughout the curriculum. The program defines its clinical patient involvement as "substantial and extremely important."

Management classes are designed to look at "primary problems," such as motor cortex injuries, asking students to apply learned principles across the lifespan. In addition, these courses foster the ability of the students to benefit from the faculty's diversity with laboratory classes taught by four to five different professors. During any trimester, laboratory groups rotate between professors, allowing each student to learn from and be observed by each lab instructor enriching their overall experience. Dr. Sanders thinks diversity adds to the overall

education courses but recognizes the limitations associated with consistency and grading. The department, overall, emphasizes the nature of the curriculum as a student recruitment tool.

### Student Recruitment

While discussing the faculty, Dr. Hayes pointed out that “a major asset of any good program is the student body.” She stressed the belief that quality graduates attract better and better applicants who in turn elevate the program’s standards. Dr. Sanders agreed noting, “Our applicant pool continues to remain strong.” Dr. Hayes also suggested drawing the top students enables the faculty to “do great things,” by raising the level of the DPT education.

When recruiting students, the department is looking for individuals with solid academic records. However, Dr. Hayes indicated that in addition to academic success, the program is also assessing an applicant’s ability to handle stress. The program’s rigorous nature requires that the students be self-motivated under pressure. Dr. Sanders described the admissions process as evaluating, “the whole person” and not just his/her academic record. She explained that the department requires applicants to complete a questionnaire that reveals “who the applicant is as a person and what they understand about physical therapy.”

In addition to individual traits, the admission process is mindful of class diversity. Dr. Hayes clarified, “The program is looking for balance within each class” citing, among other things, ethnicity, experience, and geographical



location. This diversity adds depth to the student body and educational experience.

The faculty have done away with the interview process; Dr Hayes stated, "The faculty believe it to be a waste of time" citing the main problem as a lack of group diversity in students who were accepted into the program. In her opinion, faculty tended to select students with similar characteristics resulting in less diversity. The elimination of the interview process, however, prevents students from viewing the program and meeting the faculty. Consequently, the department has implemented an open house. The process is a two-day event where students have an opportunity to sit in on a class, meet with faculty and students, ask questions, and tour the facilities. The department also invites family members to attend one of the days, providing them with a chance to ask questions as well.

In addition to the open house, the faculty attend career fairs and visit other campuses to promote the program. Dr. Sanders suggested that recent discussions have indicated an interest in targeting specific undergraduate programs that produce strong students, especially in the area of biomedical engineering. Another important aspect of recruitment is the program's website. Dr. Hayes believes the website is an extremely valuable tool for student recruitment. She notes, "Students today want quick information and easy access to materials." She further explained that over 75% of applicants are using the online admissions process. In contrast, Dr. Sanders does not believe the website to be a crucial factor with admissions, "I think the website is important but not number one." Instead she believes that two other factors have a greater impact

on students. First, she concludes that the best sales people are the program's alumni, since they demonstrate everyday the value of a Northwestern education. Second, the program's US News ranking, she suggests, has a stronger impact on students than the internet site.

Northwestern finds itself in competition for top students with Washington University in St. Louis. Dr. Hayes describes the two programs as "very similar in cost and a lot alike in many other ways." In addition to Washington University, Northwestern also competes with USC, Iowa, Emory, and Duke. One of the most common competitors is the University of Illinois-Chicago. Dr Hayes admits it's hard to compete against their cost differential.

#### Cost

The physical therapy department is 100% tuition driven resulting in a higher cost than most public and some private institutions. Currently, each trimester costs students approximately \$10,000 with a final total of \$70,000 in tuition. Add the high cost of housing and living expenses in Chicago and it is no wonder Dr. Hayes believes "cost is a huge limitation."

To help combat this problem, the program has chosen to limit the overall length of the curriculum. Dr. Hayes suggested, "We are trying to be as fiscally responsible for the students [as possible]." With the transition to the DPT degree, the faculty added coursework and information but refused to increase the number of months, helping to limit the overall expense for the student. Dr. Sanders explained, "We extended time within different trimesters to better accommodate

the changes without increasing the cost for the student.” While trying to remain competitive, Dr. Hayes realizes that students must be made aware the “rigor and intensity of the program.” As a consequence of the cost, financial advisors are a regular part of the admissions process, helping to solve funding issues for applicants.

### Unique Features

The most unique aspect of the program is the single framework that governs curricular design; especially when you consider that 21 faculty members have all agreed on the use of this principle throughout. While some might have been skeptical, licensure exam performance has resulted in an average first-time passing rate of 95%.

The attention to the curriculum and fiscal responsibility has eliminated extra experiences for students. Dr. Hayes points out, “It’s a short program,” and therefore, “we don’t have a lot of extra stuff.” Many other programs focus on activities, such as service learning, but Northwestern believes the reduced time benefit outweighs the participation in educational outreach.

### Environment

The Department’s location on Michigan Avenue in Chicago’s “Magnificent Mile” provides a lasting impression of a school encased within the urban business world. Dr. Hayes believes the location is a positive force for those applicants who desire a city lifestyle. Chicago is home to a wealth of attractions

that are not often found in one location. These attractions, coupled with an abundance of housing and inexpensive transportation, create an intriguing environment for many applicants. The location, however, is not without limitations; the high cost of living can be a deterrent. Couple that with high tuition rates and students might think twice about attending Northwestern.

The program is housed within the school's Department of Medicine, but the physical surroundings do not represent a traditional medical environment. As a consequence, the program and its students do not have a strong association with other medical professionals. In addition, Dr. Hayes pointed out, "The program does not have a clinic or medical center in which the faculty can practice." The city itself is home to six different medical schools and multiple medical centers, but the program does not have an extensive relationship with any of these facilities limiting student exposure. While that may be a limitation, Dr. Sanders expressed her belief that the program "has a good relationship with the community," noting its involvement with the program as lab assistants, panel guests, and continuing education.

Another area of discussion that arose with the faculty was classroom environment. The department admits 60 students per year for a DPT track that culminates in 27 months. Many programs today average 3 years or thirty-six months to complete, and while the program boasts ample space and equipment; the level of stress felt by the students at times appears to be overwhelming. Dr. Sanders stated, "One of our biggest limitations is student stress; the days and weeks are intense relative to the length of the program." She also feels that the

tension in the student body carries over to the faculty, making the environment challenging. Dr. Hayes admitted, "We make students aware up front that this is a challenging program," hoping students with personal characteristics suited to the environment will choose to come to Northwestern.

### Future Planning

The department finds itself among the best in the country because of a committed approach to teaching and research. Dr. Sanders expressed the faculty attitude in the following way. "We recognize there is a better way and that the better way will make us more excellent." She also added, "The commitment to excellence pervades everything that we do at Northwestern." This is exemplified by a desire to continue to implement curricular reform. Faculty interviewed mentioned the curriculum and its foundation as the main strength of the program. As a consequence, the faculty consider curricular enhancement to be one of the most important aspects of future growth. Dr. Sanders went so far as to indicate a need to "produce a stronger foundation framework for the curriculum." In addition to the framework, the faculty are very excited about establishing a strong case-based approach incorporating consistent problems across the curriculum.

Dr. Hayes admits that part of the pressure to continue to improve comes from the medical school. She stated, "The Dean wants us to be number one in the country," referring to US News's rankings for physical therapy education programs. She admits that the standings are based largely on visibility at national

conferences and in publications. As such, the program will continue to maintain adequate representation to demonstrate its productivity and effectiveness.

Beyond visibility, Dr. Sanders believes the program will sustain its reputation by continuing to produce excellent therapists. She cited “alumni performance” as a main ingredient to overall effectiveness. Closely related to student outcomes is an ability to “stay on top of what is really happening” referring to the faculty’s ability to monitor the healthcare world and make changes whenever and wherever needed.

### Summary

The Northwestern Department of Physical Therapy has created a unique learning environment by creating a motor control framework that sets the foundation for the curriculum. The faculty’s size and expertise appears to yield a successful implementation of this educational foundation as well as a dedication to research outcomes targeted at helping improve human motor function. The facilities provide an environment that foster easy translation of the curricular design and research objectives. Program cost and curricular intensity yield to limitations effecting student performance. Overall, the dynamic Chicago environment appears to be an appropriate backdrop for this unique and effective program.

## CHAPTER 11

### UNIVERSITY OF IOWA

The University of Iowa is a public, research extensive university located in Iowa City, Iowa. The Graduate Program in Physical Therapy and Rehabilitation Science is a part of the Division of Associated Medical Sciences, a component of the College of Medicine. The program is the only public, Board of Regents approved physical therapy program in the state of Iowa and is located on the University of Iowa Health Sciences Campus. Each summer, thirty-six graduate students are enrolled in a two and a half year, entry-level doctorate in physical therapy (DPT). In addition to the DPT program, the department also offers an advanced master's degree in physical therapy and a PhD in Physical Rehabilitation Science. The following faculty, Dr. David Nielsen and Dr. Karen Maluf, were interviewed for the study.

The Graduate Program in Physical Therapy was founded in 1942. At that time the department offered a certificate in physical therapy, which was awarded for the first time in 1943. This clinical degree was not altered until 1986 when the University adopted the Master's of Physical Therapy (MPT). In contrast, the faculty designed an advanced Master's of Arts (MA) degree for post entry-level students in 1946. This program was designed for therapists who wanted to pursue a research-oriented degree. This concept was further expanded when the

department, in conjunction with the Department of Exercise Science, offered a PhD program in 1972. Historically, the department developed and implemented postgraduate educational degrees prior to 1986 that reflected a far more advanced research degree than clinical degree.

In 1998 the Iowa Board of Regents approved an independent PhD program in Physical Therapy supporting the development of new faculty. Most recently, the clinical tract was converted to the DPT in 2002 marking the end of the entry-level master's as well as the advance master's degrees, which allowed the faculty to concentrate their efforts on the DPT and PhD programs.

#### Departmental Structure

The entry-level DPT program generates clinical therapists who are capable of providing high quality health care. The intent of the DPT program is to populate the state of Iowa with well-trained physical therapists. Dr. David Nielsen suggests, "Historically the state retains about 50% of our graduates and probably [more] than 50% of the practicing therapists are Iowa graduates."

In addition, the department offers a PhD in Rehabilitative Sciences with the objective of "increasing the student's knowledge and problem-solving ability, especially in the areas of prevention, evaluation, and treatment of disability." The desired outcome is to generate graduates who are prepared to assume a role within academia. The PhD is organized around three specialty areas: cardiopulmonary, musculoskeletal, and neuromuscular tracts. The faculty believe that the multi-level curriculum (DPT and PhD) are "mutually beneficial." All of the



PhD students serve as teaching assistants, “enriching the learning experience of the DPT students.”

### Mission

The global mission of the Graduate Program in Physical Therapy at the University of Iowa is to strive for “excellence in teaching, research, and clinical services.” This statement identifies the three traditional expectations of most university faculty but does not address the expected outcomes for the clinical component of the program.

In contrast, the entry-level DPT program has a more specific objective as outlined in the following mission statement:

“We prepare our graduates to examine, evaluate, treat, and prevent impairments, functional limitations, and disabilities; to maintain and promote fitness, health and quality of life; and to ensure availability, accessibility, and excellence in the delivery of physical therapy services.”

The program’s documents also address the need to “prepare graduates to assume leadership roles in prevention and health maintenance, rehabilitation services, and professional and community organizations.” Overall, these statements describe very specific and yet broad ranging goals. Dr. Nielsen summarized these statements: “Our mission is to graduate the best clinician healthcare provider” reflecting many of the characteristics described in their documents. Following more discussion, he synthesized the program’s entry-level graduate expectation as an “independent, autonomous, doctoral-level,

practitioner.” Further discussion and research reveal this outcome as the centerpiece for the design of the DPT program.

Dr. Katrina Maluf reiterated that the goal of the program is to produce “doctorally trained clinicians” referring not only to their clinical competence but also their research knowledge. She was quick to point out that this does not mean DPT students should be researchers but the faculty believe they must be excellent “consumers of research.”

While the DPT is the program’s “primary focus” the faculty identified two other specific objectives that relate to the global mission. First, the department has developed a PhD program in physical rehabilitation science for the purpose of producing physical therapy faculty who will provide a much needed service to the profession. This advanced degree is complemented by their second endeavor which is a “strong research mission,” both of which help to support the educational process of the entry-level students.

### Educational Philosophy

To develop an “independent, autonomous, doctoral-level practitioner,” the department identified key components, such as independence, autonomy, clinical exposure, and interdisciplinary focus, that are woven throughout the program. A ‘doctoral-level’ education involves a curriculum that is current with today’s theoretical practice. The underlining strategy for implementation of this philosophy involves an “integration of relevant clinical practice and research.” To provide such an integration, the department has assembled an eclectic group of

faculty that have clinical and research expertise in different areas, which provides students with a diverse education. Dr. Maluf states, "The faculty are composed of both people who are active in the clinic and people who are active in research"; this provides students with "knowledge from a clinical viewpoint and a research viewpoint."

"Independence" suggests that graduates have an entry-level foundation and the ability and understanding of how to maintain their independence. To develop this intuitive nature, the department believes students need "to be exposed to the research process." In fact, Dr Maluf felt it was essential for today's DPT student to be exposed to ongoing research. She reports faculty are implementing new knowledge from research findings into their classroom enabling students to see the value in understanding current research findings and its impact on therapeutic activity. Dr Nielsen took this a step further by suggesting, "Actual involvement as opposed to just exposure will make students good consumers of research." Exposure to this process helps to establish an appreciation for research evidence that validates or updates their approach to clinical practice.

Autonomy is derived through the demonstration of effective clinical expertise. The faculty have developed an advanced curriculum that represents a contemporary approach to physical therapy education. Dr. Nielsen reported that the "curriculum was changed considerably," reflecting a long process of evaluation from multiple resources within and outside of the program. The end product is a comprehensive education that produces a "generalist" who is prepared to work in any environment.

As with many programs, the Iowa Physical Therapy Program has developed an extensive clinical internship component of the curriculum that solidifies learned didactic material. Dr. Maluf believes the program's ability to provide "a wide variety of clinical experiences" enables students to be versed in many different areas, further supporting their comprehensive educational mission.

The phrase, "Independent, autonomous, doctoral practitioner," infers an ability to effectively interact with other healthcare providers. To achieve this aspect, the department has taken advantage of its environment relative to its location within the Health Science Campus. The proximity and access to other medical professionals has allowed the program to institute interdisciplinary activities. Dr. Nielsen suggests, "Interdisciplinary interface is a strong emphasis and a common denominator throughout [the curriculum]." These situations provide physical therapy students' opportunities to effectively communicate with doctors and nurses.

### Faculty

The Physical Therapy Faculty are comprised of seven full-time PhD teaching researchers. All of the full time faculty are active in research, producing multiple publications within the past several years. In addition, the program has at least seven part-time faculty who provide clinical expertise in many of the classes and labs while continuing to remain engaged in clinical practice. All of the faculty within the department are physical therapists, and adjunct faculty working in the Iowa Hospitals provide additional classroom and laboratory help.

When asked about the strengths of the program, Dr. Nielsen pointed to the faculty and especially their diversity. He stated, "We have a pretty good mixture of faculty who possess diverse expertise," which enables the program to provide strong scientific as well as clinical perspectives. Dr. Maluf echoed similar sentiments, "The faculty are highly dynamic" providing clinical and research expertise in multiple areas. This mix of research and clinical faculty provide a foundation for a strong curriculum but represents only one component of their effectiveness.

Dr. Maluf suggests that a second factor resides in their interactions, "I'd call it, very collegial." She talks about how the faculty work together to alter and improve the curriculum on a regular basis. She states, "The faculty get along, they're all very interested in the health of the program." The diversity and professional commitment creates a very strong educational philosophy.

### Research

Understanding and implementing scientific knowledge within the DPT curriculum is part of the Iowa philosophy, which is further exemplified by the faculty's ongoing research endeavors. As stated earlier, each of the core PhD faculty is involved in research activity and possesses his/her own labs. Dr. Law operates a Neuromuscular Biomechanics Laboratory that focuses on mathematical models for paralyzed muscle as well as pain associated with motor function. Dr. Maluf has an Applied Neuromuscular Physiology Laboratory where she studies the mechanisms of fatigue and overuse injuries in the workplace. Dr

Shields also has a neuromuscular laboratory, which analyzes motor control and fatigue in an attempt to understand the neurobiology of fatigue in normal and paralyzed muscle.

The program also has several faculty engaged in biomechanics related investigations. Dr. William's lab, Musculoskeletal Biomechanics and Sports Medicine Research, focuses on neuromuscular function and joint stability. Dr. Yack's Applied Biomechanics Lab examines the kinematic and kinetic measures of gait and balance. In addition to these laboratories, Dr. Nielson operates the Cardiopulmonary Research Lab focusing on body composition analysis, gait efficiency, and energy cost assessments related to amputees.

One of the global missions of the program is to be "excellent in research," assisting the physical therapy community in its quest for strong evidence-based practice. The amount of resources devoted to their research infrastructure demonstrates a strong commitment to this goal. In addition, the development of the PhD program has furthered the faculty's research efforts and productivity.

This emphasis on scientific investigation also directly impacts the DPT students. Program documentation states, "As a consequence of the composition and subsequent philosophy of our faculty, there is a strong program emphasis on the integration and application of scientific principles." In addition, documents also suggest that DPT students will have a "strong appreciation for scientific inquiry and an evidence-based approach to practice." This is achieved several different ways.

First, students are provided with immediate access to newly discovered knowledge from anyone of the seven Iowa laboratories. Dr. Maluf believes the value of this approach will “hopefully make the students learn to integrate research into their clinical practice” and more importantly “value it.”

Second, all DPT students “are required to participate in a group research project”; specifically they are responsible for “developing a proposal, collecting data, analyzing it, and presenting a poster at the annual research day.” Students choose topics provided by the faculty, which are in line with faculty laboratory agendas. The overall goal, as Dr. Nielsen suggests, “is to provide students with exposure to actual involvement of research.” Philosophically, the faculty believe the best way for students to effectively evaluate current research findings is to understand first hand how to conduct an investigative inquiry.

The third approach to research requires graduates to relate evidence to clinical practice that supports the treatment of a specific patient. This capstone experience follows the final clinical internship in which students present a “patient case study” to faculty, the community, and other healthcare practitioners. Within this format, students are required to demonstrate a thorough knowledge of their patients including a detailed understanding of the evidence that would support their intervention plans.

### Facilities

When asked to describe the strengths of the program interviewees alluded to the program’s facilities as a significant asset. The Graduate Program in Physical

Therapy is located on the Health Science Campus in the Medical Education Building. The building was completely renovated in the summer of 2002 and offers multiple advantages. It is located near the center of the Health Science Campus, adjacent to the Hardin Medical Library, the Medical Education and Biomedical Research Facility, and University of Iowa Hospital. The central location offers faculty easy access to the medical school, research facilities, and the library.

The department occupies a portion of the first floor and lower floor of the Medical Education Building. The first floor contains the faculty and staff offices that are spacious and equipped with all of the latest technology. In addition, the first floor contains workrooms for staff and a reception area for guests.

The lower level includes all of the teaching areas and the faculty research laboratories. The program has two dedicated teaching rooms. The larger of the two rooms is a lecture-based design with plinths that convert from desk to treatment tables. This room also contains all of the latest electronic equipment for lecture purposes. The second room has more of a clinical feel to it. It is wider than it is deep and contains ten separate treatment areas that can be isolated with curtains. This second treatment based room contains many of the different forms of equipment found inside most physical therapy clinics, such as a hydroculator, weights, and whirlpool machines. This room is also wired with electronic equipment to provide faculty with the ability to provide educational information in different ways.



Beyond the two lecture rooms, the department also has a large faculty conference room and a smaller conference room that is often used for teaching students in the PhD program. In addition to these two smaller rooms, the program has a student lounge that contains a sitting area, a small library comprised of physical therapy texts and journals, workstations for PhD students, and a study area. Overall, it is a large room that provides a nice place for students to congregate during the semester.

Each of the PhD faculty have his/her own laboratory that have state of the art equipment. Five of the seven research faculty have lab space in the Medical Education Building while the other two have labs in the Hospital. In addition, to the other faculty mentioned earlier, the program has hired a full-time laboratory technician who services all of the laboratory equipment.

Although the amount of space occupied by the department is quit vast, the overall dedicated teaching space is limited. This situation has created some difficulty with class schedules. Dr. Maluf suggested the program is unable to expand due to a lack of teaching space.

The Department also has access to the classrooms in the Medical Education Research Facility adjacent to the Medical Education Building. Dr. Nielsen revealed that this building has “clinical suites with individual exam rooms, video taping capability, and state of the art equipment.” The facility allows students to practice different components of their patient examinations and evaluate their performance via recorded video. Overall the academic and research facilities at Iowa are impressive.

## Curriculum

The curriculum is broken up over a two and half year period and underwent considerable change when the program moved to the DPT degree. Dr. Nielsen state, "We went from 67 semester hours to 102 semester hours introducing new courses, such as pharmacology and radiology, as well as extending the clinical education component." Students complete a more science-oriented first year followed by an integrated approach in the second year. The program uses case study methodology to integrate material and work with critical thinking skills.

The clinical component of the curriculum begins in the summer of the first year. Their initial affiliation requires all students to attend an acute hospital setting to maximize first-year education. Dr. Maluf stated, "We try to tailor the clinical requirements to what they've learned and give them a chance to practice those skills." Following this experience, students are free to choose from many different alternatives. Dr. Neilsen feels that the clinical education component of the curriculum is a strength because students can gain critical hands-on experience in "lots of locations all across the country." Although Dr. Maluf believes the program has a "wide variety of clinical sites" she does admit that sometimes finding that variety in different settings in Iowa can be difficult. Overall, the program has between 180 to 200 clinical affiliations from which its students can choose.

Although the mission of the program is to serve the state of Iowa, no reference was made regarding rural clinical affiliations. Considering Iowa has a large rural population, the faculty did not emphasize a need to develop specific

skills for rural healthcare. The research extensive mission appears to have a stronger influence on the department's directives.

Faculty are concerned about the density of the curriculum. Dr. Nielsen stated that the program had almost doubled the number of credit hours without adding any additional semesters. Dr. Maluf described the curriculum as "very dense" and "not expandable" because of a lack of teaching space. She goes on to point out that students have "voiced concern" and "definitely get fatigued by the end of each semester." Although the faculty acknowledge the problem, they currently do not have a solution.

#### Student Recruitment

As a public program, Iowa has a strong relationship with in-state students with a 75% residential admission rate over the past several years. Dr. Nielsen stated, "Of the thirty-six students admitted each summer approximately 8 or 9 are non-residents." Regardless of their in-state status, Dr. Maluf says that the program is looking for "academic performance, commitment to the profession, and communication skills in its applicants." The faculty believe these three characteristics are key indicators of success and go a long way toward defining a "high quality student," which as Dr. Maluf indicates, is not "always the highest academically prepared student." As a consequence, the "interview portion of the admission process is weighted pretty heavily."

An investment in quality students results in strong alumni who represent the program's product on a daily basis. Dr. Nielsen believes that students who have

been exposed to physical therapy across the state experience first hand the quality of care provided by Iowa graduates. He knows of “nobody who doesn’t believe Iowa is a great place (academically).” Dr Maluf added, “We get good feedback on our graduate’s performance from clinicians.” As a young faculty member at Iowa, she is inspired by the “huge sense of community” as demonstrated by the large reunions and constant involvement of alumni. She has noticed that students leaving the program are “proud to be Iowa graduates.” The quality and commitment of the graduates is a strong recruiting tool for the program.

Dr. Nielsen also admits that the interview process is “a good way for us to market our program” providing applicants with an opportunity to appreciate the department’s distinguishing characteristics. One of the most common questions during the process is “why University of Iowa,” which as Dr. Maluf points out, “gives us an opportunity to talk to them about some of the unique features of our program.” Applicants are brought in for “interviews, tour the campus, have lunch with faculty, and are treated to a wheelchair-challenge community outreach program.” Dr. Nielsen describes the experience as “mutually beneficial” allowing the program to learn more about the students while “orientating” them to the philosophy of the program. In addition to the interview process, several different faculty provide formal and informal presentations about the program to potential applicants. The department feels strongly that attracting top students requires a focused requirement effort.

Outside of the interview process, the program uses print materials and a website to advertise to applicants. Dr. Neilsen believes it is “critical” to maintain an informative website to attract students. He admits that this is an area of weakness for the program and believes more investment in the near future is warranted. “One of our goals is to upgrade that webpage.” The program also provides numerous printed brochures that describe the DPT and PhD curriculums.

Iowa’s natural rivals would be other in-state programs, which do not exist. However, the state does have three other private programs: Des Moines University, St. Ambrose University, and Platt College. These institutions do offer some competition for in-state students. The University does get a “respectful number of out-of-state applicants” who also frequently apply to Washington University (St. Louis) and Northwestern. Iowa’s out-of-state tuition is equivalent to the cost of many private schools making it difficult to attract these students.

#### Cost

The tuition for the program varies; residents of Iowa pay \$33,130 for the two and half year program while nonresidents pay \$72,345, more than twice the in-state amount. Beyond tuition, students must also pay for books, university fees, equipment, housing, and other living expenses. The program’s tuition rate is set by the Iowa Board of Regents and thus is not controlled by the program. Dr. Nielsen mentioned an added fee applied to the overall cost of the program that goes directly to the department. Financially, the program is state-funded,

suggesting the program works from an operational budget. Dr. Nielsen stated, “the budget covers the cost of the faculty as well as the day-to-day operations of the department.” The additional fees are used to support the program’s efforts to improve equipment and research facilities.

The tuition rate for this public program falls within the average cost for most public physical therapy schools across the country. In contrast, \$72,000 nonresident rate is above the national average for private education. This elevated out-of-state fee would seem to make it difficult for Iowa to attract nonresidents to the program.

Although the high rate might be a detractor for some, resident fees are a positive influence on admissions. Dr. Maluf stated, “Survey data following admissions reveals the number one reason that students choose Iowa is because of cost.” Reputation is a close second she says; therefore combining the two adds significant strength to their recruitment efforts.

### Unique Features

The Iowa Graduate Program in Physical Therapy is supported not only by the faculty but also by the students enrolled in the PhD program. Each of the PhD students are required to assist within the DPT curriculum and thus have an influence on the educational process of these new therapists. Dr. Nielsen suggests, “These are young, dynamic, individuals who are eager to get into academia.” They create a “healthy interchange” between entry-level and advanced students. Dr. Maluf adds, “The DPT students work side by side with

PhD students, I don't know if that is unique but this program has had it for over 20 years, and so it's a well-oiled partnership." Although this is not unique to academia, most DPT programs in the country do not have a PhD program and therefore this level of educational influence does not exist in most places.

In addition to the DPT-PhD interaction, Dr. Maluf believes the faculty and student interaction is unique as well. The program has adopted a philosophy of "unlimited access" to faculty. Dr Maluf stated, "A lot of times (at other universities) PhD faculty are off doing their own thing and don't have a lot of interaction with DPT students, in this program that is not true at all." Entry-level students are able to interact with the entire faculty and participate in research activities related to their expertise. Faculty also provide mentorship outside of the classroom in all areas of professional growth.

Beyond these interactions, one other aspect of the program stood out. The Medical Research Building was designed for all disciplines and multiple uses. The Physical therapy program has used a portion of the building to enhance its students' communication skills. Several rooms contain video cameras and recorders that allow students to watch video feedback from patient interactions. Although the video assessment and evaluation is not unique, the design and implementation of the building suggests forward thinking. Moreover, the university has "a well established program with paid volunteers who come in and serve as simulated patients," which provides students with practice models for study. This enables the program to provide a more comprehensive case-based learning approach.

## Environment

The University of Iowa is located in Iowa City, a “college town” with approximately 70,000 permanent residents. The cost of living is low compared to a large city but high relative to small rural towns throughout Iowa. Part of the attraction of Iowa for Dr. Maluf was its potential for raising a family; she believes, “This is a great place to raise kids.” She also noted the proximity to larger cities like Chicago as resources for metropolitan life. Dr. Neilsen agreed, “Iowa City is fantastic, I have raised four kids here.” He also suggested that the town offers a wide variety of outdoor activities as well as cultural events. Although activities might be abundant, the city is small and is dominated by the University. The faculty agreed that one negative is the winter climate; the city receives an annual snow fall of 31.6 inches per year that coupled with the winter climate may deter some from applying.

While there are pros and cons related to Iowa City, there is no mistaking the significance of the Health Science Campus. At the center of this site is the University of Iowa Hospitals and Clinics, built in 1928; this medical structure is “one of the largest teaching hospitals in the country.” Adjacent to the main hospital are more than ten other buildings, each with specific purposes related to the health sciences including pharmacy, nursing, medical education, physical therapy, and more. Each is within walking distance of another and all are connected via underground tunnels for easy access during the winter months. The environment provides “students with access to almost unlimited health science resources.” For example, the library offers easy access to medical



research while the presence of a variety of healthcare professions offers many opportunities for “interdisciplinary communication.” This enables the physical therapy program to have success with its autonomous practice focus. The level-one trauma center affords faculty the ability to expose DPT students to actual patient care as well as resources for conducting clinical research.

When asked to discuss the strengths of the Iowa Program, Dr. Nielsen first thought was the medical setting, “I would think that our environment being located in a medical education center.” Dr Maluf echoed similar sentiments, “Being in a medical center is certainly a strength, I think we have access to a variety of patient populations for both training and research.”

The well-conceived outside environment (Medical Campus) offers strong potential for professional growth; the inside environment (the DPT classroom) has also been designed with a specific intent. The average class size (36) offers excellent student to faculty ratios, which allows the teachers to “assess their (students) abilities in different ways.” Dr. Maluf suggests, “You get to know the students better” while allowing faculty different evaluation options such as written assignments and group projects that are not feasible with a large class size. In addition, faculty have the ability to mentor student driven research projects.

### Future Planning

The goal for any program is to continue to provide an excellent education for its students while evolving with the changing healthcare environment. The Iowa Physical Therapy Program believes one of the most important aspects of

sustaining its reputation is “recruiting outstanding students.” As revealed earlier, Iowa believes one of its best recruiting tools is its alumni. “They are the ones practicing and meeting potential students throughout Iowa.” Their performance will directly impact the program’s reputation.

Beyond student recruitment, Dr. Neilsen believes the program has to continue with its philosophy of curricular change. The program has adopted a philosophy of assessing and implementing changes to the curriculum based upon student and faculty feedback. Dr. Maluf reported, “We survey a lot and we make changes based upon student feedback “ with potential changes including expanding the curriculum from two and a half to three years and implementing residency programs. Overall, the faculty want to “keep the standards high,” which includes students recruitment, curricular education, and clinical internship experiences. Dr Maluf summarized “We need to continue to assess the needs of the clinical world and produce clinicians that meet those needs.”

### Summary

The Iowa Graduate Program in Physical Therapy’s mission is to produce an “independent, autonomous, doctoral-level practitioner.” To accomplish this task, the program has designed a curriculum that provides students with a strong educational foundation, multiple opportunities for interdisciplinary interaction, and an appreciation for evidence-based practice and clinical research. The faculty have also taken advantage of their facilities and environment to promote a strong interdisciplinary educational approach to DPT training. Overall, the program

recognized a need to support the physical therapy community through a commitment in clinical research. Its reputation and future progress is rooted in its strong collegial environment and constant program assessment.

## CHAPTER 12

### SUMMARY OF CASES

The previous eight chapters revealed key attributes found within each physical therapy program. This section compares and contrasts each characteristic across all eight institutions. In the remaining chapters, the researcher interprets the findings using a competitive advantage framework.

The eight cases were originally subdivided into four public and four private institutions, in part, to expose potential variances attributed to campus type. Universities are also defined by their Carnegie Classification, which outlines the general mission of the school. Three of the four private programs, Northwestern University, the University of Southern California (USC), and the University of Miami (UM) are located on research extensive campuses while the fourth, Creighton University, is classified as a master's college and university. Likewise, two of the four public programs, the University of Illinois-Chicago (UIC) and the University of Iowa are research extensive institutions. Northern Arizona University (NAU) is described as research intensive and the University of Nebraska Medical Center (UNMC) falls under the classification of specialized medical campus. The six research institutions and UNMC require faculty to maintain a high level of scholarly productivity. Creighton is the only institution in a setting where teaching has a stronger emphasis.

Each program was also selected relative to its position within the top 15% of existing programs. Currently, USC is ranked first, University of Iowa is tied for fifth, Northwestern is tied for tenth with UM, Creighton is tied for sixteenth along with UIC and NAU. UNMC is tied for thirty-first. Current published data acknowledge the existence of 210 accredited physical therapy programs in the US (CAPTE, 2007).

The eight departments represent a group of highly successful physical therapy educational programs. The individual chapters identified twelve discrete components that comprise an organizational foundation for each institution. These characteristics can be merged into four key elements: design, production, marketing, and supportive features.

#### Element One: Design

Program design provides an indication of the direction and overall objective for a department. Each university program contained a foundational structure that supported its mission and educational philosophy.

By virtue of its selection for the study, each department offers the entry-level doctorate in physical therapy (DPT) as their primary clinical degree. Additional courses of study vary across institutions. Northwestern and UNMC have chosen to focus on providing only the entry-level degree while Creighton and NAU have added a transitional DPT to their departments. UIC is the only program to continue to offer an advanced master's degree designed for licensed therapists who were awarded the bachelor's degree.

Several schools have created postgraduate education for physical therapists. The University of Iowa has decided to eliminate the master's curriculum in favor of a PhD in Rehabilitative Science while Miami has implemented a PhD in Physical Therapy. USC offers both a graduate level master's of science degree and postgraduate PhD in Biokinesiology. These two degrees are aimed at developing research scientists capable of educating others about movement dysfunction. UIC offers an interdisciplinary PhD in disability studies.

The departmental mission, constructed by the faculty, establishes goals and objectives that are influenced by the institutional setting. Consequently, they often appear to be very generic. For instance, all of the programs studied have official documents that describe teaching, research or scholarly activity, and service as primary areas of focus. These findings are not unwarranted considering each category is a required expectation for most faculty. More importantly, these global assertions serve to connect the department's mission to the university's objectives but often do not reflect the purpose of the DPT curriculum.

As a result, each program also developed separate objectives for its clinical degree track (the DPT). Although chronicled in various terms, each school strives to produce a broad-based, independent practitioner. UNMC, NAU, and Miami describe their approaches as providing a "generalist education" while Northwestern refers to its graduates as "well-rounded." USC, Creighton, and Iowa, expect to produce "autonomous practitioners capable of providing care in any environment." The one exception is UIC whose approach is less clearly

defined referring to graduates who are “valuable members of the healthcare system.” Although these statements reflect one common objective, departments also have a variety of other goals.

Three programs, UIC, NAU, and UNMC, place a strong emphasis on developing leadership skills. NAU describes its educational approach as “student-centered,” committed to developing leadership skills within its graduates. UNMC faculty described a goal of producing a “committed professional” that will assume a leadership role within his/her community while UIC wants to develop graduates who are leaders in patient advocacy and professional responsibility.

The focus on research activity varies across mission statements. Both UNMC and NAU describe a goal of advancing the profession through research while UIC and Northwestern were more adamant about a “strong commitment to scholarship” that translates into a better education for their students. Iowa’s “strong research mission” has similar objectives but ultimately they intend for their students to become “good consumers of research.” USC had the most succinct perspective creating a “coequal” objective of research and education believing “newly discovered information needs to be integrated generating a graduate who is an “expert” in movement science.” Miami takes it one step further suggesting, “Graduate level education requires active participation in research.” Consequently, the program has a faculty and student research mission emphasizing equal contributions from both.

Programs also offered unique perspectives on community and professional obligations. UNMC and Iowa, state institutions, were established to provide physical therapy professionals for their respective states; consequently, their missions reflect this endeavor. Similarly, UIC seeks to develop healthcare providers for the urban city of Chicago. Faculty at all three of these institutions communicated that producing therapists for their state or area is “their primary focus.”

Creighton’s Jesuit foundation provides a very unique mission perspective. The university’s traditions promote a “deep commitment to social responsibility” hoping to instill value and ethics into their students. All of the other programs would suggest equal emphasis, but this approach pervades throughout Creighton. Faculty also discussed a unique emphasis placed on educational leadership. Specifically, as the original architects of the DPT degree, the department aspires to remain a forerunner in the evolution of physical therapy education. Consequently, one of its expectations is to continue to strive toward “educational excellence.”

Departmental mission statements and DPT program objectives were often correlated but most of the institutions described them as separate entities. USC, in contrast, while listing separate objectives, defined an operational environment where education, research, and service are not separate from the educational process of its entry-level students. Their unique approach is reflected in the following statement, “Competent therapists are derived from evolving education



that is supported by clinical research,” suggesting a clinical education requires a dynamic curriculum supported by diverse research.

Three schools, Iowa, Miami, and USC, offer an independent PhD program that seeks to produce teachers and researchers. Their collective mission is to produce the next generation of professors capable of expanding the educational process for physical therapy. While these programs are independent of the DPT curriculum, all three suggest the PhD students greatly enhance the educational process of the entry-level students.

Each program devises a strategy to meet the global themes discussed in its mission. An assessment of these approaches suggests there is more than one way to educate physical therapy students. Two institutions have adopted a movement science foundation as a central educational construct. USC employs a biokinesiology framework while Northwestern has created a curriculum based upon the science of motor control. Both educate graduates through an understanding of human movement dysfunction.

Creighton’s curriculum is also based upon a central theme; however, it reflects a different focus than either USC or Northwestern. Its approach is formulated from a professional education model using a central point of “professional identity.” Subdivisions of this identity represent the different educational aspects of the curriculum including: adaptive competence, clinical reasoning, technical skill, and knowledge.

The remaining programs studied use a standard curricular design offering a science-based first year followed by clinical management coursework in the

second. Variations exist with the type of learning environment applied. Three programs use a case study construct to create an active learning environment. NAU, UIC, and Northwestern discussed the development of detailed patient situations that require students to apply learned material from multiple courses. UNMC, in contrast, provides students with more clinical exposure to supplement classroom materials. Its philosophy reflects the eclectic nature of rural healthcare requiring graduates to have a vast amount of patient exposure. As a consequence, the educational philosophy revolves around matching content hours with the amount of potential practice exposure. UIC combines its case study construct with observational exposure through the use of the on campus medical center.

All of the programs offer educational courses dealing with professional and ethical issues. Three departments emphasized “faculty modeling” as an equally important component to the educational process. Specifically, NAU, UNMC, and Creighton describe in detail a collective faculty appreciation for leadership and professionalism that is nurtured and developed through faculty representation.

Research and its impact on physical therapy practice is an area of concentration for every department. Each aspires to graduate students who appreciate the value of “evidence-based practice.” How this particular attribute is created in students varies across programs. Of the eight programs studied, only Miami and Iowa require students to complete a research project while Creighton has a hybrid approach where students can opt to do a paper or other related project. The remaining five programs (USC, NAU, UIC, Northwestern, and

UNMC) provide students with “exposure to research” either through classroom activities and/or an analysis of the literature but do not require students to formally complete a research project.

#### Element Two: Production

Any organizational success can be partially attributed to the effectiveness and efficiency of the manufacturing process. The primary goal of each of the DPT programs is to generate graduates capable of providing quality healthcare to a variety of patients. Achieving this objective requires faculty, a strong curriculum, and quality students. Production also requires revenue, which is translated to students in the form of cost.

Educational programs do not survive without faculty. Their efforts and dedication to their craft directly influence the quality of the graduate. As a consequence, each program chair interviewed described the faculty as “the primary strength” and often the main reason for the school’s reputation. Additional analysis reveals several other similar characteristics and one obvious difference among the eight schools.

The four private institutions have an average number of 21 full-time faculty with a high of 26 at USC and the low of 16 at Miami. The four public schools have an average of 9 full-time faculty with UNMC the high at 14 and Iowa the low at seven. All eight programs supplement teaching assignments with adjunct and part-time instructors. This disparity in numbers contributes significantly to differences in the number of PhD trained faculty on each staff. Private schools

average 15 PhD trained faculty per staff with USC possessing 26 PhD faculty. Public institutions average 6.5 PhD trained faculty per staff.

One common theme expressed by both public and private intuitions is faculty diversity. Many shared a similar belief that faculty variability produces a broad and deep curriculum. Private programs supported this claim by citing the number of full-time faculty. The large volume of faculty allows departments complete control over curricular content and associated changes. In addition, Creighton alluded to a mixture of experienced academics and junior clinical specialists combining to provide a complete curriculum. USC discussed educational depth by suggesting its extensive faculty contains expertise in every area of physical therapy resulting in an education supplied by experts in their field. The one exception is UNMC, which boasts a staff of 14, enabling it to provide a diverse education based upon faculty size. Similar to Creighton, the chair attributes curricular effectiveness to a mixture of both PhD and clinical faculty.

Public institutions, while smaller in number of faculty, supplement their student's education through adjunct and part-time faculty. Iowa and UIC use clinical adjunct faculty to provide the "hands-on" training while PhD faculty focus more on providing the scientific background. Alternatively, NAU's faculty provide both clinical and scientific perspectives making their jobs more complicated than any of the other seven institutions.

Faculty cohesiveness is one commonly shared theme that appears not to be dependent upon size. Six of the eight programs referenced "collegiality, unity, and/or stability" as hallmarks of their faculty that contributes significantly to its

success. Specifically, Miami, NAU, and Nebraska attribute this togetherness to a core faculty that have been present for more than ten years where as Iowa, UIC, and Northwestern describe a shared philosophical perspective that fosters open communication and support. USC and Creighton did not offer any discussion relative to faculty cohesion; this may be partially attributed to their large faculty size.

Seven of the eight departments have constructed curricula that rely on a strong science-oriented foundation in the first year followed by clinical management coursework. Alternatively, USC provides foundational information in the first semester but proceeds to a focused treatment-oriented approach beginning in the second semester. The courses are subdivided into three separate tracks: musculoskeletal, neuromuscular, and cardiopulmonary. Creighton, NAU, Iowa, and UIC have also adopted a similar track format beginning in the second year. NAU, however, has delineated a fourth track represented by the integumentary system.

A primary focus of several of the departments is to provide an integrative learning environment. This design necessitates students apply learned material in order to solve patient problems. USC, Northwestern, NAU, Iowa, and UIC emphasized "integration" by developing an actual course or requiring out of class projects. Specifically, NAU has instituted a "Grand Practical" application that requires students to demonstrate therapeutic knowledge acquired from all coursework at the end of each semester.

Fewer similarities are found when examining internship requirements; variances include length of time, curricular timing, and number of contacts. Four of the eight programs (Miami, NAU, UNMC, Northwestern) require students to complete 32 to 34 weeks while Iowa has the fewest at 27 weeks. USC, UIC, and Creighton require 43 to 46 weeks of clinical internships prior to graduation.

Philosophically, the scheduling of internships within the curriculum is divided in two groups. USC, UNMC, Creighton, and Northwestern have woven the internships throughout the curriculum requiring students to enroll in four, five or six different classes. Miami, NAU, Iowa, and UIC have the bulk of their internship hours occurring at the end of the program. UIC does use its medical center to provide patient exposure during didactic coursework but overall these programs send students to the clinic after all of their didactic training is complete. These three institutions require students to enroll in three to five internships.

Two of the private universities, USC and Northwestern, as well as one public program, Iowa, discussed the broad number of clinical affiliations options available to students. The variety provides students with different educational opportunities. In contrast, two programs, UNMC and NAU have chosen the opposite approach. Faculty have decided to limit the number of available sites hoping to provide better quality experiences.

Nebraska's mission to support the state necessitates preparing graduates who will accept the challenges of providing care in rural settings. As a consequence, UNMC requires each student to participate in a rural affiliation prior to graduation. No other institution requires a rural affiliation.

Each institution revealed similar feelings about student recruitment especially when discussing the need to recruit “quality applicants.” Miami, USC, and Northwestern believe the curricular intensity must be “matched with high quality students.” NAU and Iowa referred to recruiting high quality students as a “priority.” Creighton suggests high quality students are “strongly associated with program success.” Although there is consensus regarding the need for quality, determining what constitutes a quality applicant varies.

USC, Northwestern, and UIC do not conduct interviews, basing their decisions instead on collected information. Northwestern believes the interview process leads faculty to select individuals like themselves and “away from diversity.” UIC believes an interview process might eliminate “economically challenged” applicants because of travel expenses. In contrast, the other five institutions feel the interview process provides valuable information regarding student selection. Miami discussed dissatisfaction with its one class that was selected without an interview while Iowa and Creighton believe the process to be “invaluable.” In addition, each program suggested that the interview process is an opportunity for their department to market the DPT program.

The financial commitment to attend a physical therapy school varies depending upon the institutional characteristics. Private, tuition-driven universities in this study on average cost students \$81,000 with USC as the high at \$105,000 and Miami the low at \$65,000. In contrast, the public, state-supported programs cost an average of \$30,000 for in-state students while nonresidents pay an average of \$61,000. NAU has the lowest rate of all eight

programs charging \$20,000 for in-state students and \$45,000 for nonresidents. UIC represents the high end of public institutions costing residents \$42,500 and out-of-state students \$70,000.

The price comparisons between private and public institutions reveals a cost differential of almost three to one. Public schools like UIC and Iowa both referred to lower fees as a "significant recruiting advantage." NAU, the least expensive program in the study, felt strongly about not using its cost differential as a marketing tool, citing concerns about perceived diminished value. Each of the private institutions acknowledged that cost was a limiting factor when trying to attract students. As a consequence, Miami and Northwestern have implemented fiscal constraints in an attempt to control cost. Miami offers students block tuition, capping the overall cost at \$65,000. The program is concerned about maintaining a cost to expected salary ratio of one to one. Northwestern, concerned about increased cost with the expansion to the DPT curriculum, has elected to not increase the number of trimesters, thus saving students money. The drawback is added intensity and rigor for the students, but faculty believe the cost benefits are worth it.

In contrast to these two private institutions, Iowa and UIC have increased the price of their programs. Each public university in this study is funded through state allocations, leaving little surplus for added expenses and growth. Consequently, both of these schools have added a cost differential to it tuition. The additional revenue provides financial support to the department, allowing for equipment improvement, laboratory support, and other expenditures. Both



department chairs suggest the differential has led to substantial improvements in working environments.

Nonresident fees create a more level playing field when comparing public and private institutions. Overall, tuition costs between the two types of schools create variances in marketing strategies. Public institutions, for the most part, are focused on attracting students from their respective state. In contrast, private institutions describe a much broader pool of applicants that span the majority of the US. UNMC, while public, has a unique opportunity to provide a percentage of its nonresidents in-state tuition. However, they express apathy when talking about this benefit, leading me to believe they are concerned about whether nonresidents will stay in Nebraska after graduation given the importance they place on supporting the needs of the people of Nebraska.

### Element Three: Marketing

A third component of departmental success deals with advertisements. Successful organizations demonstrate an ability to effectively reach their target audience while identifying and assessing their competitors. Promotional activities include paper brochures, Internet sites, and formal meetings, such as a departmental open house.

All eight programs appreciate the competitive nature of recruitment and believe marketing to be a necessity. All eight programs acknowledged that recruiting has changed over the past fifteen to twenty years. NAU summarized the change by stating, "We did not have to recruit 15 year ago, now we use the

interview time to really sell the program.” USC, Northwestern, and UIC appreciate the lost marketing opportunity that interviews provide and have implemented an “open house” option allowing students to tour and meet faculty.

Many believe alumni are the best marketing tool. NAU and Northwestern consider alumni the best recruiting tool. Others refer to them as a “strong asset” or “very important.” Programs also have other forms of recruitment tools with the most common being brochures. All eight departments have created promotional documents that outline the major selling points. USC and Miami have created DVDs that provide students with a visual representation of the program. One area of importance that provides a difference of opinion is a program’s Internet site. USC, Miami, UNMC, Iowa, and UIC believe the website is very important to student recruitment. Creighton, NAU, and Northwestern appreciate the value but don’t believe it is as critical to their success in attracting students as the others did.

Each program identified several competitors; the private institutions compete for students from across the country. As a consequence, they contend with other private schools naming each other the most. They also believe cost makes it very difficult for them to compete with the public programs. Northwestern admitted difficulty competing for students who had also applied to UIC. The other three public programs, UNMC, Iowa, and NAU enjoy environments where they are the only publicly supported institution within the state. While they admit to competing with private in-state and out-of-state schools, they hold a distinct advantage when recruiting in-state students.

#### Element 4: Supportive Features

Several aspects of each program help to sustain the activities found within the DPT programs. Research activities in each department foster curricular growth while appropriate facilities contribute to a positive learning environment. Several programs have developed unique features that provide additional educational opportunities. Many describe their environment as a key factor for success.

Physical therapy professionals understand advancement of the profession is highly correlated to research productivity. Institutional satisfaction with faculty performance is also heavily tied to research publications and presentations. Accreditation committees evaluate scholarly productivity when determining whether an institution meets the necessary educational requirements. Considering all of these factors, the eight programs evaluated all demonstrate some level of research activity. Variances emerge with organization, operation, and student involvement.

Organizationally, three distinct patterns emerged: the development of a central theme, several clustered themes, or research diversity. USC and Northwestern have created a very specific theme that governs its research activities. In particular, faculty are both engaged in understanding the science of human movement, allowing each faculty member to investigate various aspects of movement dysfunction.

Creighton and UNMC have created several different themes or clusters of research interest. These groupings enable faculty to enhance their productivity and increase their ability to acquire grant support. Northwestern, while primarily

focused on movement science, also has developed two other focused areas of research creating a hybrid philosophy. Miami, Iowa, NAU, and UIC collectively are engaged in a wide variety of endeavors that do not conform to any one theme or cluster. UIC faculty evaluated a focused approach and opted to remain varied to maximize faculty experience and expertise.

Operationally, seven of the eight programs have staffs that are all engaged in some form of research. Often, such as with USC, scientific faculty conduct experimental research while clinical staff members look more at outcome based experimental findings. UNMC is the lone exception, 50% of the faculty are considered clinical and do not participate in research activities. They are only required to maintain a scholarly agenda and teach more classes in comparison to the research faculty.

The research expectations for students also varies substantially. Miami and Iowa require students to complete faculty mentored group projects prior to graduation. Miami's faculty believe graduate education is incomplete without a research expectation. USC and NAU have no student-oriented scholarly activity. Their goal is to provide students with an exposure to research through lecture and case study application. Northwestern, UIC, and UNMC require students to complete a scholarly project that evaluates published research applying results to clinical cases. These are formal, independent projects that must be completed prior to graduation. Creighton's hybrid approach offers students a choice between either conducting clinical research or writing a scholarly paper.

Space is an issue on almost any campus. Physical therapy departments often require large amounts of dedicated space to house specialized equipment for teaching and research. Several of the schools studied stressed the added value associated with securing adequate room while a couple have created unique teaching environments. In addition, many of the programs have acquired numerous pieces of therapy equipment.

There is an obvious disparity in the overall amount of area secured when comparing private to public institutions. USC, Miami, and Northwestern have two to three times more lecture and lab space than any of the public institutions. Each has procured at least one lecture-based classroom and two or more teaching laboratories that can accommodate anywhere from 60 to 90 students. In addition, these institutions have additional rooms for research activities. Creighton, in contrast, shares lecture halls with other programs but does maintain two dedicated teaching labs and one large research room. The amount of room permits all four private schools to maintain a vast amount of therapy equipment for training that rivals many clinical environments.

Iowa is the one public institution that compares favorably with the private schools. It has two rooms that can be oriented for either lecture presentations or clinical activities. Iowa researchers have five separate laboratories located within the same building and two additional labs off site. Overall, the immediate teaching facilities are not significantly different from the three other public programs but Iowa has superior research capacity.

The three remaining institutions, NAU, UIC, and UNMC have two or three lecture and lab teaching areas. Overall, they are significantly smaller in size and contain less equipment. In addition, each of these institutions has limited space and equipment for research activities. UIC has very little teaching room and was adamant about its need to upgrade to remain competitive. NAU's program currently resides in a building overdue for renovation. Nebraska does not have lecture space and subsequently must teach science courses in different rooms all over campus.

While space is limited for some and vast for others, several programs have unique facility features that contribute to their recruitment power. UNMC's physical therapy department is located within the campus's Student Life Center. This building houses a complete workout facility and bookstore. Students with the UNMC program have daily access to both of these amenities.

UNMC, Creighton, and Iowa are located in facilities that are a part of a medical campus. Each is within a short walking distance of major medical library providing students and faculty with multiple educational resources. Hospitals are also often associated with medical campuses. UIC, UNMC, Creighton, USC, and Iowa benefit from their proximity to a major medical center. Four of the five have substantial contact with these buildings involving them on multiple levels within the curriculum; only UNMC does not benefit from their medical center affiliation.

Probably the most unique facility is Northwestern, which has two teaching laboratories that are designed to allow faculty to subdivide them into smaller rooms. Each of the two classrooms can be divided into four smaller rooms

making a total of eight. This type of modular design positively influences the faculty's approach to the curriculum.

Departments were asked to share aspects of their programs that they considered to be unique. Most found it difficult to pinpoint specific features suggesting the constraints of accreditation limit creativity. The most common response dealt with activities that foster professional and community involvement. For example, Miami, Creighton, and UIC require students to participate in community-oriented activities providing pro bono therapy or awareness about disability. Faculty are also concerned about instilling professional expectations in each of their graduates. NAU requires students to attend a professional seminar while UNMC mandates attendance at regional and state chapter meetings of the Nebraska Physical Therapy Association. UIC requires each student to develop a portfolio that illustrates involvement in both community and professional activities. Miami requires students to raise money for physical therapy research and provides them with financial support for travel to national conferences. In contrast, Northwestern has curtailed the requirement of extracurricular activities citing a shortened program length as the main reason.

Several departments have expanded their responsibilities to the profession by offering advanced education to practicing clinicians. USC has developed two clinical residencies and UIC created an orthopedic fellowship to further the skills of licensed therapists. Although not directly related to the DPT curriculum, these tracks provide insight into the department's commitment to excellence in

education. Creighton has also developed a residency program geared at facilitating current students' progress toward a manual or orthopedic specialty.

The critical nature of recruiting students is influenced not only by the department and faculty but also by the environment in which it resides. Comparisons across institutions demonstrated three common areas of interest: program location, campus atmosphere, and class size.

Of the eight programs evaluated, USC and Miami reside in warm weather climates year round. Both believe this is a recruiting advantage and market it accordingly. The other six all reside in areas of the country that have several cold months that often include snow fall. While weather is important to students so is cost. Los Angeles, Chicago, and Miami represent significantly higher living expenses when compared to Iowa City and Omaha. Interestingly, the small town of Flagstaff also has a relatively high cost of living when compared to the Midwest programs. Faculty realize that each of these factors plays a role in determining student program selection.

Potentially less important to students initially but extremely valuable in some cases to faculty is the campus environment. Specifically, programs located on medical campus environments perceive that to be a significant advantage. Five of the eight (UIC, Iowa, USC, UNMC, and Creighton) have direct access to medical facilities as part of their educational environment. Each believes this setting substantially impacts its recruitment ability. The University of Miami has a medical campus downtown but the physical therapy department is located on the main campus. The faculty suggest this does not directly impact recruiting but



does effect the faculty's clinical research productivity. Northwestern, while associated with a medical school, does not have a direct association with a medical facility.

The other area of interest deals with the number of students admitted annually. Significant differences are noted when comparing the private and public institutions. Tuition-driven budgets require the private schools to admit more students with a four-school average of 62 compared to the public programs, which average 38 students per year. USC is the high, admitting 90 students, which can make it difficult for students to be recognized. USC faculty understand the limitations but believe the financial benefit to the program out weighs the negative costs to the student. The revenue generated by each class size allows the department to maintain contracts with 26 expert instructors. A larger faculty contribute greater educational diversity and expertise to the curriculum resulting a more effective education.

In contrast, UNMC, UIC, and Iowa, all with smaller classes size stress the ability to mentor students inside and outside of class. Iowa faculty suggested the small size allows them to provide students with different testing formats and makes possible student mentored research. Overall, faculty at the public institutions believe smaller class sizes foster greater flexibility in curricular activities.

Maintaining a successful program requires strategic planning that outlines an approach for growth and change. Each department discussed its plans for the future and their belief regarding future changes in physical therapy education.

All eight programs were asked about past changes and future expectations. Each emphasized a need for maintaining a continued process of evaluation. Miami and Creighton used the term “strategic planning” while USC and Iowa attribute success to a constant assessment and improvement process.

The most common approach to sustaining success was to maintain a high quality curriculum. Miami, Creighton, Northwestern, NAU, and Iowa identified curricular assessment as a vital component. Iowa and Miami identified a yearly review process that seeks to make changes on a continued basis. Creighton has put together a strategic approach to curricular reform through an annual evaluation of specific components while NAU has been less active but plans to focus future attention on the issue.

Future reputation will be maintained through graduate clinical performance. UIC and Northwestern both identified alumni performance as a constant reflection on the program’s value and one of the best ways to maintain a strong reputation. Both of these institutions also pointed to faculty visibility as a way of continuing to maintain a top 15% stature. Similarly, Iowa and UNMC suggested that student performance was an important recruitment tool and consequently both continue to strive to attract the best quality applicants.

Although curricular assessment and student recruitment represent successful constructs, they are not innovative. USC has identified different focus areas that

represent change. Specifically, they envision an interdisciplinary approach to education as well as working towards a better definition of specialty certification. Creighton foresees residency programs as the future in clinical education and has begun assessing how best to implement this approach.

#### SUMMARY

This chapter provided a brief overview of the similarities and differences between all eight programs. The following chapter provides an in depth analysis of these findings.

## CHAPTER 13

### COMPETITIVE ADVANTAGE ANALYSIS

The goal of this research study was to examine the competitive strategies being used by successful physical therapy educational programs. The nature of their rankings would indicate the potential for having created a strong competitive position through the selection of appropriate strategies. Porter has described three different competitive strategies: cost leadership, differentiation, and focus, as necessary tools for achieving successful performance in a business environment. This study sought to determine whether Porter's model can further explain the competitive advantages obtained by these physical therapy educational programs. The educational environment has seen limited application of these principles with no adaptation in physical therapy.

In addition to achieving success, businesses, as well as educational programs, strive to sustain market leadership. Porter believes each of the three competitive strategies can also be used to create long-term growth, however, each is also susceptible to failure based on competition from rivals. Outlasting the competition requires a fundamental knowledge of both the organization (internal focus) and the competition (external focus). Consequently, the data analysis also delves into the reasons why programs believe they will have long-term success and whether or not it is based upon internal and external focus.

This chapter provides a brief review of Porter's competitive strategy framework outlined in chapter two. Following this description, pattern-matching results are interpreted for each component of the framework. In addition, programs are evaluated for signs of internal and external focus suggesting the potential for sustainable success.

### Cost Leadership

An organization seeking to be a cost leader attempts to offer its product at the lowest market price. The structure of the company's industry determines the potential sources of cost advantage (Porter, 1985). The price of raw materials, production costs, and industry breadth are a few examples of areas where expenditure containment can result in price reductions. Firms capable of exploiting all sources of cost Leadership often achieve superior advantage resulting in a high rate of return and market control (Porter, 1985).

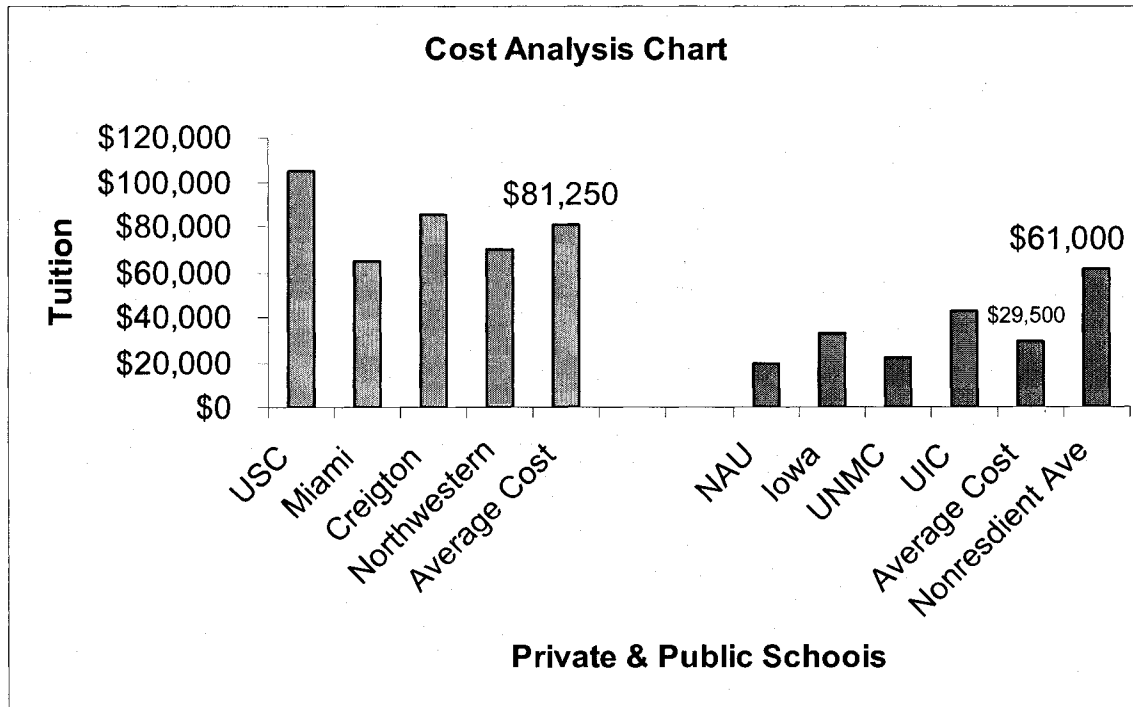
There are multiple examples throughout every industry where a company has attempted to decrease the overall price of its product to increase buyer consumption. In the early 1980s, Briggs and Stratton (small engines), Texas Instruments (electronics), and Black and Decker (tools) employed this strategy and demonstrated above average performance by controlling costs (Porter 1985). Today, Southwest airlines and Jet Blue use similar strategies within the airline industry. Lower cost alone does not produce superior results; fundamentally, consumers must believe in the value of the product.

As with other organizations, there is a cost to providing students with a DPT degree. The production expenses are recovered through student tuition dollars either directly or indirectly. Subsequently, physical therapy departments can implement cost leadership as competitive strategy paying attention to value. As with industry, a reduced price must be accompanied by a valuable education for programs to attract quality students.

### Cost Leadership in Physical Therapy Education

The four public and four private programs in this study represent a strong dichotomy in student cost. The four public institutions average \$30,000 in tuition have a significant cost leadership position when compared to the \$81,000 average cost for the private institutions (Graph 1). The difference in tuition is a direct result of the funding sources for the two types of institutional programs. Private campuses are primarily tuition driven, requiring the program to charge a price that covers the operational cost. Public schools are funded, at least in part, by the state with a Board of Regents often controlling the price of tuition. The variances in funding source and program environment represent a strong cost leadership position for public schools.

Graph 1: Cost Analysis



All four private institutions agreed that competitively, they are at a disadvantage in terms of program cost. High student tuition has effectively eliminated this strategy as a potential option. In contrast, UIC and Iowa reported using their competitive cost position as a recruiting tool. In both instances data collected from student surveys indicated that cost was a primary reason for program selection. As a consequence, both departments make it a point to reveal this benefit to potential applicants (Table 6). UNMC and NAU also acknowledge the cost benefit but were less inclined to use it as a marketing tool.

Table 6: Cost Advantage Analysis

School	Is cost considered an advantage?	Is cost a marketing strategy?	Concerned about cost/value ratio?
Private Institutions			
USC	No	No	No
Miami	No	No	Yes
Creighton	No	No	No
Northwestern	No	No	No
Public Institutions			
NAU	Yes	No	Yes
Iowa	Yes	Yes	Not Mentioned
UNMC	Yes	Not Mentioned	Not Mentioned
UIC	Yes	Yes	Not Mentioned

As in business, low cost can be perceived as poor quality, which is a concern for public programs. NAU, the least expensive program in this study, was adamant about avoiding cost as a strong marketing tool (Table 6). Faculty appreciated the understanding that a low price might devalue the education resulting in a poor competitive position.

An additional finding relative to strong cost leadership for these public institutions was the ability to increase price. The extreme variances in cost, almost a 3 to 1 ratio between private and public schools, has allowed two public institutions to increase cost revenue without losing their competitive positions. Iowa and UIC have augmented student tuition by adding a differential charge each semester that generates funds, which go directly to the program. The added revenue supports their strategic positions by enhancing departmental infrastructure from an educational as well as research perspective.



One other strategy relative to cost leadership noted in the findings was geographical recruitment. The four public institutions maximize cost advantage when recruiting in-state students. Tuition differentials exist for students who are not residents of the state in which the public school resides. The average tuition for out-of-state students in this study was \$61,000 versus \$30,000 for residents. The change in non-resident fees eliminates the competitive advantage enjoyed by these public programs (Graph 1). The substantially lower price for in-state students represents a university strategy to foster the growth and development of healthcare within the state. As a consequence, geographical recruitment combined with institutional mission creates a competitive cost leadership position.

However, it also creates a lack of student diversity relative to educational background, life experience, and ethnicity, which could have a long-term impact on success. Each of the four successful private institutions, in contrast, describes a broad geographical recruitment approach, which promotes greater diversity amongst its student body. Extensive recruiting, however, results in greater competition as each of the four private institutions described twice as many competitors. Although private programs have a greater amount of competition that frequently changes, the disbursement of graduates geographically may counter the effect.

## Differentiation

Advantages in competitive position can also be obtained through the development of a unique product or service. Organizations identify one or more characteristics that buyer's value (Porter 1985). The firm then establishes an ability to supply these features to the public, and in doing so separates itself from its competition. In some instances, differentiation eliminates competition allowing the company to establish a premium price (Porter 1985). However, ultimate success is dependent upon maintaining differentiation at a price that exceeds production cost but does not diminish the perceived value of the product.

Porter refers to Caterpillar Tractors as a primary example of differentiation. For years, the company has used the characteristics of durability, service, and dealer networking to create market control. Attention to these aspects produced a dependable product that results in long-term customer loyalty and above average performance without cost leadership. More recently, KCI developed a wound care vacuum that assists in the closure of all types of wounds. Its immediate success, coupled with a lack of alternatives, allowed the company to maximize profits while providing a excellent healthcare technology.

Colleges and universities, as a whole, represent organizational divisions within the educational industry. Their general purpose is to provide an environment where individuals receive an education in a desired field of study. Although similar, each institution establishes its own mission, which in turn leads to different goals and objectives. Because no two institutional missions are exactly alike, the variances can create fundamental differences between schools.

In fact, some states believe each institution should fulfill a distinct purpose, eliminating duplication of services. Such variation in organizational purpose represents a potential competitive differentiation as defined by Porter (1985). This advantage can be observed when comparing community colleges, which provide foundational education and technical skills, to research extensive universities, which strive to develop PhD specialists. Each institutional type appeals to a decidedly different group of students.

In contrast to universities in general, individual departments have greater constraints on their ability to offer unique experiences, a situation that limits their overall ability to create true differentiation. In physical therapy education, for example, each program must conform to a set of accreditation standards. These standards outline the necessary components that must be present in each program. Although these guidelines might limit strategic differentiation, the larger institutional focus can create competitive advantages that ultimately effect individual programs.

#### Differentiation in Physical Therapy Education

An analysis of the eight institutional missions reveals the influence of overall institutional mission on two levels. First, five of the eight institutions evaluated reside on major research extensive campuses (Table 7). This Carnegie Classification requires a concerted effort by all departments to acquire research funding through grants, as well as strive toward awarding doctoral level degrees. As a consequence, these five physical therapy programs have goals and

objectives that, for the most part, meet the research and degree expectations of the institution. USC, Miami, Northwestern, Iowa, and UIC have major departmental emphases on research activities. This research environment directly impacts the clinical degree programs through course content, which, in turn, alters the curriculum improving patient care. USC summarized its intent by stating “newly discovered information needs to be integrated into graduate level education.” Specifically, USC, Miami, Northwestern, and Iowa employ multiple research faculty who are supported by extensive research facilities. Their active involvement in experimental discovery contributes significantly to the DPT curriculum and student clinical knowledge.

Table 7: Differentiation Characteristics

School	Carnegie Classification	PhD Program	Medical Campus
Private Institutions			
USC	Research Extensive	Yes	Yes
Miami	Research Extensive	Yes	No
Creighton	Masters College and University I	No	Yes
Northwestern	Research Extensive	No	No
Public Institutions			
NAU	Research Intensive	No	No
Iowa	Research Extensive	Yes	Yes
UNMC	Specialized Medical	No	Yes
UIC	Research Extensive	Yes (Interdisciplinary)	Yes

In contrast, Creighton, NAU, and UNMC, although describing research and scholarly activity as an important aspect of the department, reside in institutional

environments that do not exhibit the same level of research intensity. The distinction in university classification provides a differentiation related to research expectation and establishes a variance in educational environment and competitive advantage.

Associated with the research extensive classification is the production of PhD graduates within the institution. Four of the five research extensive institutions also offer PhD degrees within their departments (Table 7). Only Northwestern has not developed an advanced research degree (Table 8). A strong research agenda combined with advanced degree programs establishes another level of potential differentiation. An argument can be made that both of these attributes do not directly impact the clinical degree tract; however, all four institutions insist that their departments' research agendas and PhD programs significantly enhance the level of education for the DPT students. This combination represents one level of differentiation observed within this study.

Table 8: Research Extensive and PhD programs

School	Carnegie Classification	PhD Program	Medical Campus
Private Institutions			
USC	Research Extensive	Yes	Yes
Miami	Research Extensive	Yes	No
Public Institutions			
Iowa	Research Extensive	Yes	Yes
UIC	Research Extensive	Yes (Interdisciplinary)	Yes

The presence of a medical center, as part of the overall campus environment, represents the second level of institutional distinction. Several of the physical therapy departments within the study are located on medical campuses and find themselves in close proximity to medical facilities (Table 7). Iowa and UIC specifically offer programs that have integrated these environments into their curriculum. Three other programs (USC, Creighton, and Nebraska) reside on campuses that contain other healthcare professions as well as medical institutions. Each suggests that the ability to use these facilities within the educational curriculum has a major impact on program success. In addition, each of these campuses described the opportunity for interdisciplinary interaction, such as DPT students training with physicians, as a positive impact on creating confident practitioners who can communicate effectively with all other healthcare providers. Consequently, the medical center environment creates a differentiated educational experience and a strong competitive advantage.

Pattern matching across cases revealed the combination of research extensive classification, PhD program, and medical center environment to occur in only three institutions USC, Iowa, and UIC (Table 9). UIC, although offering a PhD, does it through an interdisciplinary approach and not completely within its own department, leaving USC and Iowa as the only two programs that have all three competitive attributes individually. As a result, both have substantial opportunities to use differentiation to establish favorable competitive positions. Two major factors relative to competitive position support these findings. First, USC and Iowa are the top two ranked programs within this study (*Physical*

*Therapy Program Rankings, 2004*). Second, USC, the number one overall program in the country, is also the most expensive. This ranking suggests that its competitive differentiation creates a valued product that effectively competes against cost restraints.

Table 9: Programs Containing all Three Differentiation Characteristics

School	Carnegie Classification	PhD Program	Medical Campus
Private Institutions			
USC	Research Extensive	Yes	Yes
Public Institutions			
Iowa	Research Extensive	Yes	Yes
UIC	Research Extensive	Yes (Interdisciplinary)	Yes

One other program within this study demonstrates institutional level differentiation not associated with classification or environment. Instead, Creighton University distinguishes itself from other programs because of its Jesuit affiliation. The religious foundation of the school provides for a very unique emphasis on social and professional responsibility. The physical therapy department's mission matches the institutional objectives creating a unique approach to physical therapy education that was not seen in any of the other schools. Consequently, Creighton has an ability to create a favorable competitive position by emphasizing its Jesuit ideals.

## Focus

In focus strategy, an organization attempts to gain an advantage by converging its attention on segments of an industry. This strategy is unique when compared to the previous two because the firm attempts to create a competitive advantage within a subdivision of a market rather than within the entire industry. In fact, the organization may not possess overall competitive advantage within the field but rather obtain above average performance only within its niche area.

This approach can be separated into two different elements: cost focus and differentiation focus. Cost focus represents an attempt to exploit price benefits within a particular segment of an industry (Porter 1985). Porter describes Martin-Brower, a food distributor, as a cost focus organization. It has reduced its supply list to eight fast food companies and has attempted to maximize profits by decreasing cost and providing superior focused service. In differentiation focus, the firm attempts to exploit a particular target segment of a larger industry by enhancing production or delivery. For example, Colours is a manufacturer of specialized wheelchairs for patients who have suffered a spinal cord injury. The industry, as a whole, contains multiple competitors who supply similar equipment at discounted prices. These larger companies, however, are not committed strictly to wheelchair sales but have diversified their business hoping to claim a large amount of the medical supply business. In contrast, Colours personalizes each chair for its customer and follows up with superior customer service. Their service and design supplies a quality product to a select group of patients



creating a focused differentiation within the industry. A company can use either sub-strategy or both in an attempt to establish a competitive advantage.

Higher education, as an industry, can be subdivided into many different markets depending on the individual departments within a university. Each department or program attempts to attract students into various degree tracts. Applying business terms to this setting, we can define the degree as the product being sought by the various buyers. Subsequently, each student represents a buyer who is the target for a specific department's recruitment efforts.

A differentiated focus approach to competitive advantage suggests that organizations using this strategy within a given market to target a specific market segment. In the case of physical therapy education, each of the eight programs studied revealed a target segment. Specifically, they identified "high quality applicants" as either a "priority, necessary, or critical" to program success. These findings reveal a need to develop a favorable competitive position that will attract the quality of students desired.

Porter (1985) suggests organizations can "differentiate the production and delivery systems that best meet the needs of their target segments." Data analysis conducted on all eight cases revealed multiple areas that departments believe enhance program production and delivery. Historically, Creighton developed a focused niche by creating and implementing the first entry-level doctorate degree in physical therapy (DPT). This strategy enabled them to provide a different product that appealed greatly to a specific segment of student, "high quality." Private institutions, such as USC, quickly recognized the value of

the degree and its potential for a favorable competitive position. Differentiated focus cannot be maintained if rivals are able to duplicate the position. As a majority of departments now offer the DPT degree, any differentiated focused effort must exploit alternative production and delivery variables, such as curricular design and delivery.

### Focus Strategy for Physical Therapy Education

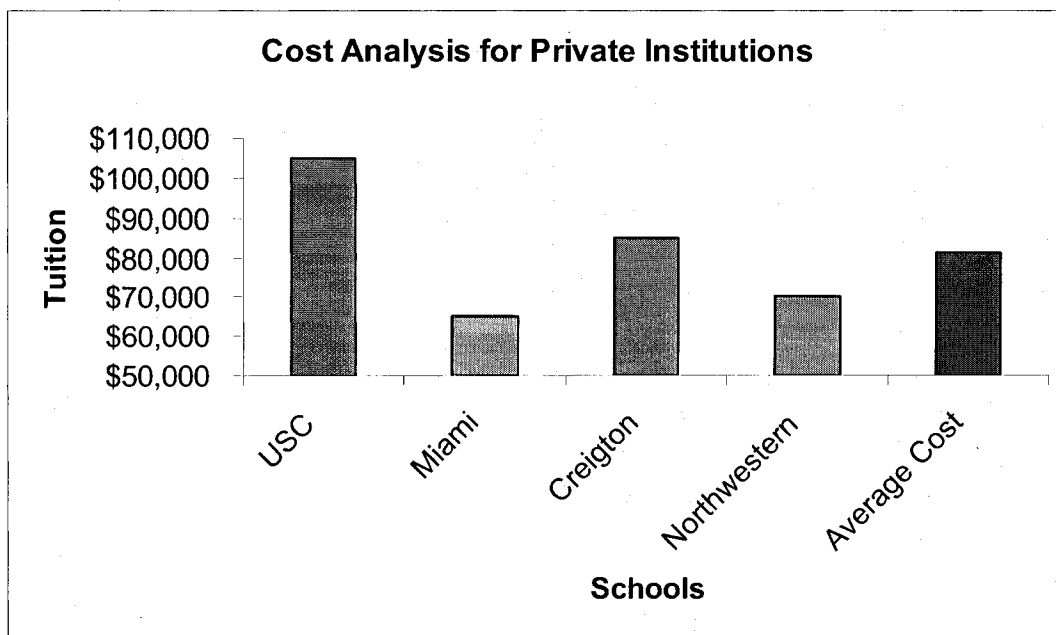
An analysis of the eight physical therapy programs reveals several different areas of focus that result in favorable competitive position. Specifically, one department (Miami) maximized cost leadership from a focused perspective. Additionally, each program also offered a differentiated focus approach by exploiting strengths in program design, curricular delivery, and/or student recruitment.

### Cost Focus

Only one program within the study demonstrated a cost focus competitive strategy. The University of Miami instituted a fixed tuition price in 1997 at \$65,000 per year. This is well below the average cost of the four private institutions within this study (\$81,000) This \$16,000 differential clearly gives Miami an advantage. Even more definitive is the \$40,000 cost difference between Miami and USC. In addition, the fixed level is only \$4,000 higher than the average out-of-state tuition rates (\$61,000) for the public programs within the

study (Graph 2). The cost proximity provides Miami with an opportunity to compete for non-residents who might be considering attending a Florida school.

Graph 2: Private Program Cost Comparison



#### Focus Differentiation

All eight programs were asked about their educational philosophy and overall curricular design. Faculty revealed that the general structure of their curriculums includes science course work in the first year followed by clinical studies in the second. A majority of the programs revealed that their primary concern was to develop a "generalist practitioner" capable of working in any healthcare environment. Three institutions, USC, Northwestern, and Creighton, however, have implemented curricular themes that go beyond this generalist concept. Specifically, USC and Northwestern have implemented a movement science

“central educational construct” that focuses on developing therapists who are recognized as movement specialists. Their goal is to produce primary care practitioners of the musculoskeletal system moving away from the perceptions that physical therapy is an allied health profession. This construct is supported by the APTA’s vision of autonomous practice and represents the profession’s goal for the future. As a consequence, this design and philosophical approach creates a strong competitive educational position.

Alternatively, Creighton has developed a construct that emphasizes the student as apposed to the curriculum. By evaluating the needs of the student, they have created a eclectic approach to physical therapy education that seeks to develop the graduate in all areas of the profession. This system appears to capture the responsibility of a professional healthcare provider. This focused construct will appeal to specific students within the pool of potential physical therapists. The other five institutions did not provide any feedback regarding the use of a curricular construct (Table 10).

Table 10: Comparison of Focus Design

School	Innovative Curricular Construct	Integrative learning approach
Private Institutions		
USC	Yes	Yes
Miami	Not discussed	No
Creighton	Yes	No
Northwestern	Yes	Yes
Public Institutions		
NAU	Not discussed	Yes
Iowa	Not discussed	Yes
UNMC	Not discussed	No
UIC	Not discussed	Yes

Another design focus used by multiple institutions was to create an “optimal learning environment.” NAU, UIC, and Northwestern have implemented “active learning environments” across the curriculum highlighting student participation within the educational process. These three programs, along with Iowa and USC, stress the importance of “curricular integration,” which requires students to apply all learned material to different patient situations (Table 10). These five institutions suggest that an optimal “learning environment” centers on active learning that is created through “integration.” As a competitive distinction, these programs believe their ability to establish an integrative approach leads to stronger student performance.

Further analysis reveals that only two programs have developed both an innovative curricular design and an integrative approach to learning. USC and Northwestern have combined both approaches to maximize learning and in doing

so have created a distinctive design focus. Interestingly, both programs are private institutions with large faculties.

Several different aspects relative to educational delivery support the possibility of fostering a focused differentiated approach. Specifically, faculty and student characteristics as well as facilities were among the variances in delivery that faculty believe create program excellence.

The private institutions along with UNMC believe that content delivery is best supported by a large number of faculty. The sheer number of faculty enables the departments to hire numerous experts who can support a broad and in-depth curriculum (Table 11). These professionals often have been influenced through various practice-based experiences adding significant diversity to the educational environment. Subsequently, these five institutions (USC, Miami, Northwestern, Creighton, and UNMC) believe that a large faculty optimizes the learning environment through diversity and knowledge.

Table 11: Educational Delivery

School	Fulltime Faculty	Collegiality	Facilities (Small, moderate, large)	Class Size
Private Institutions				
USC	26	Not discussed	Large	90
Miami	16	Present	Large	55
Creighton	18	Not discussed	Moderate	43
Northwestern	27	Present	Large	60
Public Institutions				
NAU	8	Present	Small	40
Iowa	7	Present	Moderate (research)	36
UNMC	14	Present	Small	40
UIC	10	Present	Small	36

The three public programs with smaller faculty (NAU, UIC, and Iowa) agree that diversity promotes a stronger educational delivery. These three programs achieve diversity through the use of adjunct faculty. The base staff provides the science perspectives while adjuncts delivery the clinical content. While in theory, this approach seems similar; the face validity does not translate into a strong diverse approach. Consequently, departments with larger staffs will be perceived as creating greater opportunity for educational diversity.

A larger, diverse faculty is often believed to be a hindrance to forming a collegial group. This study revealed that the three smaller, public programs reported strong collegiality. In addition, each felt that their cohesiveness and teamwork was the most significant contributor to their success. Even though they have larger faculties, Miami, UNMC, and Northwestern also believe that their

faculty collegiality is excellent and subsequently positively enhances their programs' success. Only USC and Creighton did not mention collegiality as a significant benefit, however, all eight programs agreed that a successful curriculum is based upon a strong faculty.

The quality of educational delivery is partially dependent upon the program's facilities. Several of the departments felt strongly that the quality of their facilities create unique education environments that are not common among the majority of physical therapy educational programs. (Table 7). Three of the four private institutions (USC, Miami, and Northwestern) benefit greatly from having two to three times more space and equipment than the other programs in the study. In addition, each of the four private institutions has a wealth of equipment and media technology to enhance its educational delivery. An evaluation of the public schools reveals Iowa as the only program with a large amount of space; however, most of it is research oriented. Each public program has some unique features, such as Nebraska and its proximity to the student recreational center, which houses usable recreational equipment; however, its ability to acquire equipment and retain educational space is limited when compared to the four private institutions. As a consequence, space and technology represent aspects of these three private institutions (USC, Miami, and Northwestern), which serve to enhance their competitive position. In contrast, all four public programs including Iowa recognize that they are at a considerable disadvantage competitively.



One additional constraint on delivery is the number of students admitted within a particular program each year. The elevated average class size for private institutions (62), needed to support program costs, creates the potential for decreased individualized attention (Table 11). In addition, the extensive number of students within each private program potentially offsets the space and technology advantages. In contrast, the four public program's average enrollment (38) represents a greater opportunity for one-on-one faculty student interaction to exist (Table 11). USC argues that extensive faculty, which can be hired due to the tuition revenue generated by the number of students, increases retention and learning because of the quality of the education. In fact, an analysis of faculty to student ratios reveals better numbers for the private institutions when compared to the public institutions evaluated within this study (Table 12). Ratios, however, do not account for the classroom setting where one instructor is responsible for the education of 60 to 90 individuals. Ultimately, a diverse faculty accounting for better education in the face of a large number of students is a hard argument to sustain in the face of consumer demand for small classes sizes. However, smaller class sizes at the public institutions result in smaller faculty, which means fewer experts across all areas of physical therapy suggesting there is no clear strong argument to be made.

Table 12: Faculty Student Ratios

School	Fulltime Faculty	Class Size	Ratio
Private Institutions			
USC	26	90	1 to 3.4
Miami	16	55	1 to 3.4
Creighton	18	43	1 to 2.4
Northwestern	27	60	1 to 2.2
Public Institutions			
NAU	8	40	1 to 5
Iowa	7	36	1 to 5.1
UNMC	14	40	1 to 2.9
UIC	10	36	1 to 3.6

The missions for the four state-supported institutions translates into a definitive marketing strategy when compared to the privately funded schools. Specifically, the mission for each of these four institutions is to develop physical therapists that will meet the needs of the citizens of their respective states. This objective, combined with lower tuition rates for residents, creates a strong opportunity to market their curriculum toward in-state students. For example, UNMC has established a network of contacts within the different Nebraska state institutions enabling them to locate potential applicants early. Iowa and NAU rely also on alumni practicing in their respective states to continue to help recruitment potential graduates. Their concentrated efforts within their given state enables them to create considerable strong market control.

In contrast, each of the private institutions does not use a focused strategy but targets a very broad applicant pool reaching across many different states.

USC and Miami have developed multiple marketing strategies that included high tech websites and DVDs that provide students with detailed information about the program. Private institutions realize that capturing quality students requires them to advertise to many different customers. As a consequence, these institutions have put more time and effort into diversifying their approach to student recruitment. Overall, both the private and public institutions within this study demonstrate a positive approach to marketing that helps to maintain their competitive position.

### Combining Competitive Strategies

Porter (1985) has suggested that organizational success requires the use of at least one of the three competitive strategies: cost leadership, differentiation, and focus. Several research articles support the premise that competitive strength might best be determined through the use of more than one strategy at the same time (Murray, 1998; Yamin, 1999; Panayides, 2003). This research study reveals the implementation of more than one strategy for all eight schools (Table 13).

Table 13: Overview of all Three Competitive Strategies

School	Cost	Differentiation			Focus			
		Classification	PhD	Medical Campus	Cost	Design	Delivery	Recruitment
Private Institutions								
USC		√	√	√		√√	√√	√
Miami		√	√		√		√√	√
Creighton				√		√√	√	√
Northwestern		√				√√	√√	√
Public Institutions								
NAU	√					√	√√	
Iowa	√	√	√	√		√	√√	√
UNMC	√			√			√√	√
UIC	√	√	√	√		√	√√	√

An analysis of the three-focus categories reveals some significant distinctions (Table 13). Seven of the eight programs have at least one of the three differentiation characteristics. In addition, all eight programs have implemented strategies relative to design and delivery that emphasize competitive variance. Combination differences can be seen when comparing public versus private institutions.

Each of the four public programs is able to combine aspects of focus and differentiation with cost leadership to gain a strong competitive position. NAU, UNMC, and UIC create a competitive advantage by supporting their education through strong curricular design emphasizing an “integrative approach.” Iowa, the fourth public institution exceeds the other three by also having substantial differentiation related to its environment. The combination of a medical center, PhD program, and Carnegie Classification combined with cost leadership and a

focused curricular design establishes it as the most competitive public program within the study.

Three of the four private programs have extensive strategy development both within differentiation and focus. Their ability to combine these two strategies works to help them overcome their limitations relative to cost. USC holds a superior competitive position over the other three private institutional programs (Table 13).

### Sustaining Market Leadership

Competitive strategy offers a program the opportunity to establish organizational success. Sustaining this advantage requires each program to maintain both an internal focus and external focus. Ongoing functional assessment of the organization's strategic plan, curricular design, and overall educational philosophy provides each program with an internal focus. This type of ongoing analysis enables departments to upgrade various aspects of curricular design to create a stronger educational environment. However, evaluating and implementing change based upon only an internal functional assessment limits a program's chances of sustaining success.

Equally critically to long-term success is developing an external focus, which involves analyzing activities of competitors as well as the market. Trout and Ries (1985) have suggested that external focus is critical to long-term business success. Staying updated on the competition and potential influences within the environment prepares a department for successful change.

Physical therapy education is no different than other areas when it comes to understanding and preparing for long-term success. All eight programs identified a need for continued internal assessment. The processes of “strategic planning” and “evaluating the program” annually were consistent across all eight programs with a primary area of emphasis centering on the curriculum. Miami, Creighton, Northwestern, NAU, and Iowa all stressed the importance of updating the curriculum.

Curricular investment and development leads to enhanced graduate performance and a stronger program reputation. Each of the departments evaluated stressed that alumni quality directly influences consumer perception of the school, which in turn affects recruitment. As a consequence, continuing to strive toward academic excellence was a dominant theme.

Only one program provided a strong process of external focus. USC demonstrated a visionary plan that addressed multiple areas of concern including clinical residency and specialist certification. The development of future plans in these areas demonstrates an ongoing analysis of the overall physical therapy educational environment. This approach effectively separates this program from all others within this study. Their process can be considered proactive with regard to change enabling them to create opportunities for growth and long-term success.

Complementing their external position is a well-designed educational program that integrates research with education creating an internal focus. The

combination, as described by the faculty, is not separable but instead integrated creating a dynamic curriculum that is driven by change.

In addition to USC's approach to sustained leadership, this study also highlights leadership strategies in two separate geographical situations where two programs are located in close proximity. UIC is twelve miles from Northwestern in the city of Chicago while UNMC is only nine miles from Creighton in Omaha. These geographical relationships demonstrate an appreciation for internal and external focus. The proximity mandates that each program recognize the other's strengths and weaknesses and how those pertain to their program. UNMC discussed an initial philosophy of "flying their own plane," which described its belief in not dealing with the external threat posed by the emergence of Creighton and the DPT program. Further discussions with the faculty revealed concerted efforts on their part to better understand the external forces created by Creighton, which led them to curricular and program changes that were in line with their competitor.

Similarly, Northwestern and UIC are acutely aware of the other's strengths and weaknesses. UIC had very limited space and old equipment while Northwestern has modern teaching facilities and an abundance of space. As a consequence, UIC makes sure each applicant sees the adjoining medical facility and appreciates its integration into the curriculum. Northwestern realizes the cost variances between the two schools and thus emphasizes its curriculum, facilities, and the value of their education.

The close proximity of the four schools illustrates the need for understanding and attending to a competitor's actions as well as an organization's internal activities. In addition, each institution must be aware of the changing market and current philosophies to sustain a competitive advantage.

### Summary

The data reveal that each of the eight programs demonstrates the use of competitive strategy. Furthermore, each of the eight programs is engaged in more than one strategy. Significant distinctions exist between public and private institutions when developing competitive strategies. Understanding their strengths and weakness appears to be significant in creating a strong competitive position and sustaining long-term success.



## CHAPTER 14

### THE IMPACT OF COMPETITIVE ADVANTAGE

The purpose of this study was to investigate the existence of competitive strategy within physical therapy educational programs. The premise of the study was formulated from the interpretation of survey data gathered in 2002 that revealed a significant differentiation between programs based upon the degree awarded (Domholdt et al., 2002). The schools offering the entry-level doctorate in physical therapy (DPT) were more successful in recruiting high quality applicants. Those programs that had remained at the master's level quickly began to address the need for change citing a lack of competitive position as the most important reason. By 2005, almost 80% of these programs had changed or were in the process of changing, which has effectively eliminated the differentiated advantage of the DPT. As a consequence, physical therapy educational programs need to determine effective alternative strategies to gain a competitive edge.

This study's findings are only relevant if faculty of physical therapy programs perceive that a competitive environment exists. The literature supports the premise that competitive forces are at work within higher education. Findings from this study confirm the literature's position. Faculty, in all eight institutions, believe they compete with other physical therapy programs when trying to attract

“quality applicants.” In addition, each program described the need to market its strengths to potential students.

To analyze the existence of competitive strategies within physical therapy education; eight, highly successful programs were chosen based upon their ranking in the 2004 US News and World Report. School selection was subdivided by type, with four public and four private schools, providing an opportunity to evaluate the potential for variances across institutional type.

### Research Findings

Prior to the start of data collection, three primary research questions were formulated. In addition several different propositions were designed to help guide the data collection and analysis.

The first primary research question sought to discover how successful programs created a competitive advantage. The associated proposition suggests that successful physical therapy educational programs use of one or more competitive strategies. The analysis revealed that all eight programs use at least one competitive strategy for program success. Moreover, the data demonstrated that each of the programs assessed has implemented more than one strategy, with Iowa, UIC, and UNMC using components of all three strategies.

An additional proposition looking at the presence of competitive strategy suggested that cost leadership would not be the only strategy employed by a program. Research findings state that cost containment does not guarantee success. Each of the four public programs within this study demonstrated cost

leadership positions when compared to the four private schools. The substantial difference in price, however, was not the only strategy used. Instead, each department has implemented additional strategies that support its competitive position. Iowa and UIC differentiate themselves by effectively using their educational surroundings, like the medical centers located on their campus. UNMC creates competitive advantage through faculty size and diversity, allowing them to create a strong generalist practitioner. NAU is the only program of the four that has very little focused differentiation, but its emphasis on curricular design and professionalism allows for an effective recruitment position. However, NAU's limited focus and institutional setting may make it difficult to sustain success. Overall, these findings suggest that cost leadership alone did not account for program value.

A third proposition deals with the combination of competitive strategies for effective leadership. The literature suggests that a mixture of cost leadership, differentiation, and focus will provide overall greater competitive strength than relying on a single strategy. The data in this study revealed that all eight highly successful programs use at least two of the three competitive elements. Furthermore, all of the programs have developed multiple focus areas to enhance the overall effectiveness of the program. For example, the top public program in this study, University of Iowa, demonstrates competitive strategy development in all three areas with well-developed differentiation and focus, which maximizes its competitive position. USC, the number one school in the country, is private and maintains a strong competitive position by developing

substantial strategies in both differentiation and focus to create a very dynamic and progressive program.

The second research question looked to discover the similarities and differences between competitive strategies used by public and private institutions. The supportive proposition suggests variations in competitive strategy exist when comparing private to public programs. The research data collected revealed that significant differences do exist between public and private institutions. When marketing toward in-state students, the four public programs create a considerable cost leadership position that cannot be matched by the private schools. Unfortunately, the extreme variances in price could call into question the program's educational value (as in the case of NAU). As a consequence, public schools also create value through educational design.

Private programs offer students large, diverse faculty who are experts within their given fields. They are also able to create strong educational environments by obtaining excellent equipment and teaching facilities. Cost leadership is not an option since each of the four programs relies heavily on tuition dollars to sustain the departments. Instead, they have all focused on providing curriculums that use the educational environments to their advantage.

Public schools, on the contrary, have limited teaching space and small faculty. As a consequence, these programs must focus on creating a more detailed curricular design and implementation and thereby taking advantage of smaller class sizes.

The final research question focuses on understanding the forces that impact long-term outcomes relative to sustained leadership. Prior to the study, it was postulated that older DPT programs would demonstrate a greater appreciation for change, which would translate to a more focused commitment to future growth. Findings, however, suggest characteristics indicative of long-term success were not dependent upon the length of time a program has been offering the DPT. Results showed that elements relative to sustained success were present in both older and younger DPT programs. Several programs had greater emphasis on internal and external focus but all eight programs had an appreciation for ongoing assessment.

Alumni performance was noted as a significant factor related to sustained leadership. Graduate success supports the value of the education received from the institution and subsequently becomes an excellent marketing tool. All eight programs believed that alumni performance was critical to long-term success. As a consequence, admitting "high quality" students becomes even more important because these eventual graduates represent the "value" of the education. Creighton admitted that they had limited potential in this area because of their overall program youth (10 years) whereas Iowa and UNMC both believe it may be one of their most important strengths.

### Building a Competitive Position

The analysis revealed several key findings that should be considered when a physical therapy educational program is analyzing its potential for greater

success. The first major factor deals with faculty characteristics. Successful programs within this study were represented by faculty that were both diverse and collegial. Diversity allows programs to market curricular depth and provide students with a potentially stronger education. Collegiality produces a working environment where the faculty can create innovative education constructs that elevate the educational process. This type of team-oriented approach to physical therapy education was a unanimous characteristic required for competitive success. Thus, faculty selection is a critical component to building program success.

One additional point for consideration is the potential for competitive programs to attract excellent faculty. The focus of this study has been on the competitive position created by programs that work to attract "quality students." These same strategies also work to secure faculty who can further enable a program to develop its strengths.

Second, low cost must be accompanied by perceived value with educational programs. Perceived value can be appreciated by emphasizing the educational environment, delivery, and/or design. Highly competitive programs implement an internal assessment, which has allowed them to create value in one or more of these areas. For example, the University of Iowa represents a program, which incorporates the healthcare environment in which it resides using both the hospital and medical school to improve its educational process. This program demonstrates the implementation of internal focus enabling it to tailor the educational process and effectively creates excellent value related to cost.

Developing a strong internal focus that identifies a program's strengths and potential areas for added value is a critical component for building program success. Consequently, less successful programs may have similar opportunities but have either not identified and/or maximized them.

NAU has a slightly different approach. Their additional perceived values are difficult to detect because they rely on an integrated curricular design, professionalism, and alumni outcomes as key competitive strategies. These characteristics are critical to physical therapy education and thus represent strong value; however, they are not readily apparent to the consumer. As a consequence, it requires a more extensively marketing strategy. Their advertising materials and website were limited when compared to the other eight programs. Interestingly, the faculty also admitted the fact that the program has been negligent in evaluating and upgrading the curricular design. A decrease in attention to curriculum could lead to less prepared therapists who may not demonstrate current concepts in healthcare. As a consequence, alumni support that drives student recruitment could be diminished resulting in a decrease competitive position. Overall, NAU's approach suggests possible limitations in their ability to sustain long-term success.

This leads to a third major finding, which suggests that building success is highly correlated to attracting "quality students." Each of the programs described this as critical to establishing the type of educational environment desired. Specifically, faculty believe high quality students allow them to teach at a higher level and deliver greater depth and diversity within the curriculum. In addition,

alumni performance was a significant recruiting factor for all eight programs. Miami referred to a lean applicant period, which severely limited their funding, but academic standards were not sacrificed because quality student graduates were imperative to program success. As a consequence, a significant factor for program development is to define a “quality student” and subsequently recruit these students.

A fourth major finding suggests program success is highly correlated to school environment. The three most successful programs in this study, USC, Iowa, and UIC, all reside on research extensive, medical campuses. These distinguishing characteristics have contributed to significant enhancements related to curricular design and implementation. Specifically, these programs maximize their environment by incorporating as much of the medical and research environment within the educational process for the DPT students. Each has a slightly different approach but the overall theme is consistent. In contrast, UNMC, which has a similar institutional setting, has not developed as strong a relationship with the medical community on campus and thus is less inclined to use its environment as a competitive factor.

The research extensive campuses strengthen the curriculum by adding current findings to course materials. The dynamic environment suggests an education that is always advancing. USC believes their students are better prepared for clinical practice because of the extensive faculty research that is incorporated into the classroom. As a consequence, building a competitive



position will require programs to demonstrate research-supported curriculums that maximize the use of a healthcare setting.

The final key component for building competitive success is to recognize the value of both internal and external focus. Successful implementation of the four previous elements; faculty, value, students, and environment, require a program to have performed an internal assessment. This evaluation allows faculty to understand the strengths and weakness of the program, which creates an opportunity to maximize a competitive position promoting long-term success. However, the dynamic atmosphere of the educational environment requires that this process occur on a regular basis.

Equally important is being aware of external forces that represent potential change. Physical therapy education is influenced by the policies enacted by the American Physical Therapy Association as well as the commission that oversees program accreditation. In addition, programs will be influenced by changes made by competitors. Maintaining awareness and implementing changes on a timely basis will help to secure a program's future. For example, USC, by recognizing the vision of the APTA, has implemented a curricular construct aimed at elevating the standard perception of their graduates relative to their place within the medical community. They recognize that autonomous practice begins with providing graduates the necessary education to become movement science specialists. No other program in this study has adopted this type of curriculum position and thus creates a distinct advantage for USC. Understanding external focus will allow a program to build a successful future.

## Competitive Principle Application

A new program would want to embrace all of these key elements to begin to create a strong competitive position. UNLV, my current employer, represents a current case environment in which to apply these principles. Reviewing the current state of the Physical Therapy Program at UNLV, I found both positive aspects and areas for needed improvement that would enhance its competitive position.

The Department of Physical Therapy establishes a competitive advantage through cost leadership. Total tuition for the program is approximately \$23,000 for an in-state student. Out-of-state students pay an additional \$10,000 per year. To compete for quality students, this study would suggest that the program must also demonstrate educational value. The department possesses a strong but small faculty that consists of members' who are young and energetic with diverse backgrounds. Overall, positive group dynamics enable the department to produce an integrated curriculum that covers all areas of clinical practice. Value is further added by limiting the number of students to 22 per year. This creates a 1 to 3 faculty to student ratio in a very small overall student population.

While the teaching environment is excellent, the program is not located on a medical campus. The university does support and encourage research; however, the size of the faculty and related facilities limit overall research productivity. The potential development of a medical campus in the future could greatly impact research productivity and the educational environment for the program. The other missing piece for UNLV is a more focused curricular design. Changes to the

curriculum following the implementation of the DPT degree as well as turnover in faculty have created a slight detachment of the faculty from a more focused educational approach. Revisiting the curriculum and developing a more concentrated theme would secure educational outcomes that will enable alumni to foster continued growth and respect for the program.

The program's competitive strengths outweigh its limitations. As a consequence, quality applicants continue to choose to attend UNLV. Further growth and development will be dependent upon the program's ability to identify weakness both internally and externally. Current practices support an internal awareness but limited external assessment. Future external focus is warranted as the program continues to mature.

#### Unanswered questions

This study presented several findings that raised questions about their overall impact on competitive advantage and program success. The most diverse area dealt with program's interpretation of the value of student research projects. Perspectives ranged from no research involvement for students to the requirement of a completed group project prior to graduation. Faculty who were interviewed had varying opinions on the process as well. Currently, neither the accreditation commission nor the APTA has a policy on student research projects. Faculty within the study also seemed to disagree on the overall perceived value. One concept that was consistent across programs was the desire to have students understand the value of research and its impact on

clinical practice. How best to establish this process needs extensive investigation.

The second most diverse area dealt with the development of professional responsibility. A majority of the programs have curricular components that educate students on their social responsibilities. In addition, several of the programs suggested that faculty modeling was the best form of professional education. Others have implemented professional activities outside of class requiring students to experience the process. All together, this study revealed significant variation in student professional preparation. As a consequence, the lack of consensus on this issue precluded its inclusion as a part of competitive analysis. Further research in this area is suggested.

Both of these areas will require detailed research to determine their overall impact. In addition several other aspects not evaluated in this study need to be addressed in the future.

#### Future Research

To substantiate the claims made in this study, an analysis of lower ranked programs should be performed to determine the extent of competitive strategy within these programs. In addition, a more concentrated evaluation of internal and external focus on all levels of programs might reveal significant variances in program success. It stands to reason that less successful programs suffer from inadequate appreciation of their potential strengths and weakness. As a consequence, it would also be valuable to look at a study that assesses the

impact of educating a program's faculty about the benefits of understanding competitive strategy. Finally, this study did not include student perspectives: additional studies should cross compare results of faculty with students to see if the buyer's perspective equates to the program's perceptions.

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Dissertation Title: Determining the Competitive Nature of Physical Therapy Education: A Multi Case Study Design

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APPENDIX

DATA ANALYSIS TABLES

ON CD ROM