

## ABSTRACT

Interdisciplinary service-learning (IDSL) has become a staple of healthcare education over the last two decades as a mechanism of training students to provide cohesive, team-based health care in a complicated and sometimes fragmented health care system. This case study describes the perceived learning of Doctor of Physical Therapy (DPT) students from [Blinded] University who attended a week-long interdisciplinary, interuniversity service-learning trip in rural [Blinded]. Qualitative data from two consecutive year teams (n = 26) were collected via surveys and focus groups and thematically analyzed for motivation to attend the trip and perceived learning. Intrinsic motivation to “give back” and desire to hone professional skills were the primary drivers for desiring to attend the trip. Three themes of perceived learning that emerged were 1) impact on core values, 2) perceived improvement in para-clinical (soft) skills including interdisciplinary fluency and cultural competence, and 3) improvement of clinical (hard) skills. The dominant theme was the impact the trip had on students’ core values. The learning occurred predominantly in Bloom’s affective domain and aligned with the physical therapy profession’s Core Values and Code of Ethics

### **Physical Therapy Student Learning Perspectives in a Volunteer Interprofessional Interuniversity Service-Learning Opportunity: A Case Study Report**

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The concept of interdisciplinary healthcare had its roots during the post-WWII third party insurance expansion and further expanded with the advent of Medicare during Lyndon Johnson’s presidency (Baldwin, 1996; Hammick et al., 2009). It further emerged as a healthcare educational model at the turn of the 21<sup>st</sup> century when the Institute of Medicine advocated for the inclusion of interdisciplinary healthcare training in health care education curricula (Committee on Quality of Health Care in America, 2001). Since that time,

interdisciplinary service-learning (IDSL) has emerged as a vehicle to aid in the training of healthcare practitioners in the interdisciplinary practice model, and most institutions training healthcare providers now include IDSL opportunities for their students (Sabo et al., 2015; Stewart & Wubbena, 2014).

The rationale for interdisciplinary care, particularly in medically complex cases, and/or medically diverse institutions operating in a fragmented medical system is that no one can deliver quality healthcare in a vacuum, and that healthcare delivered in an interdisciplinary fashion can lead to improvements in patient care and lowered healthcare costs (Mitchell et al., 2010; Zwarenstein et al., 2009). Therefore, it is incumbent among healthcare educators to develop interdisciplinary learning opportunities for their students.

In the IDSL model, students participate in real world clinical interactions with patients and other healthcare practitioners under faculty supervision. Healthcare students in medicine, physician assisting, pharmacy, dental hygiene, dentistry, physical therapy, occupational therapy, social work, and nutrition science may benefit from these experiences by increasing their knowledge of and comfort levels with other healthcare disciplines (Bouzaher et al., 2020; Fries et al., 2013; Infante et al., 2015; Johnson & Howell, 2017; Neill et al., 2007). Students also seem to benefit by better understanding and improving comfort levels with the cultures they serve (Cerny et al., 2018; Chen et al., 2012; De Leon, 2014; Long, 2016; Martinez-Mier et al., 2011).

Learning appears to take place primarily in Bloom's affective domain, particularly in the area of professional development. This includes acquisition and/or development of attributes and values such as compassion/caring, team building, communication, empathy, professional autonomy, and altruism/integrity (Cerny et al., 2018; Crandell et al., 2013; Flinn et al., 2009; Neill et al., 2007; Wise & Yuen, 2013). Debate still exists, however, in what if any learning takes place in IDSL experiences. Yorio & Yee (2012) conducted a meta-analysis and found support for service-learning in the areas of understanding social issues, increased personal insight, and cognitive development. Celio et al. (2011) reported students demonstrated improvement in personal attitudes toward self and social skills, attitudes toward their education and academic performance, and increased motivation for civic engagement. Conversely, a recent systematic review by Stetten et al. (2019) suggested that there is not sufficient evidence to reach any global conclusions regarding the efficacy of interprofessional service-learning.

### **Program Description, Implementation, and University Support:**

The Farmworker Family Health Program (FWFHP) is an interuniversity, interdisciplinary program that provides medical care for migrant farmworkers and their children at a location 4 hours from the authors' university during the last two weeks of June of each year (Connor et al., 2010; Emory University, 2021; Nichols et al., 2014). Faculty and students from four public and two private universities comprise the team and attend the program. Disciplines include nurse practitioner, nursing, pharmacy, physical therapy, psychology, and dental hygiene. Students perform the services under faculty guidance and typically see 200 school children from migrant farmworker families and 600+ migrant farmworkers. The children are seen in the school setting in the

mornings, and the farmworkers are seen on location in the evenings. Physical therapy services are split between this program and another local DPT program, with each program staying for 1 week.

The successful implementation and delivery of interdisciplinary service-learning experiences in any institution is greatly facilitated in part by 1) a university culture of service, 2) support at all levels of the organization from departmental to university executive leadership, 3) optimism of faculty, 4) time and financial provision for faculty and students, and 5) cooperative and willing partner communities. Conversely, barriers can include fragmented views of service-learning, restricted engagement of faculty and students due to time constraints, limited recognition, or financial constraints (Stetten et al., 2019; Uy, 2019).

This university has provided strong support for this initiative at all institutional levels. The program chair, dean, provost, and university president all offered full support of the initiative from its inception, and they all continue to provide support each year. The university as a whole maintains a strong culture of service driven by the university ideal which reads in part: “to find joy in doing rather than dreaming; to be prepared for service; to be...confident of the limitless reaches of human endeavor” ([Blinded] University, 2021). To this end, the university administration makes provision in the way of time and administrative support for service endeavors. The DPT professors create flexibility in assignments for team members who attend the service-learning trip. By design, students lead fundraising projects to meet the financial obligation of the trip and do not receive institutional financing. This serves the purpose of learning and exercising soft skills such as fundraising, entrepreneurship, community engagement, and marketing/publicity. A substantial portion of the funding each year comes from the local community and donors who appreciate the university’s commitment to community service.

The FWFHP is a high priority for the [Blinded] DPT program, not only because of the university and department’s commitment to service, but also because of the program’s curricular alignment with the experiential model of education. The experiential model of education is defined by Kolb as “the process whereby knowledge is created through the *transformation of experience* [and] results from the *combination of grasping and transforming experience*” (italics added for emphasis) (Kolb, 1984). This is manifested in the curriculum as a form of practice-based education that provides early opportunities for students to reciprocally apply their classroom learning in the clinical setting and intentionally bring back clinical experiences to propel learning. (Hakim et al., 2014) Students begin a year-long structured interdisciplinary clinical experience called the Early Mobility Program (EMP) at a local hospital in their second semester of training, while they are transitioning from foundational science courses into clinical science courses (Thigpen et al., 2016). Students attend the EMP four hours a week for three semesters. Students progress into their first full time clinical experience in the subsequent semester of their training. As a result, students attending this IDSL trip have completed 180 hours in the hospital EMP and 240 hours of clinical education experience in traditional PT clinical settings prior to the trip. The FWFHP offers students an interdisciplinary educational experience in the gap between early clinical training and long-term clinical rotations.

This descriptive case study sought to gain insight into what motivated students to attend a voluntary IDSL experience and also what they perceived they learned after attending the trip. Research questions included:

1. Why are DPT students motivated to attend an intensive, short-term, interuniversity, interdisciplinary service-learning trip?
2. What do DPT students perceive they learned by attending such a trip?  
Specifically:
  - a. What do they feel they learned cognitively?
  - b. What do they feel they learned from a psychomotor standpoint?
  - c. What do they feel they learned affectively?

## Methods

### Data Collection:

The project was approved by the Institutional Review Board of [Blinded] University. This is a descriptive case study of two separate DPT service teams experiencing the same bounded phenomenon (the FWFHP) in consecutive years (Butina et al., 2015; Cresswell, 2008; Ebneyamini & Sadeghi Moghadam, 2018). A theoretical thematic analysis was the primary method of data analysis (Braun & Clarke, 2006, 2012). In the first phase of data collection, a purposive sample of the 13 students who attended the program in the first year of data collection were interviewed in focus group format. The semi-structured interview was administered by one of the investigators with open-ended questions that led to follow-up questions. Guiding questions consisted of two primary topics: initial motivation for attending the trip and the benefits of attending the trip. The recording of the interview was transcribed and initially coded by the principal investigator and two other investigators. Once the initial coding was completed, the data were analyzed for patterns and potential gaps in the data set that would merit further investigation. This included inquiring more deeply about students' initial motivation for attending, as well as what they would tell other potential students about the trip.

In the second phase of data collection, purposive sampling included students attending the program in the subsequent year. These 13 students were first given a short questionnaire with open-ended questions that the investigators used to guide the second focus group interview. The second-year focus group interview was conducted 4 weeks after survey administration by the same investigator as the first year focus group, and the data was transcribed and initially coded by the principal investigator and two investigators different from the first year.

### Data Analysis

Data from the group 1 focus group and the group 2 survey and focus group were compiled into a first cycle master coding document by the primary investigator. The first cycle compilation of in-vivo codes were divided into two sections: students' initial motivation for attending the trip and their perceived benefits after attending the

experience. Three categories of codes emerged from the first section and 10 categories emerged from the second section (Table 1).

**Table 1.** Categories of Students' Initial Motivation for and Perceived Benefits from Attending Service Trip

Category	# of responses
<b>Motivation for Attending</b>	
• Desire to give back	23
• Intrinsic motivation (calling)	17
• Improve knowledge and skills competence	14
<b>Perceived benefits</b>	
• Changed life view	31
• Increased desire to give back	21
• Increased awareness of the struggles of others	20
• Increased empathy	10
• Increased attitude of thankfulness	7
• Increased professional behaviors	21
• Increased skills in working in interdisciplinary setting	19
• Increased cultural competence/humility	18
• Increased communication skills with patients	13
• Improved clinical knowledge and skills competence	42

Second cycle coding (Saldaña, 2013) was performed to identify emerging themes and how the various categories and themes might be related to Bloom's domains. From the 13 original categories, three themes emerged. Additionally, each code in each category of codes was assigned a dominant Bloom domain. Some codes were assigned a dominant and a secondary Bloom domain as they had elements of both. As shown in Table 2, Bloom's affective domain was the dominant domain.

A final analysis of the data looked beyond how the emergent themes related to Bloom's domains and explored how, in the context of this case study, the Bloom's domains of learning were related to the American Physical Therapy Association's (APTA) Core Values and Code of Ethics documents (American Physical Therapy Association, 2010, 2019). These are documents that define and guide professional and ethical behaviors in the clinical practice of physical therapy.

**Table 2.** Number of Codes Assigned to Each of Bloom’s Domains

<b>Bloom’s Domain</b>	<b># of responses</b>
Affective	179
Cognitive	84
Psychomotor	28
Codes above with 2 assigned domains*	34

\*Some categorized codes had elements of 2 domains

## Results

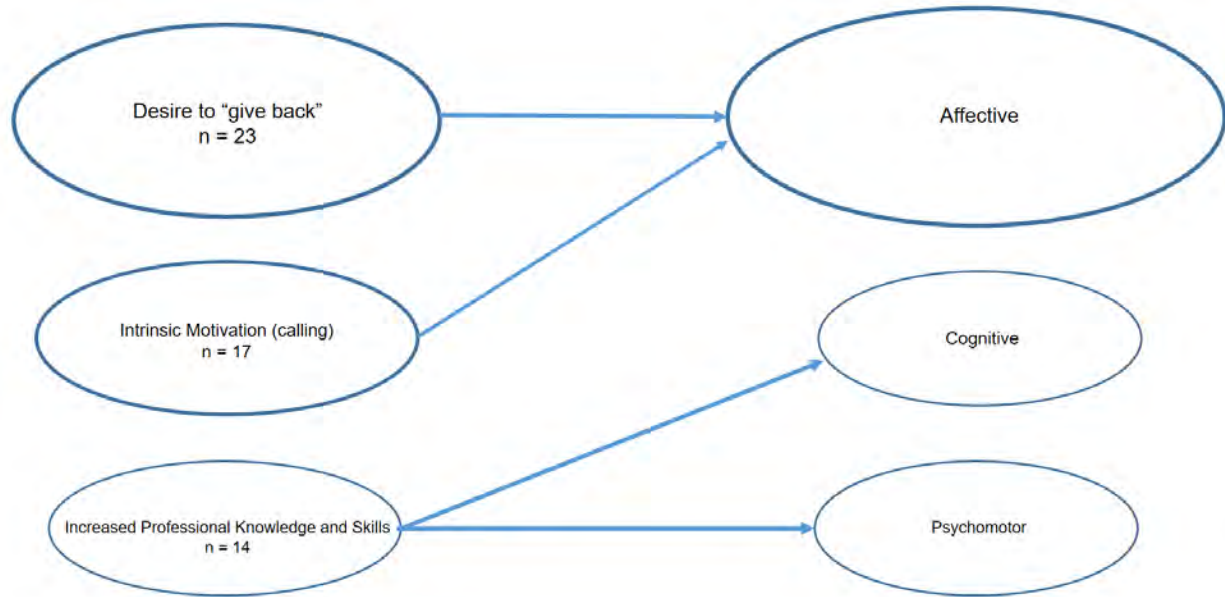
### Student Motivation for Attending:

Intrinsic Motivation and “Giving Back.” Intrinsic motivation forged from life experience and a desire to “give back” emerged as dominant categories. Some students on the teams grew up in farming families. “[My] family gets to know the migrant workers and appreciates them. [This] population helps the family, so I wanted to return the favor— [there is] a personal connection” said one student. Another student with a family farming background stated that “farmers would be lost without them (migrant workers) and depend on them. They deserve healthcare.” In contrast, other students grew up in or had close connections with migrant farmworker families. One student stated that the experience allowed the opportunity to give back “to people that are in a situation similar to what I have been in.” Another stated that the motivation came from “my family working in the farms when they first came to this country.” Another, drawing from a related personal experience stated “growing up I was undocumented with no health insurance. My dad is still undocumented and does not have health insurance, so this is a population I am really passionate about.” Finally a few students who did not have any previous context remarked that they have simply been “called to a life of service,” and “getting involved in the community with patients was a no-brainer” for them.

Opportunity to hone clinical skills: Students also perceived the opportunity as a way to increase their clinical knowledge and skills at an opportune time in their training. The service trip occurs in the summer prior to full time clinical experiences in their final year of education. Since the patient/client bases are migrant farm workers and their children, students have the opportunity to work in both pediatric and adult populations. One student thought it would be a “good opportunity to take part in the world of PT and get an early taste of what life would be like as a clinician.” Another stated that the “initial instinct was to get the hands-on experience for my clinical professional skills.” Another student mentioned the interdisciplinary opportunity by stating “it would be interesting to work with other disciplines....”

The motivations and expectations of these students prior to attending the trip touch on all three of Bloom’s domains, with affective motivation being the most dominant. As a group, students desired to participate in a complete, multi-dimensional educational experience (Figure 1).

**Figure 1.** Students' Initial Motivation for Attending Service-Learning Trip



**Perceived Benefits:**

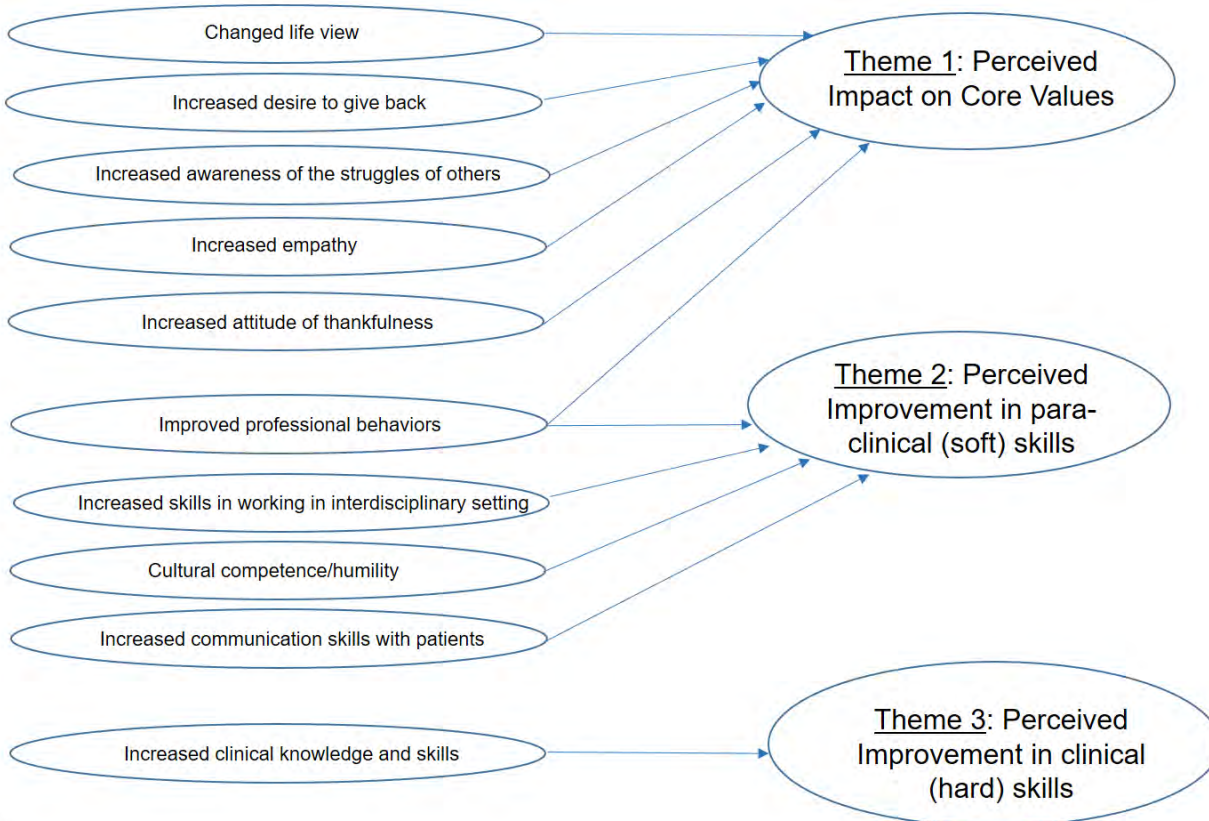
Three themes emerged during second cycle coding on the benefits of the service-learning trip: 1) impact on core values, 2) improvement in para-clinical (soft) skills, and 3) improvement in clinical (hard) skills (Figure 2).

**Theme 1: Impact on core values**

Changed life views: When asked what they may tell upcoming students about the trip, many of the students commented on how profoundly the experience changed them. “This trip will change you as a person and a professional on an indescribable level. [It] will impact the lives of others, while also challenging and enhancing your own clinical skills.” “It was hands down the most valuable experience I have had in PT school thus far” remarked one student. Another stated, “This trip has permanently changed me...my view on what it means to be a migrant farm worker.... It solidified my duty to serve those in need.”

Categories related to changed life views included 1) increased awareness of the struggles of others, 2) increased thankfulness for what they have, 3) increased desire to give back, and 4) increased empathy.

**Figure 2. Students' Perceived Benefits from Attending Service-learning Trip—Categories and Emergent Themes**



Increased awareness of the struggles of others. Regarding the increased awareness of others' struggles, one student commented, "The most eye-opening thing for me was going out to the farms and picking the vegetables and seeing the working conditions they have. They're out there from sun up to sun down. We were only out there for an hour and a half, two hours, and I was exhausted." Another student reflecting on seeing a farm worker with type II diabetes who underwent a toe amputation remarked "it was very eye-opening that this person literally was bleeding...from his amputation...and risking infection...because he didn't want to go [back] to his home country. That's how much better he felt it was here. That can put something in perspective."

Attitude of gratitude. Regarding increased gratitude, a student with a family history of farm working stated that "[my] dad and uncles had to do this when they first came to this country. It made me appreciate what they have done for me to have a better life." Others remarked that "the big takeaway was how blessed I am and the opportunity that I've been given for education..." and "the whole experience made me more appreciative of the things I have."



Empathy. Related to increased gratitude was increased empathy. A student reported that the experience “helped me grow in compassion because I felt like before I was very analytical with patients.” Another stated that the experience “enhanced my empathy. It gave me a new bar...to have more empathy and to look at things from another person’s perspective.” Another student remarked that they “took away empathy” especially “learning about their living situations and their injuries. We have no idea who suffered so that we may put food on the table.” Another student grappling with the lifestyle led by farmworkers remarked that “the sacrifices these workers make for their families is something I can never come close to understanding, but I now see the multiple challenges this poses for individuals on these farms.”

Giving back. Some students expressed receiving a strong motivation to give back, while other students related that the trip served to increase their pre-existing desire to give back. “The program increased my awareness for the need for pro-bono work.... It also made me realize that there are more underserved communities and people with low access to healthcare than I originally thought.” “I think this impacted me personally by instilling a greater drive to volunteer and help those that may be less fortunate than I am,” remarked another student.

Theme 2: Impact on para-clinical skills.

Professional behaviors. A category that emerged that has thematic underpinnings in both the core values and para-clinical skills themes was professional behaviors. Things such as maintaining composure in a hectic environment, working efficiently when tired, establishing rapport quickly, and working as a team player in a fluid environment were all professional skills students brought up. A student remarked that “getting out of your comfort zone and be able to reason and think through and interact when you are really tired” was a valuable lesson learned. Teamwork in a fluid environment was addressed by one respondent: “Regarding teamwork...I think one reason we were so successful is because we were all willing to work together and were very flexible.” Regarding rapport, a student mentioned that “the personal connection that you have with the patient...how beneficial that can be...that someone cares for them.”

Communication skills. Students were also faced with “having to work with language barriers,” and grappled to elevate their non-verbal and interpreter-based communication skills. One remarked that “working with someone translating...sparked an interest in learning a new language...or at least learning basic phrases...to help with future treatments.” Conversely, another remarked that when an interpreter was not available, “learning how to read peoples’ body language and work with the limited amount [of language] that you had” was valuable.

Cultural competence. Students were exposed to the farmworker culture and lifestyle, which “is so different than what I’ve ever seen.” One student stated that it was valuable “to work with their kids and see how their culture has affected their childhood. Also, being able to see the living conditions of the farmworkers and their working conditions.” One student, becoming aware of farmworker living conditions, began asking

the farmworkers specific questions so “that I wouldn’t come up with a care plan that included ice when they didn’t have a freezer.” One student remarked that “I am more prepared to work with patients from a different background than me [because] we all speak the language of health.”

Increased interdisciplinary skills. Being an interuniversity, interdisciplinary experience with students working in close proximity afforded spontaneous opportunities for students to interact with and observe students and faculty from other healthcare disciplines. “We were in close proximity where we could watch them (other disciplines) over the same aisle...so we had to interact.” One student appreciated a visit from a nurse practitioner student who accompanied the patient to the PT tent. “They were able to give us more in-depth background than what we got on the intake sheet. We were able to incorporate that into... [the] examination, and it shaped what we were thinking.” “It also makes us [have to] ...explain what we’re actually doing...to someone else who kind of understands the language.” Finally, one student remarked that it “reinforced the importance of interdisciplinary care and how to work as a team...to provide the best care to the patient.” Another student remarked that the experience was “a good opportunity...to see the impact health care professionals have as a whole.”

Since the physical therapy profession has continued to evolve into an autonomous profession, offering direct access to patient care, the ability for a PT to know when to refer a patient to another practitioner has increased in importance, and the trip gave students opportunities to hone this skill. In the FWFHP, patients state at intake if they want comprehensive care or primarily want to be seen by the student physical therapist. As a result, students practiced their professional obligation to make referrals as needed. “There were several patients I had to refer to nursing due to non-musculoskeletal problems” remarked one student. In referring to scope of practice, one student remarked that “knowing when to refer to nursing or pharmacy, or when it was in our scope [of practice] or it wasn’t” was a valuable experience.

### Theme 3: Impact on clinical (hard) skills.

Many students reported the experience helped them gain confidence in their clinical skills. One student mentioned they got “the confidence that skills are there that you didn’t know you had until you had to use them right there.” Another remarked that they became “more confident and comfortable with working with children and administering the [assessment tools].” “Going [on this trip] was a good review of musculoskeletal disorders...and what we are learning in differential diagnosis. I was able to practice my hands on skill set.” Another mentioned that “we saw a lot of differential cases that I’ve never seen before; eye opening.” Others mentioned that they “evaluated more patients during that week...than in my entire 6-week clinical rotation, and “I had to be more aware of red flags and was able to catch some potentially [life] threatening conditions.”

In commenting on the uniqueness of the situation (a single visit to impact the patient), one student remarked about the challenge of “creating a treatment/intervention plan that is going to be effective for what they need in a short amount of time with the resources we have.” Others mentioned “I learned how to be creative...in my

interventions because we were limited in what resources we could physically bring down with us, but also what they had in their living situations that we could use to incorporate appropriate treatments.” Another student remarked that “optimizing what you can do for that person in one visit” was challenging.

Students mentioned efficiency and efficacy were important elements of time management because “there was a line waiting for us and only so many [of us]. We try to help as many people as we can....” Another student mentioned the trip afforded the opportunity to “think quickly on my feet...and then choose something that I thought was going to help.” Regarding efficient documentation, one student mentioned “being thorough with documentation, but...short and concise.”

## Discussion

The student commentary suggests that the students both expected and perceived the experience as a comprehensive learning experience. The emergence of three categories of motivations for attending and ten categories of perceived benefits suggests the students “didn’t know what they didn’t know,” and that the experience exceeded their expectations. The three motivational categories and ten perceived benefits categories also show good alignment with the three domains of learning as described by Bloom (Armstrong, 2010). The students were motivated to have a complete multi-dimensional learning experience, and the trip seemed to deliver on those expectations.

### Theme 1: Perceived impact on core values.

Bloom’s affective domain was the most dominant, with 179 assigned codes, followed by cognitive with 84 assigned codes and psychomotor with 28 assigned codes. Five categories were clearly affective and contribute to theme 1—perceived impact on core values (Figure 2). “Changed life view” can be considered an overarching category that was driven by the other four codes. A changed life view evolved around students processing what they saw in the struggles of others. This is at the core of Compassion as defined by the APTA as “the desire to identify with or sense something of another’s experience.” (American Physical Therapy Association, 2019) Witnessing the struggles of others, paralleled by an attitude of thankfulness for what they have, and increased empathy, students perceived this experience to have a profound impact on their values. The integration of these experiences can be strong motivators to take action and “give back.”

Core values are the foundation for developing professional behavior. Values are deeply held beliefs that are often laid down early in a student’s development, and some may argue that core values do not change very much over time. However, the hierarchical structure of Bloom’s affective domain seems to indicate the development and expression of core values can change over time based on life experiences. For example, in order for a student to perceive an impact on their core values, the student must have a desire and willingness to receive new information or experience new situations that may challenge their comfort and their previously held ideas about

themselves, others, or the world. This comes from life experience, and students must see and embrace the value in such experiences.

Many of the students attending the trip had a strongly developed, preexisting level of affective professional development, and this quality actually may have driven their desire to attend the experience. A study performed on PT students from another university attending the same FWFHP in a previous year found that students desiring to attend the trip, who were not selected to go, exhibited a similar degree of professional behavior development as students who attended the trip. Both groups exhibited a greater degree of professional behavior development than students not motivated to attend (Anderson et al., 2014). Still, the expression of core values through behavior can change over time based on life experiences and other factors such as self-reflection. Core values can mature when different values are emphasized or enhanced at key times within one's personal or professional life journey. This experiential learning trip appears to have allowed that to happen.

## Theme 2: Perceived improvement in affective skills.

Professional behaviors bridged perceived impact on core values (theme 1) and improvement in affective skills (Figure 2). This bridge encompasses practical patient interaction skills and touches on the APTA core values. Such soft skills as “thinking on your feet,” maintaining a professional demeanor when fatigued, adapting fluidly to a rapidly changing environment, quickly establishing a healthy rapport, and negotiating language barriers are all essential professional skills exercised often in daily clinical practice. Being successful in these skills, however, requires the possession, integration, and internalization of core values such as compassion and caring, collaboration, accountability, altruism, and integrity (American Physical Therapy Association, 2019).

Other interrelated categories in professional behaviors are 1) increased skills in interdisciplinary settings, 2) increased communication skills with patients and 3) increased cultural competence/humility. The interuniversity, interdisciplinary nature of the program afforded students opportunity to interact with faculty and students from nursing, nurse practitioner, pharmacy, and dental hygiene. Students had the opportunity to gain a better understanding of how each of the disciplines operate and how they are interrelated to each other. Being in a time bounded microcosm of the health care system, students were able to experience an intense and accelerated phenomenon in action.

The second aspect of the interdisciplinary experience was to go beyond understanding the scope of practice of the various professions and learn the *medical dialects* of the various disciplines. Part of the value of the interdisciplinary experience appeared to be improved dialectic expressive and receptive fluency in order to communicate in what one student alluded to as “the common language of healthcare.” Having the opportunity to understand interdisciplinary scope of practice coupled with the ability to communicate via different professional dialects in a shared health care language was very valuable to the students.

In line with communicating with other health care providers was communicating with patients. A majority of the farmworkers and their families were from Mexico and spoke Spanish. In general, the children were more fluent in English, but the adults knew

very little English. Some team members and a faculty member were fluent in Spanish, and there were interpreters intermittently available. This required students to sometimes use body language, eye contact, facial expressions, and a few Spanish words they were learning in real time, to communicate with patients.

Communication across health care disciplines and communicating with patients speaking different languages goes beyond understanding the language or understanding how to communicate through interpreters, it speaks to understanding culture. Each health care discipline has its unique culture, and certainly in this bounded experience, the farmworkers and their children had a unique culture. Students had to learn not only how to communicate in Spanish, through interpreters, or through body language, but also in the context of the patients' culture, so that, as one student mentioned, "I wouldn't come up with a care plan that includes ice when they don't have a freezer."

This evolution of thought implies the development of cultural humility. Students perceived a shift from a simple cognitive awareness of cultural differences to a deeper understanding and compassion towards individuals. The relationships formed in this experience facilitated more appreciation and gratitude towards farm workers, as students began to challenge previous thoughts and feelings. This shift suggests that students moved from cultural competence towards cultural humility. Cultural competence is a staple in medical professional education; however, the tenants imply that once the knowledge is gained, the student has mastered the concepts (Yeager & Bauer-Wu, 2013). During this immersive service-learning experience, students practiced self-reflection and suspended prior assumptions with keen observations into a different culture demonstrating an evolution towards cultural humility. Cultural humility is an ongoing process of self-reflection and discovery in order to build honest and trustworthy relationships, and it has emerged as an important practice for health care professionals (Naber et al., 2021; Oosman et al., 2019; Yeager & Bauer-Wu, 2013).

While students grew towards cultural humility towards individuals who spoke a different language, lived in unfamiliar communities, and experienced harsh working conditions, they also grew to respect different professions on the interdisciplinary team. Students solidified learning about different professions and scopes of practice that built upon previous curricular multidisciplinary simulation-based experiences. Students grew to value and respect peer colleagues from different professions and schools. By the end of the week, students were initiating collaborative multidisciplinary assessments stating they were "way more comfortable by the last day" and were able to "see the impact ...health care professionals have as a whole."

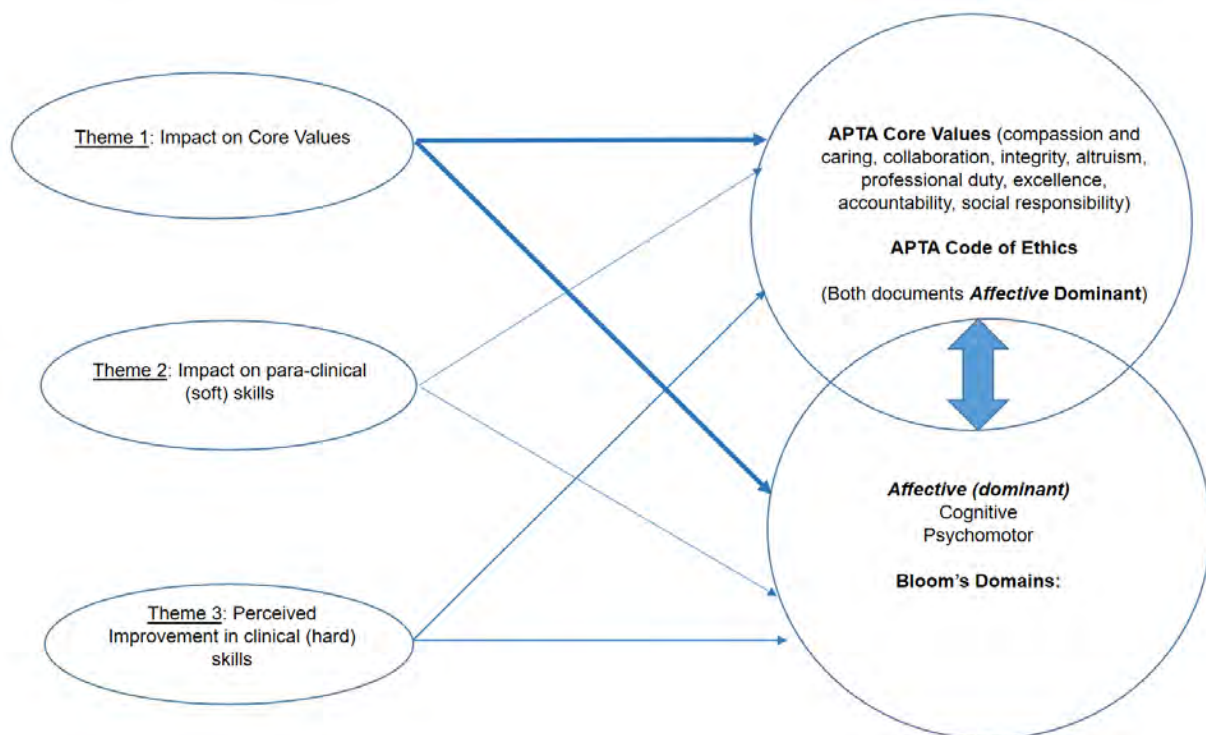
### Theme 3: Increased clinical knowledge and skills.

The two subcategories that bridge Bloom's cognitive and psychomotor domains in this theme are students' perception of gaining clinical knowledge and gaining proficiency in their manual skills. Many of the codes in this theme were assigned to both cognitive and psychomotor domains, as the knowledge/skill set is learned in school and executed in the clinic as merged domains. During the initial patient interview, the student must plan which psychomotor tasks are to be executed in the objective examination. After completing the objective examination, the student analyzes the data,

makes an assessment, and formulates a treatment plan, which often includes a psychomotor component. As the patient responds, students modify their assessments, and plans are modified. Students perceived a unique opportunity to hone and integrate these skills in a fast paced, demanding, fluid environment and articulated an increase in confidence as they prepared for their full-time clinical rotations during the next semester.

The three themes that emerged from the data relate directly to Bloom’s domains and also to the APTA Core Values and Code of Ethics documents (Figure 3) (American Physical Therapy Association, 2010, 2019). Additionally, aspects of the Code of Ethics that align with the emergent themes are 1) the respect of dignity and rights of individuals, 2) integrity in relationships with patients, families, colleagues...and other health care providers 3) meeting the health needs of people locally, nationally, or globally, 4) lifelong acquisition of knowledge skills and abilities, to name a few. There is strong commonality between the APTA documents and Bloom’s domains, and most of the overlap occurs in the development of affective behaviors.

**Figure 3.** The Relationship between Emergent Themes, Bloom’s Domains, and APTA core documents



## Conclusions

In this case study, DPT students perceived benefits from attending this service-learning trip in the cognitive, psychomotor, and affective domains of learning, with the primary domain being affective. More specifically, learning appeared to be linked to core professional values and the internalization of these values. Comparison of student pre-

and post-trip comments suggested that students “do not know what they do not know” and that the experience far exceeded their expectations. Additionally, a university culture of service is essential for faculty to conceptualize and facilitate these types of interdisciplinary, interuniversity experiences. The successful implementation of IDSL experiences such as the one described in this study is only possible with strong, pragmatic support from departmental, college, and university leadership.

## Limitations and Future Research

This is a qualitative descriptive case study, which, by design, offers more flexibility, but lacks the rigor of other qualitative approaches. The study primarily speaks to student perceptions of learning, and as a result, the data are described and discussed without offering any theories or key assertions. Future research can be aimed at learning about why students may not be motivated to attend or what deterrents exist that preclude students from participating in IDSL opportunities. Research can also be geared toward better understanding how immersing students in a culture of service within a contained educational program translates into internalization of service in personal and professional lives after graduation.

## Disclosure Statement

The authors report no conflicts of interest.

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