THE IMPACT OF COVID-19 ON DPT STUDENT AND FACULTY EXPERIENCES: A
GROUNDED THEORY STUDY

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DEDICATION

I dedicate this to the tenacious, brave, and resilient students and faculty who made it through

the beginning of the COVID-19 pandemic and those students and faculty who persevere as the

pandemic continues.

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ABSTRACT

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MAY 2022

The COVID-19 pandemic significantly changed the way that physical therapists provide
care to patients, as well as the way physical therapy students and faculty learn and teach,
respectively, in Doctor of Physical Therapy (DPT) programs. Students and faculty quickly
changed their teaching and learning methods when the curriculum was abruptly switched from
all in-person instruction to all online. The purpose of this study was to develop a grounded
theory surrounding how the COVID-19 pandemic and its associated challenges impacted
students and faculty in a single DPT program, including their experiences, expectations,
relationships, and interactions. Participants were recruited via email and word of mouth. This
study included participants from Texas Woman's University's (TWU) School of Physical Therapy
at both the Dallas and Houston campuses. Participants included 26 students (23 female; three
male) and 10 faculty (eight female, two male). Ten of the students were in their second year,
and 16 of the students were in their third year of PT school at the time of data collection. Six
student focus groups of three to five participants and 10 individual faculty participants were
conducted via interviews held on Zoom. Each participant answered questions from a semi-
structured interview guide surrounding how COVID-19 impacted their experiences as students
and faculty in a DPT program. Results of this study surrounding the grounded theory of
resilience in students and faculty during COVID-19 contained three major categories: Prioritizing
Mental and Physical Health, Adaptation of Teaching and Learning Styles, and Enhanced Non-
academic Expectations Between Students and Faculty. The results of the study suggest the
need for measuring and developing shared resilience in DPT students and faculty in order to
create a positive program environment and experience.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Graduate-level students often form connections with faculty in many different ways throughout their curriculum (Adams, 2013; Anderson & Carta-Falsa, 2002). Doctor of Physical Therapy (DPT) programs are specific graduate-level academic environments where students and faculty interact often and relationships evolve over time. The relationships formed between students and faculty in a DPT program can be influenced by positive and negative factors. Various interactions, expectations, and learning experiences occur between students and faculty that make their relationships effective (Anderson & Carta-Falsa, 2002; Presicci, 2020). Mode of instruction can also influence the dynamics between students and faculty (Adams, 2013; Ahmad & Tarmudi, 2011; Donlan & Alpert, 2018; Rose, 2020). The social and academic circumstances of a DPT program can create a positive teaching and learning environment for students and faculty, but these circumstances can also create a toxic environment for students and faculty.

The onset of the Coronavirus Disease 2019 (COVID-19) pandemic changed the academic environment for many students and faculty from face-to-face learning to all virtual learning for a period of time (Wainwright & Brueilly, 2020). COVID-19, a novel respiratory viral infection, began spreading throughout the world in the fall of 2019 (Centers for Disease Control and Prevention [CDC], 2020). The spread of COVID-19 in the United States began in January 2020. During the first months of the pandemic, many universities closed their campuses, leading to immediate suspension of in-class activities. Physical therapy (PT) programs were no exception. Depending on the institution, face-to-face instruction was suspended for approximately 2-6 months in an effort to prevent further spread of the virus. Many universities shifted all instruction to a primarily online format during this time. Many faculty who had not previously adopted online instruction pedagogy, were suddenly and unexpectedly forced to switch from face-to-face teaching to wholly online instruction (Wainwright & Brueilly, 2020).

Online delivery of course content and using virtual platforms may be functional and beneficial to PT students and faculty, but the sudden switch to a virtual teaching/learning environment led to a plethora of frustrations and stress. The transition from face-to-face to virtual learning at home combined with the lack of in-person contact can lead to isolation, difficulties separating work and home environments, and decreased motivation further compounding the stresses caused by the sudden switch (Rose, 2020). Experiences of students and faculty in a DPT program during COVID-19 have not been explored. It is also unknown how COVID-19 has affected the relationships, interactions, and expectations between DPT students and faculty. Understanding the impact of COVID-19 on DPT student and faculty experiences over the first 18 months of the pandemic can guide future students and educators towards creating a more positive teaching and learning environment amid the "new normal" of social and academic circumstances.

Problem Statement

A thorough literature review revealed a gap in evidence surrounding the influence of sudden and unexpected shifts in mode of instruction and pedagogy on the experiences of students and faculty in a graduate level DPT program. Investigating and understanding the impact of COVID-19 on DPT student and faculty relationships, expectations, and interactions can lead to promotion of success for students and faculty in PT education.

Existing research examines the efficacy of both online and traditional instruction. A randomized control trial revealed no significant difference in these two methods of instruction in a DPT program (Lankveld et al., 2019). However, the lived experiences of students and faculty suddenly forced to switch from one method to another have not been researched. Investigating what strategies students and faculty utilized during this transition, and how these changes affected their relationships with each other, is important. Changes in learning strategies, content engagement, time management, use of feedback, and mental health of both students and faculty members are among many factors that may impact these groups during COVID-19 (Bjorklund et al., 2004; Perera et al., 2008). Although literature has investigated student and

faculty experiences in hybrid education (Adams, 2013; Ahmad & Tarmudi, 2011; Donlan & Alpert, 2018), the relationships and interactions that foster success for students and faculty in a DPT program after the onset of COVID-19 are unexplored. Understanding how COVID-19 has affected both students and faculty is important for guiding future physical therapy education in the "new normal" post-pandemic.

Research Questions

1. How has the onset of the COVID-19 pandemic impacted student experiences in a Doctor of Physical therapy program?

2. How has the onset of the COVID-19 pandemic impacted faculty experiences in a Doctor of Physical therapy program?

3. How has the onset of the COVID-19 pandemic impacted the relationships, expectations, and interactions between students and faculty in a Doctor of Physical Therapy program?

Purpose of the Study

The purpose of this grounded theory study was to develop a theory explaining the impact of COVID-19 on the shared experiences of students and faculty in a DPT program. This study aimed to describe the perspectives of students and faculty surrounding the sudden transition from face-to-face learning to primarily online instruction with slow return to in-person learning during the first 18 months of the COVID-19 pandemic. Understanding how COVID-19 has affected relationships, expectations, and interactions between DPT students and faculty can lead to further understanding of how to foster DPT student and faculty success.

Relevance and Significance

In March 2020, the national shutdown in the United States led to an unexpected and immediate shift of face-to-face PT lecture and laboratory instruction to an all-online format. In the summer of 2020, many PT programs were able to return to face-to-face instructional methods for completing psychomotor skill components of certain courses. Most institutions

returning to campus for lab-based instruction were following CDC guidelines to protect both students and faculty and prevent further spread of COVID-19 over the next academic year. These guidelines included maintaining a social distance of six feet between persons when possible, washing hands often, routinely cleaning and disinfecting frequently touched surfaces, and wearing personal protective equipment, such as a face mask for covering the nose and mouth (CDC, 2020). COVID-19 created a "new normal" for DPT curriculum, and the impact of this experience on DPT students and faculty is not yet understood. Understanding the effect of COVID-19 on DPT student and faculty experiences, relationships, interactions, and expectations can help create a learning environment that is beneficial and supportive for all current and future students and faculty.

Definition of Terms

1. Doctor of physical therapy student- A person enrolled in a DPT program.
2. Doctor of physical therapy faculty member- A person responsible for the instruction and education of a student or students enrolled in a DPT program.
3. Face-to-face instruction- An instructional method in which lecture and/or laboratory content is delivered with students and faculty physically present in the same instructional space at the same time.
4. Online instruction- An instructional method in which lecture and/or laboratory content is delivered virtually through an online platform.
   a. Synchronous online instruction- Online instruction delivered to students through Zoom, where students and faculty are virtually present at the same time and the lecture or laboratory content is delivered live.
   b. Asynchronous online instruction- Online instruction of lecture or lab material delivered to students through a pre-recorded presentation or video, where students and faculty are not present in an online platform at the same time.

5. Hybrid instruction- A teaching method that incorporates both face-to-face and online instruction.

6. Student-faculty relationships- The way in which students and faculty are connected.

7. Student-faculty interactions- The way in which students and faculty communicate.

8. Student-faculty expectations- Beliefs of students and faculty that the other will provide or achieve something.

Researcher Characteristics/Reflexivity

The primary investigator for this study was a full-time faculty member at Texas Woman's University Dallas campus from January 2019 until May 2020, and a full-time faculty member at Texas Woman's University Houston campus from August 2020 until May 2021. The two student researchers were part of the class of 2022 cohort on the TWU Dallas campus, making them first-year students at the onset of COVID-19 in March of 2020. The primary investigator and student researchers personally knew many of the participants in this study, which may have assisted with participant recruitment but could have also led to unintentional biases in the data. The primary investigator and student researchers were sure to practice reflexivity when performing data collection and analysis by considering only the data and not their own lived experience as part of the data.

Assumptions

1. The temporal distance between the sudden shift and when the data were collected did not influence the participants perspectives/responses.

2. Participant experiences and responses to interview questions were not influenced by the student researchers performing the focus groups or primary researcher performing faculty interviews.

3. Realities of the participants, researchers, and audience reading this dissertation may have differed, and the results of this study are context specific to one university in

Texas during from March 2020 until the time each participant was interviewed between April and August 2021.

4. The researchers attempted to practice reflexivity when performing data collection and analysis, but results may still have been influenced by the researchers' beliefs and values, as they were students and faculty from the same university from which participants were recruited.

5. Results of this study came from inductive reasoning, and the overarching theory and major categories are grounded in the data and were not set by the researchers prior to gathering data.

6. The goal of this research was to create a theory grounded in the data that explains the impact of COVID-19 on shared student and faculty experiences in a DPT program.

Limitations

1. Participants in this study were students and faculty from a single university in Texas with two separate campuses.

2. Data from this study was collected 1 year or later from the initial onset of the COVID-19 pandemic. This allowed time for students and faculty to reflect on their experiences, which may have impacted the results of this study.

CHAPTER II

LITERATURE REVIEW

The onset of the COVID-19 pandemic in fall of 2019 disrupted socialization, occupational workflows, and learning in institutions of higher education across the globe. DPT programs in the United States were part of the various higher education programs impacted by the rapid response to COVID-19. DPT students and faculty who were currently enrolled and teaching, respectively, during this time experienced changes in PT education that no others prior to them had faced before. To better understand existing literature on the DPT student and faculty experiences during the first year and a half of COVID-19, this chapter discusses use of hybrid education for DPT didactic and clinical experiences prior to COVID-19, as well as what is known about how the pandemic impacted healthcare students and faculty. This chapter also identifies gaps in the literature surrounding the experiences of DPT students and faculty, specifically pertaining to DPT student-faculty interactions, relationships, and expectations during and after the first 18 months of the pandemic in the United States.

Hybrid Learning in DPT Education

In March 2020, COVID-19 reached pandemic levels resulting in the need for universities to stop offering any face-to-face classes and laboratories. Because COVID-19 was a novel, highly infective respiratory virus, the CDC guidance included social distancing and density restrictions that made it impossible for universities to safely hold face-to-face class meetings. The sudden, unanticipated shift from on campus to online learning affected education in general and did not spare healthcare education in the United States. Because of the mandated closure of universities and risk of exposure at clinical sites during the onset of the pandemic, many healthcare education programs, including DPT programs, temporarily transitioned to be completely online, and many students were removed from their clinical sites (Gagnon et al., 2020). While hybrid learning has been historically used in conjunction with face-to-face learning in graduate education, online learning has not been used as the sole means of education in a

DPT program, as the importance of developing psychomotor skills via hands-on practice is an essential component in the training of PT students (Gagnon et al., 2020). The sudden change in setting and instructional delivery caused by the COVID-19 pandemic may have affected the DPT student and faculty experiences in ways that to date are unexplored.

Although there is no official system to benchmark the quality of PT education, a theoretical framework outlining excellence and innovation in DPT education was created by Jensen et al. (2017). The framework is based on previous studies of successful graduate education by the Carnegie Foundation. According to this framework, excellent DPT education consists of three main components: "a culture of excellence, praxis of learning, and organizational structures and resources" (Jensen et al., 2017, p. 863). The culture of excellence is largely based on shared beliefs and values, leadership and vision, drive for excellence with high expectations, and partnerships with clinical sites. The first of these shared values was mutual trust throughout the organization, implicating trust and respect as an integral part of the relationships between students and faculty (Jensen et al., 2017; Presicci, 2020). A shared vision and commitment to collaboration also contributed to the strong foundation of a DPT program. The learning praxis emphasizes, among other elements, practice-based learning. The researchers proposed that learning "for practice through practice" during clinical education and using the human body as the primary instructor are consistently at the center of DPT education (Jensen et al., 2017, p. 867). A second component of the learning praxis involves creating adaptive, active learners who "seek out and embrace feedback, reflect on and learn from their experience" (Jensen et al., 2017, p. 867). Faculty model these skills for their students and provide the opportunity to "safely struggle with the complexity and uncertainty of practice" (Jensen et al., 2017, p. 867). The third component of excellence in PT education, organizational structures and resources, is simply described as the need for the learning institution to support the PT program with appropriate resources and finances depending on the student class size and faculty needs (Jensen et al., 2017). Though this model of excellence and innovation in

physical therapy was created prior to the COVID-19 pandemic, hybrid education can still address the praxis of learning.

In order to create a more holistic view of quality in DPT education, Jette et al. (2020) compared the engagement theory of program quality for general graduate education to the model of excellence and innovation in physical therapy. The models agreed that a primary focus on shared vision, leadership, resources, learner-centered education, and transformation of stakeholders are the foundation of excellence in PT programs. Learner-centered education ultimately contributes to students' clinical reasoning skills and understanding of professional PT practice. Interactive teaching and learning facilitate this process, helping students transfer theory into practice and clinical reasoning, particularly when faculty model these skills, create education practices which facilitate learning, and give consistent feedback (Jette et al., 2020). The two models of excellence and quality in DPT education are centered around students learning through practice, with faculty modeling excellence and institutional support and resources supporting both students and faculty throughout this process. While the COVID-19 pandemic challenged views that only traditional face-to-face instruction could be described with quality and excellence, it remains unclear how unplanned, rapid transitions to hybrid or online education affect excellence in DPT education.

Hybrid learning in DPT education can be utilized successfully by students and faculty when implemented with care and careful construction (Bayliss & Warden, 2011; Gagnon et al., 2020; Mącznik et al., 2015). Its emphasis on self-directed learning matches well with adult learning theory, and therefore PT programming, because DPT students are adult learners (Gagnon et al., 2020; Physical Therapist Centralized Application Service [PTCAS],2020). Various DPT programs have incorporated hybrid learning as a primary mode of instruction prior to the pandemic, but not every DPT program has chosen to do so. The model of excellence and innovation in physical therapy places great value on creating adaptive learners, and adaptive learners tend to succeed in hybrid education (Adams, 2013; Jensen et al., 2017).

Previous research has investigated the feasibility of incorporating hybrid learning in DPT curriculum (Adams, 2013; Boucher et al., 2013; Havens et al., 2020), but limited literature has documented the experiences of DPT students and faculty forced to switch unexpectedly from traditional to all online and hybrid learning modes after the onset of COVID-19. According to Gagnon et al. (2020), the faculty understanding of learning theory is important for the effective transition to a hybrid curriculum. Certain aspects of traditional in-person lectures cannot simply be delivered virtually with no adaptations. For example, some faculty may decide the best method for answering student questions is to present the lecture in a synchronous format to encourage students to ask questions live as the instructor is presenting, while other faculty may decide to post a pre-recorded video of the lecture and allow students to learn at their own pace and develop questions for a later time or assignment. Online courses should be tailored to their new format in order to maximize learning and engagement. The COVID-19 pandemic created a unique situation in DPT education as programs suddenly shifted to all online instruction at the onset of the pandemic and many programs subsequently incorporated hybrid learning into curriculum as the year 2020 progressed. It should be noted this hybrid method of instruction was not pre-planned, and thus, not equivalent to hybrid teaching methods used by established hybrid or blended DPT programs. Students and faculty in traditional DPT programs had to become adaptive learners in much less time than was desired for planning and implementing changes to courses taught in a face-to-face method.

Clinical Education During COVID-19

DPT education uses experiential learning in clinical settings to further develop psychomotor and interpersonal skills, clinical reasoning, and professionalism, both inside and outside of the classroom. In addition to clinical rotations, experiential learning can occur in a variety of environments including simulation, integrated clinical experiences, service learning, community patient resource groups, and progressional practice opportunities (Hoppes et al., 2005; Pritchard et al., 2016; Smith & Crocker, 2017). These active learning experiences can be

implemented prior to clinical rotations to improve student confidence and help them retain knowledge (Ohtake et al., 2013). Additionally, these experiences provide students the opportunity to practice psychomotor skills in a safe environment and reflect on their performance without the anxiety that a formal clinical rotation might provoke (Smith & Crocker, 2017). Prior to the COVID-19 pandemic, PT education relied heavily on in-person, hands-on practice of clinical skills to prepare students for entering clinical rotations. Pre-pandemic, some DPT programs had incorporated hybrid learning experiences within the curriculum for instruction of both didactic and laboratory instruction to reduce the need for classroom space, potentially decrease faculty preparation time, and prepare students ahead of time for practice of hands-on clinical skills in a face-to-face environment (Adams, 2013; Boucher et al., 2013; Lazinski, 2017; Veneri & Gannotti, 2014). Student satisfaction with hybrid courses is varied, as it is nearly impossible to replace actual hands-on practice and in-person feedback from instructors with online or hybrid materials and instruction (Boucher et al., 2013; Lazinski, 2017; Veneri & Gannotti, 2014). However, none of these previous studies investigated faculty's perspectives on incorporation of hybrid learning into the teaching of psychomotor skills required for PT clinical practice that occurred during COVID-19.

PT clinical education during the first 6 to 9 months of the pandemic also saw a significant shift in the use of telehealth PT sessions. Before the onset of the COVID-19 pandemic, telehealth was not widely utilized by PTs, but by July 2020, nearly 50% of surveyed therapists were using telehealth weekly for a number of visits (American Physical Therapy Association [APTA], 2021). The shift in use of telehealth was facilitated by temporary changes in legislation and payment systems that allowed telemedicine and telehealth as an option for patients receiving physical therapy (APTA, 2021; Gough, 2020). It remains to be seen if these changes will continue as COVID-19 shifts from a pandemic to an endemic.

Effectiveness of Hybrid Education

With an understanding of why hybrid education was rapidly implemented in DPT education and clinical experiences during COVID-19, the effectiveness of hybrid instruction in DPT education must be considered. According to a systematic review performed by Mącznik et al. (2015), effectiveness of online teaching tools in PT education varies depending on the tool used. For instance, many students perceive websites positively as resources that can help improve psychomotor skill performance for a low cost, and discussion boards as learning tools to promote clinical reasoning skills. Students' perceptions on improvement on specific PT psychomotor skills was not discussed in this systematic review. While student perceptions and effectiveness of online learning technology are positive, this medium must be carefully and intentionally planned into the curriculum. In a cardiopulmonary PT course, hybrid classes involving online lectures combined with small group problem solving activities increased student performance on higher order thinking questions compared to traditional lectures (Bayliss & Warden, 2011). These researchers found no difference on lower-level knowledge questions, and students did not prefer one teaching method over the other. These results suggest that hybrid education can facilitate development of the critical thinking skills necessary for clinical rotations and practice. However, it is difficult to ascertain whether these improvements were a result of the e-lectures, the small group work, or students' increased focus.

Adams (2013) studied the effectiveness and student perceptions of hybrid versus traditional lecture for electrical stimulation lab preparation. Although there was no significant difference in mean final exam score, practical performance, or course grade, the hybrid group had slightly higher averages. Additionally, no significant differences were found in retention of knowledge. These studies suggest that hybrid education is no better or worse as an instructional method in certain DPT coursework and can be successfully utilized with equivalent outcomes when compared to face-to-face traditional instruction. However, these studies do not

reflect the perspectives of students or faculty who began a semester with traditional face-to-face instruction and were forced to shift online unexpectedly.

Student perceptions of hybrid learning can reveal some of the qualities of a successful hybrid student. Students using self-directed, flexible, online lectures to prepare for in-person lab practice reported higher course satisfaction, "[embraced] the lab's active learning activities," and requested more learner-centered activities (Adams, 2013, p. 29). Overall, hybrid students displayed an adult learning style, understanding the responsibility of preparing for class and appreciating trying new learning techniques. Hybrid learning gave students who usually struggle in traditional lectures more time to process and prioritize information (Adams, 2013). Students enrolled in a hybrid program perceived self-initiative in learning, problem solving skills, and organization of courses in the curriculum as important for success in a hybrid program. Self-directed learning through a problem-based learning curriculum can increase DPT students' confidence in presenting, answering patient questions, and justifying their clinical reasoning (Gagnon et al., 2020; Wormley et al., 2019). However, hybrid environments that incorporate problem-based learning have not yet been compared with traditional face-to-face instruction to define potential differences or equivalence of student perceptions or learning outcomes. While elements of hybrid education have been shown to increase student confidence and problem-solving ability, students enrolled in DPT programs during COVID-19 had other stressors that may have affected their experiences and satisfaction with online learning and hybrid instruction.

Faculty satisfaction with online teaching and learning before COVID-19 should also be considered, as the onset of the pandemic has affected faculty perspectives significantly. University faculty of one southern medium-sized (over 10,000 students) institution, who had taught a course 100% online within the previous year, expressed mostly positive views on online learning for higher education. When provided effective training for teaching online, these faculty felt online teaching gave them sense of pride, provided greater work-life balance, and gave them more freedom in modifying content to meet the needs of students (Marasi et al.,

13

2020). There were mixed feelings about the efficacy of support in providing online tutorials for faculty and students, but regardless, these faculty felt that student expectations could be met through the online course (Marasi et al., 2020). This research found faculty satisfaction with online teaching was not largely influenced by teaching experience, whether it be higher education teaching, online teaching, or percentage of online classes taught (Marasi et al., 2020). Instead, it was motivation and social factors that had the greatest influence on faculty satisfaction. The COVID-19 pandemic presented more sudden and unexpected circumstances that forced all faculty in higher education to transition to online teaching for the first few months of the pandemic, creating perceptions of satisfaction opposite of those described by Marasi et al. (2020). Because this transition was out of necessity, and not faculty choice, faculty nation-wide may have experienced great dissatisfaction with online teaching and learning, with minimal to no training provided at the onset of the pandemic, and no work-life balance.

Donlan and Alpert (2018), who examined DPT faculty perspectives of online teaching and learning in DPT curriculum prior to COVID-19, reported results quite the opposite those found in the Marasi et al. (2020) study. Donlan and Alpert (2018) identified three main themes related to DPT faculty perspectives of online teaching: awareness of barriers, appreciation for educational contributions, and respect for program integrity. Within the awareness of barriers, faculty members expressed personal discomfort with technology and lack of time to integrate technological modalities, such as a course management system. DPT faculty complained that online technology support specialists who were often unable to explain the inconsistencies in the system led to apathy among faculty members. Additionally, the DPT faculty grew more dependent on colleagues, technical support staff, and other outside sources to assist them. This sense of dependence reduced their self-efficacy. Related to the theme of appreciation for educational contribution, Donlan and Albert (2018) found that faculty appreciated that, through technology, "different types of learning preferences and needs can be met" (p. 90). Student input via feedback and reflection was credited with sound educational practice. This study

demonstrates how different faculty view hybrid education, but did not evaluate differences in efficacy or potential equivalence between hybrid and traditional face-to-face instruction in a DPT program. The COVID-19 pandemic created a necessity for faculty to swiftly update lecture and lab materials for online delivery, and students had to learn psychomotor skills all or partly online until they could safely return to campus. The reality of how COVID-19 has affected the perspectives of faculty on hybrid teaching is important to investigate in order to maintain excellence and quality in DPT education.

Generational differences between students and faculty do not seem to be factors that affect overall satisfaction with use of technology in education. Students admitted to a DPT program starting fall of 2018 or fall of 2019 were between the mean ages of 22 to 24 years old, while the mean ages of DPT faculty was between 50 and 57 years old (Commission on Accreditation in Physical Therapy Education [CAPTE], 2020; PTCAS, 2020). Satisfaction with e-learning is relatively high and similar across these student and faculty generational groups (Ahmad & Tarmudi, 2011; Stapleton et al., 2007). The comfort with and perceived benefit in using technology was not significantly different between students and faculty in the baby boomer and millennial generations (Culp-Roche et al., 2020). Age does not seem to determine contentment with online or hybrid education, and hybrid learning in DPT education has not been shown to be less effective for reaching appropriate student outcomes. Looking into the experiences of students and faculty who made the sudden but necessary switch to hybrid learning during COVID-19 can give insight into how the pandemic impacted DPT student and faculty relationships, interactions, and expectations.

Student and Faculty Experiences During COVID-19

The COVID-19 pandemic required universities to implement a swift remodeling of teaching and evaluation of student learning. This experience of rapid change necessitated by the pandemic affected students and faculty in various ways. Faculty workloads increased dramatically, student-faculty communication and support became more complex, and the use of

15

novel technologies and remote education strategies became more common as the pandemic continued (Brammer & Clark, 2020). When programs initially shut down in March 2020, DPT administrators and faculty made "reactive short-term decisions to best address challenges" that arose (Wainwright & Brueilly, 2020, p. 93). However, it has become apparent that this pandemic is not short term. Rather than waiting for the world to return to its normal state, DPT education had to adapt to the "new normal." DPT faculty have used this crisis as an opportunity to renew curricula designs, "be forward thinking, and drive innovation beyond short term decisions" (Wainwright & Brueilly, 2020, p. 93). Macaulay et al. (2020) studied faculty perspectives on changing DPT curriculum and found that planning these adjustments is a complicated process with an overwhelming amount of work, even when it is spread out over five years. Additionally, faculty communication was found to be imperative to adjusting curriculum. Before the pandemic, modifying curriculum was time consuming and complicated. During the pandemic, those changes had to happen more rapidly, and this process was dependent on finding ways to communicate the changes amongst the faculty so that synergy and agreement could be made quickly. The pandemic forced more rapid changes in delivery of content and disrupted face-to-face communication and interactions among faculty and students, creating challenges and circumstances in education that were difficult to navigate.

The abrupt changes in instruction and social circumstances were challenging for students and faculty in general, regardless of age or program of study. DPT students and faculty were no exception. Prior to the pandemic, a survey of DPT students at Texas Woman's University (TWU) Houston campus found that most students scored in a normal range for stress, anxiety, or depression. However, less than half of participants scored in the normal range for all three domains, meaning that 54% of these DPT students struggle with one of the three. Moreover, a concerning number of students scored moderate and severe levels of stress (19%), anxiety (25%), and depression (12%); students reported that their primary stressors were related to a high workload and study concerns such as time management (Ellison et al.,

16

2020). This research also revealed 39% of DPT students valued their relationship with a faculty advisor and found that having a good relationship with their advisor helped their overall well-being (Ellison et al., 2020). DPT students experience high stress levels associated with their workload, and mental health struggles were likely only compounded by the pandemic. Overall, the pandemic changed social interaction inside and outside the classroom, affecting DPT student-faculty relationships and interactions. Understanding the perspectives of students and faculty in a DPT program and how COVID-19 has impacted their experiences could clarify how to lessen the frustrations and stress brought on by the pandemic.

Student-faculty communication and learning psychomotor skills were major challenges during periods of online learning in healthcare education programs aside from PT. Challenges reported in medical and dental school programs included difficulty with communication, student assessment, technology, previous experience in online teaching, and mental health (Mukhtar et al., 2020; Rajab et al., 2020). Faculty of a pharmacy program noted that "embracing flexibility while ensuring accountability is a priority" for the success of online learning (Almaghaslah & Abdulrhman, 2020, p. 799).

Surveys of students and faculty in various healthcare programs can provide insight into perceived challenges and benefits of online learning, which also apply to DPT programs. Literature discussing these challenges is limited to a single study. Hyland et al. (2021) conducted a novel study to identify COVID-19 impact across issues related to four categories relevant to PT and physical therapist assistant (PTA) education in the state of New Jersey during the pandemic: academic, non-academic, transition to online, and financial. Student PTs and PTAs identified the top challenge under each category as change in quality and frequency of hands-on experiences before going out to the clinic, struggles with physical and mental health, decreased contact with classmates, and challenges surrounding ability to pay tuition, respectively. Other challenges noted at a frequency above 50% included "online learning does not give the same academic rigor vs classroom experience," "difficulty finding a quiet place to

17

attend class/study," "lack of feedback on psychomotor skills," and "family member health/wellness" (Hyland et al., 2021, p.281). Hyland et al. (2021) also conducted qualitative interviews asking PT and PTA students the top three ways their academic institution could support them through the COVID-19 pandemic. Five major themes emerged from open-ended questions: "communication; safe return to campus for psychomotor skills; additional academic resources; recognition of students' financial, mental, and physical health concerns; and financial support" (Hyland et al., 2021, p. 279). Hyland et al. (2021) was the only identified study in the literature incorporating quantitative and qualitative methods for identifying how COVID-19 impacted DPT students. These student experiences highlight the further need to investigate and understand the impact of COVID-19 on the experiences of PT faculty, as well as the interactions, relationships, and expectations between PT students and faculty.

Student and Faculty Interactions, Relationships, and Expectations

COVID-19 changed the delivery of DPT education in a very short time frame. These changes impacted curriculum, student-faculty communication, student mental health, and learning experiences. However, relationships, interactions, and expectations between DPT students and faculty have not been widely examined in the literature. The student-faculty relationship is a principal component of a DPT program. Through various interactions and exchanges with faculty members, students may develop mentorship, a sense of belonging, and intellectual, personal, and professional growth (Teschendorf & Nemshick, 2001).

Teachers are responsible for creating a positive classroom environment to enhance their students' learning. A trusting relationship between students and faculty is foundational for successful learning (Presicci, 2020). Trusting relationships are "key to enhanced learning" as they tie students into a learning community, and they allow both the teacher and student to learn together (Presicci, 2020, p. 89). Additionally, faculty can create meaningful learning experiences through a trusting relationship; this is usually because the instructor is intentional in getting to know his or her students or they are inherently skilled at building personal connections. Faculty

18

reported that taking the time to ask questions and get to know students one-on-one can facilitate relationship building (Presicci, 2020). While Presicci's dissertation investigated relationships between students and teachers in primary school education and not graduate-level education, these findings may be relevant to the relationships between DPT students and faculty. In a graduate program, communication is not only an important component of developing relationships with peers and faculty, but it is also useful for improving performance and promoting professionalism. Not only can faculty create the proper environment for a trusting relationship with their students, but they can also model professional behavior. Wormley et al. (2019) found that DPT faculty model professionalism and foster development of core values of PT to their students by using evidence-based practice, presenting research at conferences, joining the APTA, and reading new research. The COVID-19 pandemic shifted how DPT professors model professionalism into an online or hybrid environment. How DPT students and faculty relationships and interactions were affected, and if this affected their ability to model professional behaviors and communication during COVID-19 is unexplored.

Students perceive feedback as an ongoing process throughout their academic career, and it is not limited to formal, written feedback on written or practical exams (Pokorny & Pickford, 2010). Feedback from faculty can equip students to develop self-assessment skills. Additionally, the relationship between the person providing feedback and the recipient can affect the impact of the critique. Students perceive feedback as more effective when the faculty providing the critique is "relaxed, approachable, supportive, down to earth, playful, open and willing to have discussion and debates" (Pokorny & Pickford, 2010, p. 26). Wormley et al. (2019) reported that PT students who received feedback after problem-based learning sessions felt more prepared to receive feedback in the clinic. They also noted that feedback can help students create a more accurate picture of their strengths and weaknesses.

Giving and receiving feedback in the classroom and clinic can be a major way that students and faculty interact in a DPT program. Students receive frequent feedback from faculty

and clinical educators during their time in a DPT program in order to improve their professional

behaviors and clinical skills. As students were removed from close contact with peers, faculty,

and mentors during pandemic shutdowns, feedback, which is vital to psychomotor development

and professional growth, may have been disrupted or modified in ways that were not clear.

There are also disagreements among researchers on the most effective form of feedback

between students and faculty. Very little literature exists that examines the benefits faculty

receive from students. Killingback et al. (2020) found that students and faculty have differing

views on both the ideal use and mode of feedback. Faculty may be unaware if their feedback to

students is being used, and students may be unsure how to incorporate the wide variety of

feedback they are given. Concerning the mode of feedback, Killingback et al. (2020) found that

students prefer to receive feedback from faculty in a face-to-face format with genuine human

connection. Mentorship by faculty can promote professional growth and better prepare students

to become clinical instructors in the future (Kucharski-Howard et al., 2019). Feedback from

faculty is clearly important for students to improve their performance, and open communication

about how feedback should be given and received can minimize frustration between faculty and

students in order to foster stronger, more positive relationships and experiences.

Expectations between students and faculty can impact the relationships they build during

their time in a PT program. While enrolled in a DPT program, students are responsible for both

mastery of content within the classroom and developing clinical reasoning skills inside the

classroom as well as during clinical education. Faculty members expect students to be

respectful to one another, hold themselves accountable for their mistakes, display honesty and

courtesy towards others, and demonstrate effective communication, punctuality, and

appropriate attire in the clinical setting (Teschendorf & Nemshick, 2001). Quantitative measures

are utilized to track student improvements in psychomotor skills across multiple clinical

experiences**.** Student PTs are expected to make improvements in their clinical skills and abilities

as they progress through their clinical experiences (Wetherbee & Giles, 2007). Faculty

members are responsible for providing mentorship as students evolve into novice clinicians. DPT faculty generally engage students as adults, encourage students to take an active role in their educational process and have high expectations for academic performance. DPT faculty also noted the importance of having a person who "embodies the epitome of performance in the profession" (Teschendorf & Nemshick, 2001, p.9). The expectations of DPT students and faculty related to professional behaviors and performance of psychomotor skills may have been impacted during the chaos of the COVID-19 pandemic.

For DPT students and faculty, relationships, interactions that include giving and receiving feedback, and management of expectations are all part of creating a positive learning experience. It is important to explore the experiences of DPT faculty and students during COVID-19 pandemic, and their relationships, interactions, and expectations during the first 18 months of the pandemic as combined student-faculty perspectives can give insight to future students and educators as DPT education continues to evolve.

Summary

This chapter covered hybrid education prior to and during COVID-19 and various student and faculty experiences during COVID-19. Further research is needed to examine how COVID-19 has impacted students and faculty relationships, interactions, and expectations in a DPT program. The next chapter, methodology, discusses the research parameters that were used to conduct this study.

CHAPTER III

METHODOLOGY

Research Design

Qualitative research methods enable health sciences researchers to delve into questions of meaning, examine institutional and social practices and processes, identify barriers and facilitators to change, and discover the reasons for the success or failure of interventions (Starks & Trinidad, 2007). A grounded theory approach allows for data comparisons and analyses to occur throughout the study from initial data collection through the final development of the ground theory (Charmaz, 2014). The goal of a grounded theory approach is to develop a theory that explains basic social processes that occur in specific environments (Starks & Trinidad, 2007). A grounded theory methodology was most suitable for this study because it lends itself to assisting the researcher in understanding the social processes between students and faculty in the context of a DPT program from the onset of COVID-19 and over the course of the 18 months that followed. A constructivist approach developed by Charmaz (2014) was utilized because the primary researcher and student researchers were part of the populations of interest, and were involved in data collection and creation of the eventual theory (Charmaz, 2014; Charmaz & Bryant, 2011).

Participants

This grounded theory study was conducted in the specific contexts of TWU Dallas and Houston campuses, with participants from each campus's School of Physical Therapy. TWU was chosen as a location of convenience, as the student researchers were part of the TWU Dallas class of 2022 and the primary researcher was a full-time faculty member at TWU Dallas from January 2019 to May 2020 and a full-time faculty member at TWU Houston from August 2020 to May 2021. TWU is accredited by CAPTE and has been educating PTs since the 1960s. TWU has been ranked nationally and is recognized for "advancing the practice and science of physical therapy through education, research, and service" (TWU, 2021, para. 1). TWU's DPT

program requires eight semesters of study with 32 weeks of clinical education experiences incorporated into the curriculum (TWU, 2021). Though both the Dallas and Houston campuses fall under the umbrella of TWU, each campus employs its own faculty and accepts separate cohorts of students each fall semester. In turn, different teaching and learning strategies are employed by different faculty members, and students have varied experiences throughout their PT program journeys.

Participants for this study were students and faculty at the Dallas and Houston campuses of TWU School of Physical Therapy. Second-year and third-year students who were involved in didactic instruction in the spring of 2020 were the targeted student populations as they were the cohorts affected when the COVID-19 pandemic began. First-year students who started the DPT program in fall of 2020 were not included in the study as they did not have experience in a DPT program prior to the onset of COVID-19. Student participants were interviewed by the two student researchers in focus groups consisting of 3-5 students. Each focus group consisted of students from the same cohort and from the same campus. Faculty participants were interviewed individually by the primary researcher. Full- and part-time faculty members with at least 3 years' experience teaching in any DPT program were recruited. The participant matrix in Appendix B identified student and faculty characteristics that researchers anticipated would contribute to the creation of the grounded theory. This participant matrix was updated as data collection progressed, and the final matrix with participant demographic data is reported in the results section of this dissertation.

Only students and faculty members in the TWU School of Physical Therapy were included in this study in order to better answer the research questions as they pertain to the specific context of a single DPT program. The two DPT student research assistants, as well as the faculty committee involved in this study and faculty who serve primarily administrative roles, were excluded from participation in order to reduce any bias.

Participant Recruitment

All participants were recruited using a combination of email and/or word of mouth. The primary researcher recruited faculty participants, while student researchers recruited student participants. The initial recruitment emails for students and faculty can be found in Appendices C and D. After two to three student focus groups and individual faculty interviews were conducted, targeted groups of students and individual faculty were sent individual emails or recruited via word of mouth in order to more thoroughly encompass all relevant participant categories previously identified in the participant matrix. These data collection and analysis strategies are further described in the next sections.

Purposive sampling utilizing a participant matrix with student and faculty demographic characteristics identified in the literature was implemented to enrich the understanding of the qualitative phenomenon and provide initial data for the researchers to analyze (Creswell, 2008; Chun Tie et al., 2019). This study implemented a type of purposive sampling known as theoretical sampling. Theoretical sampling allowed the researchers to "follow clues from the analysis, fill gaps, clarify uncertainties, check hunches and test interpretations as the study progresses" (Chun Tie et al., 2019, p. 3). Student and faculty participants were purposefully recruited based on characteristics outlined in the participant matrix in Appendix B in the specific context of a single PT program. As student focus groups and faculty interviews were conducted, the participant matrix was updated to reflect participant characteristics the researchers felt would contribute to the creation of the grounded theory through theoretical sampling.

Data Collection

This study was approved by the Institutional Review Board (IRB) at TWU Dallas in March of 2021. Consent forms approved by the IRB were provided electronically via email to all participants before any focus groups or interviews were performed. All participants were required to complete a demographic form before the focus group or interview. Signed informed consent forms were obtained by the student researchers for student participants and by the

primary researcher for faculty participants via email before the initiation of the interviews and focus groups. All participants were asked to complete and submit a participant matrix form found in Appendices E and F, depending on if they were a student or faculty participant.

The demographic forms were used primarily for purposive sampling and recruitment following the participant matrix (see Appendix B) to ensure a wide variety of student and faculty perspectives were included in the study sample. The demographic data and additional data collected were related to the participant categories that the researchers believed would contribute to the formation of a theory. These forms were not changed as the data was collected and analyzed, as all the data gathered in the forms was needed to implement the theoretical sampling. Questions on the forms (see Appendices E and F) used to categorize participants were phrased as yes/no response items. Participants were not provided operational definitions or guidance for questions such as "Do you have any close relationships with students?" or "Do you have close relationships or receive mentorship from any faculty?". Thus, the participants self-defined concepts such as "relationships" or "reserved" to determine their response to the item.

After all consent forms and participant matrix forms were obtained via email and any participant questions were answered, the researchers conducted the student focus groups or individual faculty interviews following a semi-structured interview guide. The semi-structured interview guides created for student focus groups and individual faculty interviews are listed in Appendices G and H. Semi-structured interviews and focus groups allowed the researchers to maintain direct control over the construction of data while having flexibility to pursue theoretical paths as they emerge (Charmaz, 2014).

Student researchers were trained by the primary researcher during the first faculty interview on utilization of the semi-structured interview guide. Student training ensured trustworthiness and credibility of data collection techniques (Kvale & Brinkmann, 2009). The first faculty participant gave verbal consent to have the student researchers present before the

interview was conducted. During this training interview, the student researchers observed as the primary researcher obtained informed consent and clarified any participant questions, and followed along with the semi-structured interview guide.

Memos and field notes through field journaling were created by the student researchers and primary researcher as the student focus groups and faculty interviews were being conducted. The primary researcher also trained the student researchers on creation of field notes and memos after the initial faculty interview was complete. These memos and field notes were hand-written by the primary researcher and digitally recorded by student researchers to document researcher observations, thoughts, questions, and impressions about verbal and non-verbal participant responses during data collection (Kvale & Brinkmann, 2009). The memos and field notes were utilized throughout the data analysis process in the creation of the grounded theory (Charmaz, 2014).

Final training of the student researchers was given in the form of feedback from the primary researcher after the first student focus group was performed and student researcher video and audio data, field notes, and memos were reviewed by the primary researcher. The student researchers required no further training as they collected all participant forms, answered any participant questions related to informed consent, and utilized the semi-structured interview guide appropriately without leading participants to answer in a specific manner or over-validating participant responses while conducting the first focus group session.

Student participants were interviewed in focus groups of three to five students in order to encourage student discussion and compare multiple viewpoints of student participants. Student focus group numbers were kept small to create a more personal and open discussion among participants who are familiar and comfortable with each other and not allow for individual perspectives to be lost (Stalmeijer et al., 2014). Students of the second-year cohort were not mixed with students of the third-year cohort in these focus groups to ensure participant groups were homogenous (Grudens-Schuck et al., 2004; Stalmeijer et al., 2014). In-depth individual

interviews of 10 faculty members, four from the Dallas and six from the Houston campuses, were conducted to dive deeper into the understanding of their individual and personal attitudes and experiences surrounding the impact of COVID-19 on the students and faculty in PT education (Lambert & Loiselle, 2008). The student focus groups and individual faculty interview sessions lasted approximately 20 mins to 1 hr each.

Student focus groups and faculty individual interviews were conducted during the same few months at varying times depending on the participants' availability. After the first two student focus groups for third-year cohort on the TWU Dallas campus were conducted, theoretical sampling was implemented for the final focus group third-year focus group for the Dallas campus students. This process was repeated for the second-year cohort on the Dallas campus. Initial recruitment strategies for student participants on the Dallas and Houston campuses included sending a recruitment email to all students in the 2021 and 2022 cohorts, as well as recruitment via word of mouth from student researchers and faculty from both campuses. The student researchers were physically present on the TWU Dallas campus, which contributed to the increased amount of student participants from the Dallas campus. The researchers were only able to recruit three third-year student participants from the Houston campus despite extensive recruitment strategies, including multiple emails to all students in the 2021 and 2022 cohorts, and multiple attempts by the primary researcher as a faculty member to recruit via word of mouth on the Houston campus.

All student focus group and faculty interviews were conducted virtually using the online video-conferencing platform Zoom. Zoom was selected because it met IRB security requirements and allowed for recording without the use of third-party software (Zoom Video Communications Inc., 2021). All researchers and research participants were familiar with how to use Zoom as a video-conferencing platform, which also reduced the rate of technical difficulties. Zoom has been shown to be a viable tool for collecting qualitative data due to ease of use, security options, and data management features (Archibald et al., 2019; Gray et al., 2020).

Video conferencing was chosen for this study to reduce the risk of exposing the researchers or participants to COVID-19.

To ensure protection of privacy, all participants were required to join Zoom in a quiet room in their homes and ensure no people other than the other participants were able to hear the interview or focus group being conducted. All faculty interviews and student focus group sessions were audio and video recorded through Zoom and transcribed verbatim by the researchers. To ensure confidentiality and privacy, these recordings and transcriptions were stored digitally on the primary researcher's personal Google Drive cloud. These recordings were only accessible to the researchers with password protection. Any memos or field notes taken by researchers were digitally scanned, if handwritten, and uploaded into a Google Drive storage folder that is password protected as well. All identifiable information was excluded from the transcripts and each participant was assigned a two letter ID code. There was no connection between the participant's name and the ID code. An audit trail of every interview and focus group date and time, analysis procedures, documents, field notes, memos, and transcripts were maintained by the researchers to ensure credibility and confirmability of results.

Data Analysis

A constant comparative analysis using concurrent data collection and analysis was implemented throughout three coding phases of the research process: initial, focused coding, and theoretical coding (Charmaz, 2014; Cho & Lee, 2014). This data collection and analysis process is outlined in Figure 1 below.

Figure 1

Constant Comparative Analysis Process
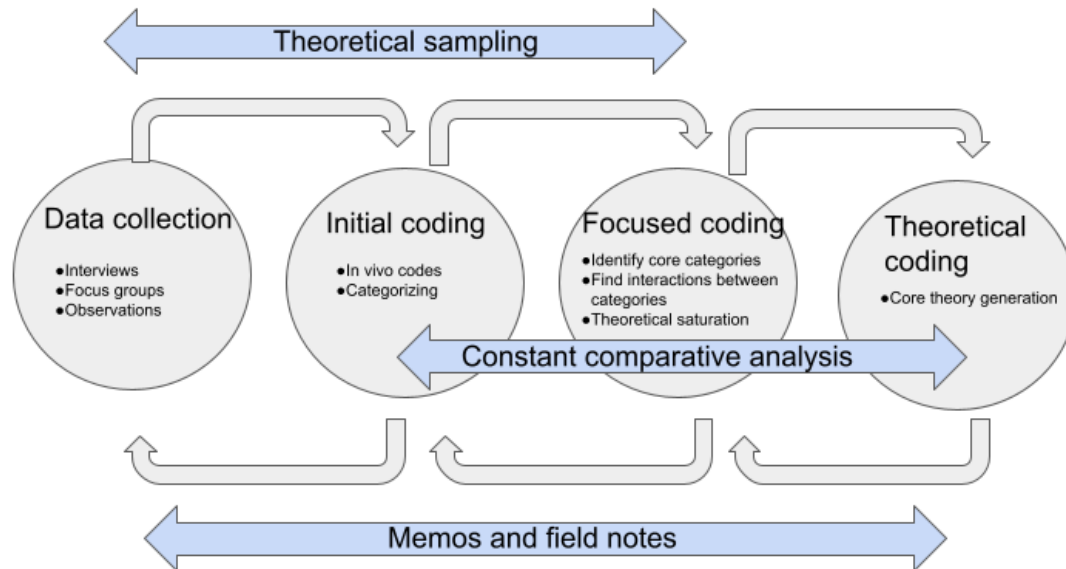
The initial coding phase consisted of transcription of audio data, which then proceeded into verbatim line-by-line coding to produce in vivo and initial codes. The student researchers transcribed the audio from student focus groups and the primary researcher transcribed the audio from faculty interviews no later than 2 months after they were conducted for review and reflection to occur in a timely manner. Memos and field notes were incorporated during the initial coding phase as categories of codes began to emerge. The use of in vivo and initial codes was implemented in order to move the analysis forward (Charmaz, 2014). In vivo codes were those words or phrases stated word-for-word by participants (Creswell, 2008). The initial coding phase occurred throughout the duration of new data collection as more components of the theory emerged and were confirmed through the next two phases of data analysis.

During the next phase of coding, known as the focused coding phase, the researchers formed categories from the most significant or frequent initial and in vivo codes from data within

and across multiple student focus groups and individual faculty interviews, allowing a theory to emerge from the data (Charmaz, 2014; Chun Tie et al., 2019). Diagramming was used to assist in demonstrating how these emerging categories were related, and how they formed around a key concept that contributed to the eventual theory. Theoretical sensitivity, or the insight to know when a piece of data is important to the emerging theory, was implemented throughout this intermediate phase (Birks & Mills, 2015). Student researchers were mentored by the primary researcher during this phase of coding to ensure theoretical sensitivity was implemented. Recruitment related to all remaining participant matrix categories was performed in order to reach theoretical saturation of data. Combining theoretical sampling and constant comparative analysis directed ongoing data collection and enhanced the conceptual levels of data analysis as the grounded theory formed (Birks & Mills, 2015; Chun Tie et al., 2019). The final phase of data analysis, or theoretical coding phase, integrated all previous codes and categories into the development of the final grounded theory (Birks & Mills, 2015; Charmaz, 2014).

Trustworthiness and Rigor

"Credibility is the extent to which the study's findings are trustworthy and believable to others'' (Stalmeijer et al., 2014, p. 15). Credibility was established in this study with the use of analytic and theoretical data analysis, as well as member checking strategies. Member checking is a process in which participants of the study review accuracy of data gathered during the study (Creswell, 2008). An initial member checking strategy was performed by sending an email to all participants with their respective final transcripts with all data de-identified. These emails asked participants to read through their transcript and respond with any corrections or requests for redaction within 1 week. Participants were also instructed that their transcripts would be taken as final if a response was not received in that time frame. A total of three student participants, one second-year and two third-year students, and four faculty participants responded to the member check emails with minimal corrections or confirmation of accuracy of their respective transcripts. A secondary member checking strategy was employed after all data was analyzed

and initial results were finalized by the primary researcher. A secondary email with a figure of the finalized grounded theory and its three major categories and subcategories was sent to all participants with the goal of asking participants to answer the following question: "Does this image reflect all or part of how COVID-19 impacted your experience as a DPT student or faculty?". One faculty participant responded with clarifications of their experience related to the figure of the final grounded theory, and one other faculty participant noted that one of the minor categories was unclear. Two other faculty participants and three student participants, two second-year and one third-year, confirmed they felt their experience fit within the figure. Based on participant feedback from the secondary member checking email, the primary researcher updated the final figure of the grounded theory and its major and minor categories to provide further clarity and reflection of all student and faculty participant experiences. Triangulation of audio and video data, transcripts, memos, and field notes also contributed to this study's credibility (Creswell, 2008; Lincoln & Guba, 1985).

"Dependability is the extent to which the findings are consistent in relation to the contexts in which they were generated" (Stalmeijer et al., 2014, p. 15). Dependability of this study was confirmed by detailed descriptions of the constructivist grounded theory methodology, constant comparative analysis, and the coding strategies implemented.

Confirmability is "the extent to which the findings are based on the study's participants and settings instead of researchers' biases" (Stalmeijer et al., 2014, p.15). An audit trail for how researchers came to conclusions surrounding the results of the data established confirmability of results (Lincoln & Guba, 1985). This audit trail included chronological dates of meetings between the primary and student researchers, all dates of scheduled interviews and focus groups, and discussions between researchers throughout the data analysis process. Audio and transcripts of the raw data, any notes from the interview and focus group sessions, and memos and coding notes from all researchers were also digitally stored in Google Drive for every stage of the study. To ensure confirmability of results, the primary researcher asked a dissertation

committee member who had expertise in qualitative data analysis to perform a peer review on

several student and faculty transcripts and perform initial coding and focused coding for

categorization. These codes were compared and discussed with those of the primary

researcher during the focused coding and contributed to confirmability of results. The

researchers also adopted an attitude of reflexivity, which included attention to the context of the

results and assessment for the effect of researcher bias, at every step of the research process

to ensure results reflected participant experiences (Stalmeijer et al., 2014).

CHAPTER IV

RESULTS

Results of this study are based on the constant comparative analysis model presented in the methodology (Charmaz, 2014; Cho & Lee, 2014). Initial and in vivo codes shared by both student and faculty participants were categorized during the focused coding stage into major and minor categories. After providing the setting context, the results related to Research Questions 1 and 2, are organized by the major categories that emerged during the focused coding stage. Connections between the various minor and major categories are also discussed throughout, as well as their contribution to the overall grounded theory formed during the theoretical coding stage of data analysis. Examples of direct participant quotes are provided in support of these results. Appendix I contains additional exemplar direct quotes from participant transcript data that demonstrate each of the in vivo codes, and support minor and major categories, as well as the theoretical code of resilience in faculty and students during COVID-19.

Context of Texas Woman's University School of Physical Therapy

The results of this study are specific to the context of the School of Physical Therapy at TWU Dallas and Houston campuses. TWU employs separate faculty at the Dallas and Houston campuses. Course objectives for each individual class across the curriculum are the same, though assignments and teaching methods vary by faculty member.

Prior to the onset of COVID-19, a majority of the courses in the DPT degree plan were taught in a traditional face-to-face format. While some faculty used the web-based learning management system Canvas, it was used for communication, assignment submission, formative assessment, quiz delivery, and as a course content repository. Pre-pandemic, Canvas was rarely used to deliver course content. The initial national COVID-19 shutdown in March 2020 forced TWU faculty and students to make a sudden shift to all online learning. For the

remainder of the spring semester and for the first month of the summer semester, all lecture and lab content was delivered either synchronously or asynchronously using a combination of Canvas and Zoom. Also during this time, all student assessments and assignments were carried out through Canvas and/or Zoom.

Starting in July 2020, TWU began to allow some on-campus instruction to resume with implementation of COVID-19 precautions, including social distancing, reduced classroom occupancy, mask mandates, contact tracing, and enhanced cleaning protocols. During this summer 2020 semester, most in-person instruction was lab-based practice of hands-on clinical skills, while lecture remained online. By definition, this was considered a form of hybrid instruction with online and in-person components of learning. In contrast to blended or hybrid DPT programs that existed before COVID-19, this instructional change was not implemented on the program level after months or years of advanced planning. Rather, this hybrid instruction was implemented to balance the risk of COVID-19 exposure with the necessity to train hands-on psychomotor skills.

In the fall semester of 2020, because Dallas faculty had access to lecture halls that were large enough to accommodate their cohorts and maintain social distancing, most lectures returned to face-to-face delivery on campus. For labs, Dallas faculty incorporated live video sharing between lab rooms in a split-lab format to meet the room occupancy requirements and limit the need for repeating the same lab more than twice. Houston faculty adopted a blocked lecture and lab schedule strategy, which kept most lectures off-campus being delivered via Zoom and the students only coming to campus for labs a few days of the week. To meet the occupancy restrictions in labs, Houston faculty chose to repeat lab sessions multiple times rather than use a live video feed between lab rooms. Both the Dallas and Houston campuses continued these risk mitigation strategies through the 2021 spring semester.

Description of Participants

A total of 26 students, 23 females and three males, participated in this study. Student ages ranged from 23 to 36 years old, with a mean age of 25.3 years. Of these 26, 16 were third-year students and 10 were second-year students. A total of 10 faculty, eight females and two males, participated. Faculty ages ranged from 35 to 65 years old, with a mean age of 49.9 years old. Faculty participants' years of teaching experience ranged from 4 years to 35 years. All faculty taught both lecture and lab content since the onset of the COVID-19 shutdown in March 2020.

To ensure diversity in participant experiences and perspectives, student and faculty participant matrices were created prior to recruitment of participants. These matrices served as the basis for the demographic data and participant characteristics that were collected on the participants (see Table 1 and Table 2). All items on the faculty demographic form required a yes or no response aside from age, years of teaching, and course content taught. Thus, each participant self-defined the meaning of items like student/faculty relationships or mental health issues. Similarly for student demographics and characteristics, only the age and cohort items required something other than a yes or no response. These responses were only utilized for purposive sampling to ensure a diverse group of participants were included in the study. No attempt was made to subgroup the result analyses based on demographics or characteristics.

Table 1

Student Characteristics by Cohort

Characteristic	Yes			
	Second-year students		Third-year students	
	n	%	*n*	%
Lived with spouse or significant other	3	11.5	4	15.4
Children	0	0	0	0
Lives alone	0	0	1	3.8
Lives with roommates	5	19.2	8	30.8
Commute >30 mins	6	23.1	7	26.9
Vocal student	3	11.5	8	30.8
Reserved student	5	19.2	8	30.8
First generation college student	0	0	5	19.2
Close relationship with faculty	0	0	5	19.2
Have health issue that puts them in higher risk category for COVID-19	1	3.8	2	7.7
Family member with health risk	8	30.8	14	53.8
Lost a loved one to COVID-19	1	3.8	0	0
Quarantined at any point	4	15.4	7	26.9
Stable internet connection	7	26.9	10	38.5
Financial concerns	5	19.2	8	30.8
Employed during COVID-19 pandemic	2	7.7	3	11.5
Had a clinical site cancel	3	11.5	10	38.5
Mental health issues	3	11.5	10	38.5

Table 2

Faculty Characteristics

Characteristic	Yes	
	n	%
Live with others	10	100
Children	10	100
Have health issue that puts them in higher risk category for COVID-19	5	50
Family member with health risk	4	40
Lost loved one to COVID-19	2	20
Quarantined at any point	3	30
Close relationship with students	5	50
High expectations of students[a]	7	70

[a]One faculty participant answered yes and no for having high expectations of students

Presentation of Results

The results are presented to correspond to the stages of data analysis. Initial codes shared by student and faculty participants were first compiled and then categorized into major categories. Initial codes are words or phrases that were common or recurrent throughout participant data and include in vivo codes. Because in vivo codes arise from participants' own words, these codes appear in quotation marks whereas other initial codes do not. All three of the major categories combined into the larger theoretical code, creating the overall grounded theory. As the data analysis process progressed over time, three major categories emerged to support the grounded theory: (a) Prioritizing Mental and Physical Health, (b) Adaptation of Teaching and Learning Styles, and (c) Enhanced Non-academic Expectations Between Students and Faculty. Each of these major categories encompass the grounded theory of this study, which are discussed at the end of these results. Connections and interactions between

the initial codes, minor categories, major categories, and the grounded theory are supported by examples of participant quotes from the data.

Prioritizing Mental and Physical Health

The first major category of the grounded theory developed in this dissertation was Prioritizing Mental and Physical Health. During the initial coding phase of data analysis, eight initial codes shared between student and faculty participants were identified (see Figure 2). From these initial codes, the major category of Prioritizing Mental and Physical Health emerged from the data. Two minor categories formed within this major category during the focused coding stage: Finding Positives Through Community and Understanding and Managing Stress. The major category of Prioritizing Mental and Physical Health is highlighted in blue, as that will serve as the color code for this category as the model is presented. To assist in the data organization and demonstration of relationships, the eight initial codes were subdivided into Contextual, Feeling, and Coping groups (see Figure 2).

Figure 2

Prioritizing Mental and Physical Health

Initial Codes   **Major Category**   **Minor Categories**

Contextual
- "Transition"
- "Unknown"/"uncertainty"

$n = 2$ (F)
$n = 6$ (S)

$n = 2$ (F)
$n = 4$ (S)

Feelings
- "Stress"
- "Anxiety"
- "Frustration"
- Fear

$n = 7$ (F)
$n = 20$ (S)

$n = 1$ (F)
$n = 6$ (S)

$n = 3$ (F)
$n = 8$ (S)

$n = 2$ (F)
$n = 6$ (S)

Prioritizing Mental and Physical Health

Understanding and Managing Stress

Finding Positives Through Community

$n = 3$ (F)
$n = 5$ (S)

$n = 3$ (F)
$n = 8$ (S)

$n = 1$ (F)
$n = 6$ (S)

Coping
- Finding the positive
- "Everybody is in this together"
- "Checking in"

(F) = Faculty participant
(S) = Student participant

Contextual Codes in Prioritizing Mental and Physical Health

The Contextual initial code group contained the in vivo codes "Transition" and "Unknown"/"Uncertainty." Students and faculty reported challenges being in the context of a time of transition and unknown factors, many of which were outside their locus of control. The rapid transition of teaching and learning from face-to-face to online coupled with the lack of understanding of when and how to safely transition back to normal instruction as well as the frequent interruptions and changes to those plans created a sense of uncertainty among faculty

and students. The shared in vivo code of "Transition" was used by eight participants in describing this period. Additionally, six participants used the in vivo code of "Unknown" or "Uncertainty" to characterize the period of time during the initial shutdown and prolonged transition back to more normal instruction. As students and faculty were going through this initial period of uncertainty and as the pandemic continued, Faculty EF noted how stressful this uncertainty was: "I felt like it was a very stressful time, I felt like it was very, like, a lot of unknowns."

With all the changes to instruction being implemented during the first months of COVID-19, students and faculty participants considered how the unknown and uncertainty impacted their physical and mental health. The contexts of Transition, Unknown, and Uncertainty brought feelings of stress, anxiety, frustration and fear among students and faculty participants. Participants voiced fears surrounding the uncertainty of potentially contracting COVID, becoming physically ill, and spreading it to others. Mental health challenges needed to be addressed during this transition as well, as student and faculty participants found themselves experiencing higher levels of stress, anxiety, and frustration. Faculty and students connected this group of feelings to their physical and mental health during this time of transition and unknown.

Codes Related to Feelings in Prioritizing Mental and Physical Health

The Feelings initial code group contained the in vivo codes of "Stress," "Anxiety," "Frustration," and the initial code of Fear. Stress was the most common feeling shared by students and faculty participants, used by seven out of 10 faculty participants and 20 out of 26 students. Much of the stress experienced by students was related to the changes in methods of instruction and in particular the technical challenges created by these changes. Student RR (Third-year) stated: "I felt like we were always behind due to technical problems, and so classes were often rushed and stressful compared to what they used to be."

"Anxiety" was another in vivo code related to feelings experienced in the contexts of transition and unknown. The sudden online transition created stress and anxiety for students and faculty as they adjusted to learning and teaching from home. Schedules were shifted dramatically and changed week by week. Some courses resumed synchronously with live lectures through Zoom, while others were pre-recorded for asynchronous review. The asynchronous pre-recorded videos allowed students to view and review lecture and lab content at their chosen time, but many student and faculty participants noted this increased the responsibility on students to learn the content and limited the ability to immediately address questions as they arose or receive feedback from instructors. Recognizing how this stress and anxiety impacted their mental health, Student DD (Third-year) voiced: "I went through a period of time of just like intense anxiety and like mental health issues, just from the pandemic." Students voiced stress in managing coursework, and frustrations when faculty did not respond to these stresses with empathy. "Frustration" became another in vivo code, as students and faculty navigated the different formats of instruction while managing increased levels of stress and anxiety.

Many student and faculty participants reported fear of physical illness from COVID. Since 25 out of 26 student participants lived with either roommates or family, there was always a chance of exposure from another source that could lead to potential consequences for those students. Several student participants noted fears of contracting COVID and passing it to family members, other classmates, or patients they were treating in the clinic. A few faculty members also voiced this same fear, noting a concern that students may expose them during lab time while practicing hands-on skills. Faculty PQ illustrated this aspect of fear, stating: "I did become more distrustful of the students because of multiple COVID exposures from the students." Some faculty members mentioned during hands-on lab time, they did not allow students to physically put their hands on the instructor as an extra precaution, and this may have been detrimental to student learning of the psychomotor skill. Third-year students also voiced

41

concerns about having to quarantine due to COVID exposure or testing positive and missing weeks of clinicals, leading to the fear of not being able to graduate in May 2021. The fears described by participants not only were threats to student and faculty physical health, but mental health as well. Participants related fears of COVID exposure to increased levels of stress and anxiety, further requiring the need for prioritizing physical and mental health during this time of transition and unknown.

Coping Strategy Codes in Prioritizing Mental and Physical Health

The Coping strategies initial code group contained the initial code of Finding the Positive, and the in vivo codes of "Everyone was in this Together" and "Checking In." These Coping codes were a few strategies participants frequently cited when discussing the prioritization of their mental and physical health. Coping strategy codes were also discussed as approaches to manage the initial codes of Stress, Frustration, Anxiety, and Fear in the contexts of Transition and Uncertainty.

The initial code of Finding the Positive was an essential coping strategy for students and faculty when prioritizing mental and physical health. Faculty participants reported that positivity and support from both peers and department leadership boosted their motivation and morale despite the many pandemic-related frustrations. Student participants also voiced how proud they felt that everyone encouraged each other to keep pushing through stress and frustrations and passed all their courses and clinical semesters during the first 18 months of the pandemic.

The initial code of Finding the Positive was connected to the in vivo code "Everyone is in this Together" as students and faculty built community through their shared experiences. Third-year student BB stated how they recognized that students and faculty were all in the same situation: "We were all, like, on a team trying to just get through it together." Many participants also reported performing regular check-ins with each other as a way of Coping and Prioritizing Mental and Physical Health. Students reported that they relied heavily on classmates to be support systems for each other, checking in with classmates as everyone was in this together.

42

Student participants voiced how virtual visits with classmates, friends, and family helped reduce feelings of isolation. Students also acknowledged that faculty were overwhelmed by the instructional challenges associated with the unpanned shift in teaching paradigms. They expressed gratitude to faculty who still made efforts to check in with students and maintain availability in their schedule should students want to talk about academic or personal issues.

> I know they had a lot on their plate, and so it really made me respect that. Especially when we had a few faculty who were really intentional about still being available to us over Zoom for questions or for, like, emotional or mental support. (Student AA, Third-year)

In addition, faculty indicated that checking in with each other and with their students created a sense of community and positivity where everyone felt they were all going to get through these challenges together. By recognizing these initial codes within the group for Coping, students and faculty participants demonstrated vital strategies for Prioritizing Physical and Mental Health.

Minor Categories Related to Prioritizing Mental and Physical Health

During the focused coding stage of data analysis, initial and in vivo codes connected and interacted in ways within the major category of Prioritizing Mental and Physical Health that created two minor categories. These minor categories are Understanding and Managing Stress and Finding the Positive Through Community (see Figure 2). The minor categories demonstrate more specific ways in which the initial codes of this major category relate and establish the main strategies for how students and faculty prioritized mental and physical health during the first 18 months of COVID-19.

The first minor category of Understanding and Managing Stress utilizes initial and in vivo codes within the Contextual, Feelings, and Coping groups of the major category Prioritizing Mental and Physical Health in multiple ways. Reflecting on the struggles of others was essential for understanding and managing stress. This reflection required student and faculty participants to recognize the respective stress, anxiety, frustrations, and fears being experienced during the period of transition and unknown. Many student and faculty participants reported that they were

43

able to reflect back and view situations from others' perspectives. Faculty participants seemed to be very aware of the stresses and challenges being experienced by students. One faculty participant noted how students had numerous stressors that could have affected them and approached these student struggles with compassion and understanding.

> So maybe a little bit more compassion, a little bit more understanding, and look more embracing of the things that they have to deal with in terms of just some of the difficulties and to navigate. Whether it's food, whether it's financial insecurity, whether it's just mental stress of just being isolated. That made me a lot more sensitive and a lot more compassionate to what they have to deal with. (Faculty GH)

Finding Positives Through Community was the second minor category that emerged from the major category of Prioritizing Mental and Physical Health. In order to combat the stress and anxiety brought on during a time of unknowns and frustrations, students and faculty tried to find positives and encouragement from one another to keep moving forward together as a team. Students were doing mental health check-ins with each other and faculty were also checking in with their students and other faculty members to create community and connection. Recognizing that 'everyone was in the same boat' helped manage stress and create positive interactions and a sense of community and shared experience between students and faculty.

Most students and faculty voiced they experienced multiple elements of growth over the past year and a half after the onset of the pandemic related to their own physical and mental health. Individually, several student participants reported that they made sure to maintain or increase their physical activity and time spent exercising during the first year of the pandemic. Individuals also reported that exercise was a good outlet for frustrations and helped boost their mental health. Faculty participants also acknowledged the stress and anxiety the students were experiencing. Despite all the frustrations and stress that impacted mental health, students and faculty experienced significant personal growth by prioritizing their physical and mental health during the first year of COVID-19. Third-year student FF illustrates the major category of Prioritizing Mental and Physical Health with this statement: "Prioritizing your mental health over

44

school was something I really needed to learn how to do, and I think this actually helped a lot more than I'd like to admit."

In summary, the eight initial and in vivo created the major category of Prioritizing Mental and Physical Health. This major category was further split into two minor categories that better demonstrated the various interactions and connections between the initial and in vivo codes. These minor categories were Understanding and Managing Stress and Finding Positives Through Community. Student and faculty participants shared experiences of prioritizing their mental and physical health during the first 18 months of the COVID-19 pandemic by understanding and managing stress and finding positives through building community.

Adaptation of Teaching and Learning Styles

The second major category surrounding the grounded theory of this study was Adaptation of Teaching and Learning Styles. Six initial codes emerged during the initial coding stage, shown in Figure 3. The initial codes contributing to the major category of Adaptation of Teaching and Learning Styles are presented as context and quality groupings, with clinicals/clinical skills separate from either group. Two minor categories of Changes in Mode and Perceived Quality of Instruction and Using Feedback During Clinical Experiences emerged during the focused coding stage from the major category. The major category of Adaptation of Teaching and Learning Styles is highlighted in red.

Figure 3

Adaptation of Teaching and Learning Styles

Initial Codes

Context

Home Environment

Survival / "Crisis Learning"

n = 5 (F)
n = 7 (S)

n = 2 (F)
n = 8 (S)

Clinicals / Clinical Skills — *n* = 4 (F)
n = 15 (S)

n = 2 (F)
n = 6 (S)

Quality

Feedback

n = 2 (F)
n = 4 (S)

Missing Out

n = 3 (F)
n = 2 (S)

Value

Major Category

Adaptation of Teaching and Learning Styles

Minor Categories

Changes in Mode and Perceived Quality of Instruction

Using Feedback During Clinical Experiences

(F) = Faculty participant
(S) = Student participant

Contextual Codes Related to Adaptation of Teaching and Learning Styles

The contextual initial code group contained the in vivo code of "Crisis Learning" and the initial codes Survival and Home Environment (see Figure 3). These initial codes in the major category of Adaptation of Teaching and Learning Styles provided insight to the context of TWU during the pandemic. The first initial code, Home Environment, related to the sudden transition to online teaching and learning during the first few months of the pandemic with slow progression to returning to face-to-face learning. Participants noted pros and cons of teaching and learning in an all online or hybrid environment. One advantage stated by several students and faculty was reduced commute time to campus. By having no commute, student participants reported they had more time to study, sleep, or take care of other personal health needs, tying back to the first major category of Prioritizing Personal and Mental Health. Second-year student

46

UU explained why they were happy to have lecture content in an online format: "I really enjoyed not coming into school… y'all know I'm an introvert, and so being around people, not that I hate it, but it drains my battery more so than an extrovert." Many of the pros of teaching and learning from home were discussed by participants in relation to finding the positives during the pandemic. Some student participants noted how watching the asynchronous videos allowed them to work at their own pace and review material as needed if something was unclear. The reduced commute time also allowed faculty to have more flexibility to complete other academic duties, such as research or service responsibilities. However, not all participants thought teaching and learning from home was a positive experience.

For many other participants, home was no longer a restful environment, as all daily activities including teaching, learning, studying, research, eating, and sleeping were reduced to a single place. Students and faculty had to adapt to changes in the function of their home environments, and voiced difficulty with not having an option to leave that space during breaks. Third-year student BB discussed some of the cons of learning from home: "When you're at home it's like rest, sleeping, eating, everything, and studying, and school is all in the same space. So my room or my space at home… wasn't a restful space anymore." Using home as a space for school or work was strongly connected to increased stress and anxiety levels for students and faculty, and therefore had a connection with the first major category of Prioritizing Mental and Physical Health. Student participants expressed they needed to manage stress and frustrations and adapt their learning styles to process course content while learning from their home environment. Several faculty participants voiced that learning to use new technology for teaching and modifying course content into an online format was quite challenging. One faculty participant noted how they became fatigued from being in a virtual environment all day in their home office, and how the desire to get away from that environment often produced feelings of guilt.

The Zoom fatigue was real as we moved into the pandemic, and you know just being here in this space that I'm in. Which is wonderful, and I'm very thankful that I have a home office that I can do all this here. But at the same time, it's like I want to get away from this. You know, like that feeling like, when is this class or this meeting is over and I can just leave this room, you know kind of feeling. Which, you know you then feel guilty. (Faculty TU)

The sudden change from all in-person instruction to virtual instruction forced some students and faculty to shift to a non-preferred teaching or learning style. Faculty participants expressed the need for adaptability in student learning styles as everyone was navigating these changes in instruction in the context of a home environment.

Another initial code within the context group contributing to the major category Adaptations of Teaching and Learning Styles was the code of Survival/"Crisis Learning." During the first few months of COVID, lecture content in TWU's School of Physical Therapy took the form of either an asynchronous lecture recording posted by faculty for the students to view at their own pace, or as a synchronous lecture through Zoom where everyone was present in a virtual space listening to the lecture live via screen share. Additionally, lab instruction of clinical skills were mostly pre-recorded videos that students watched asynchronously and then practiced at home. Coupling this unanticipated shift with constant unknowns and changes during the initial months of the pandemic, faculty had to adapt instructional plans week by week. Students were also learning in new ways while experiencing feelings of stress, anxiety, and uncertainty. Faculty PQ stated the students were not experiencing a form of online or hybrid learning, but a better description would be "crisis learning." Faculty RS noted how there was uncertainty surrounding student acquisition of skills: "It was kind of survival for them so I'm not sure how much they got out of the, you know, the videos that we're substituting for demonstration of hands-on skills." Teaching and learning psychomotor skills in a survival context was especially difficult for faculty and students during the initial months of COVID. Though students and faculty had varying levels of comfort with functioning in their home

environment in survival mode, these contexts are key contributors to the major category of Adaptations of Teaching and Learning Styles.

Clinical Skills Codes Related to Adaptation of Teaching and Learning Styles

Acquisition and performance of clinical skills was another important aspect of the major category Adaptation of Teaching and Learning Styles. The most common initial code shared by students and faculty within this category was the code Clinicals/Clinical Skills and is shown in Figure 3 as a standalone initial code. Fifteen student and four faculty participants commented how COVID-19 impacted student learning of clinical skills in school, and how learning those skills during COVID affected their clinical experiences. Prior to the pandemic, the third-year student participants were in the second year of their program and had completed one full-time 6-week clinical experience, while the second-year participants were in their first year and had not yet completed any full-time clinical experiences. While student participants were not specifically asked about their confidence in clinical skills learned during the pandemic, several participants spoke about their lack of confidence in skill acquisition when asked the interview question about their experience during COVID-19 in general. One student participant felt their abilities to utilize the clinical skills learned during COVID while in a clinical setting were negatively affected compared to the skills learned prior to the pandemic in a face-to-face environment.

> I think [learning psychomotor skills online] definitely affects how we do in the clinics because you're trying to adjust to doing all of these things on an actual person and on different body types and after not really learning it very well in the first place. (Student AZ, Second-year)

Faculty had to adapt to teaching clinical skills in an online or hybrid manner for several of the beginning months of the pandemic. This greatly affected students' confidence regarding their acquisition of these clinical skills prior to clinical and performance of the skills during subsequent clinical rotations and called into question the perceived quality of instruction delivered during the initial months of COVID-19.

Quality Codes Related to Adaptation of Teaching and Learning Styles

The Quality code group contained the initial codes of Feedback, Missing out, and Value (see Figure 3). Many of the adaptations to teaching and learning of psychomotor skills necessitated by the pandemic brought forward initial codes surrounding the quality of instruction during COVID-19. The initial code of Feedback was mentioned by participants for three different situations: online lecture instruction, during practice of psychomotor skills, and during clinical rotations. Feedback during lecture and lab instruction changed in ways that affected students' ability to ask questions and faculty's ability to engage students and answer questions. Several faculty participants stated that their quality of instruction may have been reduced because it was more difficult to gauge student engagement and understanding over Zoom, and personal connections were harder to create and maintain through an online platform where eye contact and feedback opportunities are reduced. Student and faculty participants also noted technology-related problems often arose during lecture and lab instruction resulting in delays. These delays further reduced the time for content delivery, responding to student questions, and providing faculty feedback.

Most student and faculty participants who discussed feedback related it to practicing psychomotor skills in preparation for clinical rotation. One major disadvantage related to quality of instruction through virtual means was the inability for faculty to provide students with immediate feedback when practicing clinical skills. Because they were concerned about the potential for psychomotor skills deficits, some student participants requested additional time to practice these skills with their clinical instructors as a mechanism to gain additional feedback and practice once they resumed clinical experiences after the onset of COVID-19. Faculty participants noted the importance of clinical education in a PT program because it allows for supervised practice of skills with actual patients in clinical settings. Faculty WX noted awareness of student concerns related to their clinical skills but also indicated that the opportunity to work on these skills in the clinic and receive feedback from clinical instructors is

50

why these opportunities exist in PT curriculum: "Even though the students had less confidence,

clinical instructors didn't notice it... they used it as an opportunity to work on those skills in the

clinic, which is why we have clin ed." Participants felt the quality of instruction declined when

faculty gave and students received feedback in variable forms and in decreased amounts while

learning psychomotor skills. Students and faculty not only had to adapt their learning and

teaching styles but do so under conditions that made providing feedback more challenging

supporting the sense that it was a time of "crisis learning."

Because feedback opportunities and potential quality of instruction was affected during

lecture and lab instruction, the perception that students were "missing out" on certain

opportunities emerged as another initial code within the quality group. The initial code of

"Missing Out" was also connected to the code of clinicals/clinical skills, as students felt they

were unable to implement certain skills learned during COVID in the clinic due to lack of

opportunity. Many students and faculty participants noted a reduced ability to receive instructor

feedback while practicing clinical skills online, thus missing out on important experiences or

corrections. Even when lab instruction returned to in-person format, several faculty participants

stated they purposefully reduced hands-on feedback simply due to increased risk of COVID

exposure. Depending on the campus, students were only able to practice on a single lab partner

during lab time or had smaller lab groups and fewer exposures to practice partners of different

body types. In previous years, students were encouraged to switch lab partners and practice on

multiple body types. COVID-19 exposure risk reduced that practice with multiple partners, and

students and faculty felt that this led to many students "missing out" on learning opportunities

and potentially reduced the quality of instruction and student confidence in clinical skills. Despite

feelings of missing out, students and faculty used the experiences they could perform, and

adapted their learning and teaching styles to the evolving COVID environment.

The initial code Value also emerged from the data and was grouped into quality

surrounding teaching and learning. The initial code Value held several different meanings by

various participants. A few students and faculty perceived their courses had lost tangible value. A few faculty participants noted that though their mode of instruction and assessment may have changed, students were still learning and tested appropriately for safety and skill before going to the clinic. In relation to the initial code of value, Faculty TU stated: "...My perception that [my instructional method] was not good enough was not accurate and that…students were engaged and were learning if I set up the experiences appropriately." Several student participants also felt the financial value of their courses had declined with changes in the mode and quality of instruction. Additionally, the initial code of Value also pertained to how participants valued their time with friends and family, the support of their fellow students or faculty, and how much they learned and grew throughout this experience. Because of these participant descriptions surrounding the code Value, this initial code connects in many ways to the first major category of Prioritizing Mental and Physical Health.

Students and faculty noted at the beginning of the pandemic, acclimating to changes in mode and quality of instruction was a significant challenge, but that over time it became easier as both parties adapted, learned from mistakes, and were able to improve teaching and learning strategies in subsequent semesters. While faculty reflected on the mode and efficacy of instruction, students reflected on how they could process new instructional materials to the best of their abilities in order to pass courses. One faculty participant demonstrated the major category of Adaptation of Teaching and Learning Styles with this quote:

> I learned that the students truly can adjust their learning style. Yes, they have their comfortable learning style, but that doesn't necessarily mean that that's the best in every situation, and that they can't adapt too. They just need to know how to do it so kind of working with them on that. (Faculty PQ)

Minor Categories Related to Adaptation of Teaching and Learning Styles

Initial and in vivo codes connected and interacted in ways within the major category of Adaptation of Teaching and Learning Styles that created two minor categories during the focused coding stage of data analysis. These minor categories are Changes in Mode and

Perceived Quality of Instruction and Using Feedback During Clinical Experiences (see Figure 3). The minor categories demonstrate more specific ways in which the initial codes of this major category relate.

The first minor category of Changes in Mode and Perceived Quality of Instruction contains initial and in vivo codes from within the Context and Quality groups and the standalone initial code of clinicals/clinical skills. As the mode of instruction swiftly shifted online at the beginning of the pandemic, students and faculty adapted their teaching and learning styles within the context of "Crisis Learning" and Home Environment. The initial code of Clinicals/Clinical Skills is also incorporated into this minor category, as hands-on clinical skills were being learned in an online mode and this created perceptions of reduced quality of instruction. The initial codes within the Quality grouping (Feedback, Missing Out, and Value) are key components of this minor category as well. With the mode of instruction shifted online, students and faculty participants found that feedback given and received in lecture and lab instruction declined in quality, along with the value of instruction, creating perceptions that students were missing out on learning opportunities previously available before the onset of COVID-19. One faculty participant noted how they attempted to maintain the quality of the course in an online format with the intention of keeping students prepared for clinical rotations:

> [I had to turn] a very hands-on lab-based course into a completely virtual setup, so definitely required a lot of very quick creativity…and in order to make sure that we still got the quality of the course and the material and the skill appropriately imparted to students, so they can you know would still be successful in clinical rotations etcetera, but in a completely virtual environment with very little time to brainstorm and prepare and determine best practices. (Faculty AB)

The second minor category within the Adaptation of Teaching and Learning Styles major category is Using Feedback During Clinical Experiences. All initial codes of this major category are incorporated into the minor category Using Feedback During Clinical Experiences but in different ways compared to the previous minor category Changes in Mode and Perceived Quality of Instruction. The initial codes of Survival/ "Crisis Learning" and Home Environment are

important contexts for this minor category as students were learning psychomotor skills online at home with minimal feedback. Students and faculty voiced increased reliance on student practice of these clinical skills during clinical experiences in order to receive further feedback from clinical instructors and ultimately obtain entry-level expertise. Using feedback during clinical experiences was a way students and faculty could combat feelings of missing out and increase the value of their clinical education experiences when the value of initial learning was perceived as inadequate or lower quality.

The first minor categories of Changes in Mode and Perceived Quality of Instruction and the second minor category Using Feedback During Clinical Experiences connect through all the initial codes of this major category. Students and faculty reflected on teaching and learning strategies used during COVID-19, as this was a large key to creating adaptability in both groups. Adaptation of Teaching and Learning Styles was an important aspect of how COVID-19 impacted DPT student and faculty experiences. Students and faculty had to adapt to the changes in the mode and perceived quality of instruction and rely on feedback acquired during clinical experiences to fill in the gaps for hand-on skills that were not practiced or learned in-person.

Enhanced Non-Academic Expectations Between Students and Faculty

The final major category contributing to the grounded theory of this study was Enhanced Non-Academic Expectations Between Students and Faculty. Six initial codes emerged during the initial coding phase, illustrated in Figure 4. From these initial codes, the major category of Enhanced Non-Academic Expectations Between Students and Faculty was created. Two minor categories of Clear and Open Communication and Empathy, Grace, and Compassion emerged during the focused coding stage out of the major category. Figure 4 demonstrates the number of faculty and student participants who mentioned each initial code, and how the initial codes fit into two groups: Interactions and Attributes. The major category of Enhance Non-Academic Expectations Between Students and Faculty is highlighted in yellow.

54

Figure 4

Enhanced Non-Academic Expectations Between Students and Faculty
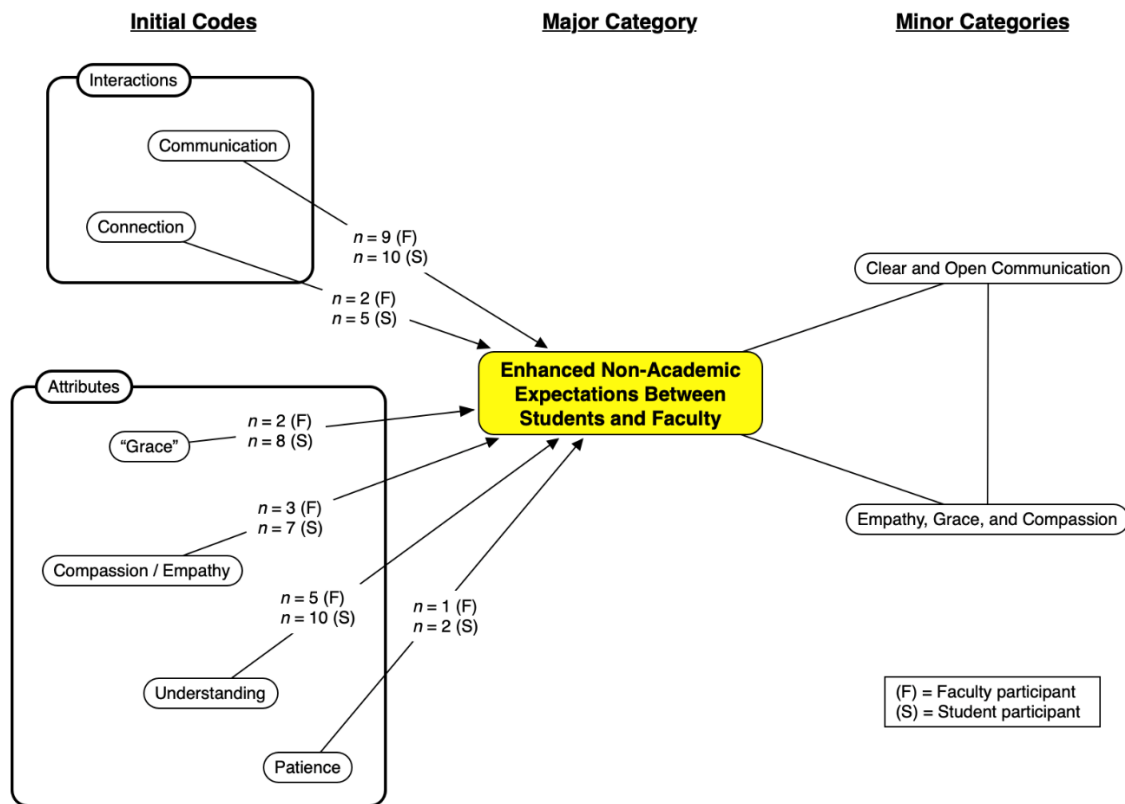
Interactions Codes Related to Enhanced Non-Academic Expectations Between Students and Faculty

The first grouping of initial codes related to Interactions. Communication was the first initial code within the Interactions group and was the most frequently used initial code in this group, mentioned by nine out of 10 faculty and 10 out of 26 students. Student participants noted that faculty who communicated honestly with students about their own insecurities and uncertainties, and encouraged students to do the same, were generally well received. The circumstances surrounding COVID-19 were so novel and unexpected that one of the most prominent strategies for both students and faculty to manage expectations throughout the first few months was to maintain honest, clear, and open communication. Students and faculty

participants voiced that, in retrospect, everyone was just doing their best over the first few months of the pandemic. Student and faculty participants each noted that though clear communication was not a new expectation, frequent and effective communication was an important way faculty and students could interact and maintain connections and relationships.

> Yeah, I think communication with them was a little bit harder over Zoom, like if you don't understand something in class it's easy to stay after and talk to your professor real quick but on zoom it's a little more difficult, if you have technological issues and then just having to try to talk, while there's other people also trying to communicate through Zoom. (Student ZZ, Second-year)

The second initial code within the grouping of Interactions was Connection. Checking In with peers as part of Prioritizing Mental and Physical Health was strongly connected to the initial code of Connection. In order to manage the chaos brought on by the pandemic, all participants reported increasing their expectations of clear and open communication between students and faculty as a pathway to creating more meaningful and purposeful connections. Students and faculty had to make connections with each other and reflect on each other's perspectives while managing the frustrations that grew during COVID. Faculty EF noted conflicting feelings surrounding connection and expectations of students: "On one hand, I feel like maybe that [the students and faculty] grew closer. But on the other hand, I also feel like there's frustrations in kind of our expectations of them and their expectations of us." Other faculty and student participants indicated that honesty, patience, and flexibility improved stressors related to expectations, and fostered more useful connections between students and faculty.

Attributes Codes Related to Enhanced Non-Academic Expectations Between Students and Faculty

The last grouping of initial codes under the major category Enhanced Non-Academic Expectations Between Students and Faculty was Attributes. Four initial codes fall within this grouping: "Grace," Empathy/Compassion, Understanding, and Patience. The first in vivo code of "Grace" was utilized by faculty and student participants when discussing attributes required when managing the challenges of COVID-19. During the spring and summer semester of 2020,

students and faculty were forced to swiftly shift how they managed didactic content and lab instruction and assessment of hands-on skills in an online or hybrid format. Faculty participants reported being very alert to student stress and feelings of being overwhelmed during the initial months of online teaching and learning, and the importance of allowing grace for missed classes. Faculty participants also reported that they gave grace surrounding late assignment submission and demonstration of hand-on skills via Zoom during the first few months of online instruction. Some student participants did voice that they recognized how hard faculty were working to try and create the best learning environment and communication for them and were willing to give faculty members patience. Third-year student CC commented on the reciprocal nature of the attribute of grace: "We're giving [the faculty] grace and then they were also giving us grace back." Enhanced grace between students and faculty became expected as both groups navigated the unknowns and stresses during the initial 18 months of COVID-19.

Empathy/Compassion was a second initial code within the Attributes grouping of the major category Enhanced Non-Academic Expectations Between Students and Faculty. Students had conflicting feelings regarding the amount of empathy and compassion they received from faculty. Some student participants recognized the empathy and modification of academic expectations that came from certain faculty, while other students felt they were given more work, and certain faculty were not compassionate to the stress students were facing. One student participant noted their recognition of faculty stress and struggles but felt conflicted feelings about faculty empathy.

> I acknowledge that [the faculty] did their best, but, like still going through that sucked. And even though [the faculty] were trying to do everything they could, like, sometimes they did make it harder. Sometimes they did make it easier. (Student UU, Second-year)

For many student and faculty participants, the initial code of Empathy was strongly connected to the initial code of Communication. Frustrations and stress increased when students did not receive clear communication from faculty about coursework and how instruction was going to change. Several students noted intense feelings of frustration when faculty did not appear

empathetic to their concerns, whether they be academic or personal. Most faculty participants seemed very receptive to this enhanced expectation and necessity of empathy and communication, stating their frequency of sending email communications and announcements through Canvas increased significantly. Several faculty participants voiced that this level of communication often felt excessive, but it was used with intentions of support, compassion, and empathy for the students.

> So I felt like there was a lot of overcommunication, but I felt also from my end I was trying to be really empathetic, really sensitive to the stress that [the students] were under and trying to relay, you know, that compassion and support. (Faculty AB)

Student participants reported they expected empathy and compassion from faculty, as well as expected a certain allowance of grace during this period of frustrations and feelings of being overwhelmed. While several student participants expressed struggles with mental health and anxiety over the past year, they also expressed gratitude toward faculty who made clear efforts to have empathy and compassion for students.

Understanding and Patience were the last two initial codes within the Attribute grouping of the major category Enhanced Non-Academic Expectations Between Students and Faculty. Faculty and student participants noted how they learned to be more patient and understanding with each other during this time of uncertainty. When asked what they had learned from this experience, Student OO (Third-year) stated: "I think I really just learned to be patient and flexible, just because like, we didn't know what was gonna happen." The initial code of "Grace" was connected to Patience as well. A few faculty participants voiced appreciation of student patience and flexibility when faculty encountered technical difficulties on Zoom or were caring for their young children when lecturing from home. Student and faculty participants recognized that shared patience and understanding were important attributes, as they became enhanced as expectations during the pandemic.

Though Empathy/Compassion and Understanding were frequent initial codes utilized by participants, it is worth noting that faculty did not expressly state they increased their

58

expectations of empathy and compassion from students during the sudden shift to online

instruction and changes that occurred in the semesters following spring of 2020; however, many

students still provided empathy and grace despite all the chaos and stress that everyone was

working through. Many faculty participants stated they were very up-front with students about

the novelty of this type of instruction and asked students for feedback and patience as they

learned to get through this time together. Nevertheless, no faculty member reported

expectations of empathy or grace from students.

Minor Categories Related to Enhanced Non-Academic Expectations Between Students and Faculty

Clear and Open Communication and Empathy, Grace, and Compassion emerged as the

two minor categories within the major category of Enhanced Non-Academic Expectations

Between Students and Faculty. They interact with each other as two related minor categories

out of the major category (see Figure 4). Similar to the previous minor categories of the first two

major categories, the initial and in vivo codes that created the major category of Enhanced Non-

Academic Expectations Between Faculty and Students all connect to create these minor

categories.

All initial and in vivo codes contributed to the minor category of Clear and Open

Communication. The initial codes of Connection and Communication within the Interactions

grouping were more prominent. Compassion, empathy, understanding, patience, and grace

became expected as students and faculty were managing stress. In order to convey and

demonstrate these attributes, students and faculty enhanced a previously established

expectation of open and clear communication. All faculty participants reported becoming more

sensitive to students who were experiencing struggles with their living situations, family issues,

and mental health, and did their best to maintain open communication to students about their

own struggles and availability and support. Student participants voiced appreciation for those

faculty who communicated clearly and with intentions of empathy and care. One student noted

how this communication further helped manage other expectations during this time of

uncertainty and frustrations:

> I think [the faculty's] open communication did really help manage our expectations, especially because a lot of them were like, you know, we don't know what we're doing either. So just, like, bear with us, like, let us know if there's anything like we can do. (Student OO, Third-year)

The second minor category of Empathy, "Grace," and Compassion incorporated all initial

and in vivo codes of the major category Enhanced Non-Academic Expectations Between

Students and Faculty as well, but with more emphasis from those codes withing the Attributes

grouping. Communication and Connection as initial codes were important as the means by

which students and faculty could convey empathy and understanding to each other, especially

during stressful or unexpected difficulties. Faculty participants reported they became more

patient with students and provided more "grace" in many instances. For example, faculty

became more willing to allow grace for missed classes due to illness or doctor appointments

and allowed more forgiveness for late assignment submissions compared to past years. The

initial codes of Compassion/Empathy and Understanding were most frequently noted by

students and faculty as part of how COVID-19 impacted expectations of one another. Though

these expectations were shared between students and faculty, there was somewhat of a bias to

the benefit of students as faculty reported providing students with empathy and grace, but did

not specifically state they expected empathy and grace in return. One faculty member noted

how they learned self-compassion, understanding, and forgiveness, as well as forgiveness for

students during the uncertainty of the pandemic:

> I'd also say it was really important to learn forgiveness for both myself, as well as for my students and my fellow faculty members, because you know, things were not perfect and mistakes were made. None of it was intentional, but we were all in the process of learning...So it was really an embarking on discovery, a lot of forgiveness, and also just embracing the uncertainty I think that's really what it came down to. (Faculty GH)

As students and faculty learned to prioritize their physical and mental health and adapt

to new teaching and learning styles, enhanced expectations of clear and open communication

and empathy, grace, and compassion became necessary. The minor categories of Clear and

Open Communication and Empathy, "Grace," and Compassion were essential as Enhanced

Non-Academic Expectations Between Students and Faculty and created opportunities for

students and faculty to reflect and experience growth during the first 18 months of COVID-19.

Grounded Theory of Resilience in Faculty and Students During COVID-19

The combination of the three major categories, (a) Prioritizing Mental and Physical

Health, (b) Adaptation of Teaching and Learning Styles, and (c) Enhanced Non-Academic

Expectations Between Students and Faculty, present in the data resulted in the emergence the

central grounded theory of resilience in students and faculty during COVID-19. In this context,

resilience is defined as the capacity to adapt to and recover from difficulties, misfortune, or

unexpected change. Students and faculty developed and displayed resilience as they coped

with adverse situations and adapted to their ever-changing world at home, school, and in the

workplace. Table 3 provides the complete model that emerged as the codes created the three

major categories and their associated minor categories. Table 3 is color coded to demonstrate

the codes most associated with their respective major and minor categories. Table 3 also

contains the initial code Resilient/Resilience highlighted in green.

Table 3

Coding Table for Grounded Theory of Resilience in Students and Faculty during COVID-19

Initial Code	Faculty	Students	Major category	Minor categories	Theoretical code
	n	*n*			
"Transition"	2	6	Prioritizing Mental and Physical Health	Finding Positives Through Community	
Unknown/ uncertainty	2	4			
"Stress"	7	20			
"Anxiety"	1	6		Understanding and Managing Stress	
"Frustration"	3	8			
Fear	2	6			
Finding the Positive	3	5			
"Everyone is in this together"	3	8			
"Checking in"	1	6			
Survival/"crisis learning"	2	8	Adaptation of teaching and learning styles	Changes in mode and perceived quality of instruction	Resilience in students and faculty during COVID-19
Home environment	5	7			
Clinicals/clinical skills	4	15			
Feedback	2	6		Using feedback during clinical experiences	
"Missing out"	2	4			
Value	3	2			
Communication	9	10	Enhanced non-academic expectations between students and faculty	Clear and open communication	
Connection	2	5			
"Grace"	2	8			
Compassion/empathy	3	7		Empathy, grace, and compassion	
Understanding	5	10			
Patience	1	2			
Resilient/resilience	6	2			

62

The grounded theory of resilience in students and faculty during COVID-19 emerged as the central core category combining all initial and in vivo codes, the three major categories, and the six minor categories. Resilient/Resilience was an initial code shared by student and faculty participants and is separated from the others in Table 3 as it contributed to all major categories. It is important to note that none of the questions in the semi-structured interview guides for faculty or student participants (see Appendices G and H) directly asked about resilience nor was the word referenced in any of the questions. Six faculty participants used a form of the word resilience as an initial code during the initial coding phase of data analysis. Faculty participants recognized resilience in students and faculty, through their abilities to adapt and overcome the challenges brought on by COVID-19. When asked what they learned from this experience, Faculty CD commented: "I've learned that we're resilient, we're gritty, we can pivot, we can, we can be successful, we can be creative." Two student participants used the word resilient in vivo. One student participant noted how PT school teaches students to be resilient, especially during times of struggle when many factors are not within one's own control.

> I think one of the most important things that I've learned throughout this whole pandemic, you know, throughout spring 2020, Summer 2020, all 2020 leading up to now is that, you know, as, as much as we're really brought up throughout the PT community and our PT school journey, to be gritty and to be resilient, I think that ultimately, there are gonna end up being things that you just can't change them, and you have no control over. (Student PP, Third-year)

As previously described, there was often overlap and interaction between the minor and major categories, all of which were related to the concept of resiliency in students and faculty.

Model of Resilience in Students and Faculty During COVID-19

Figure 5 provides a visual representation of the grounded theory of resilience in students and faculty during COVID-19 with the minor and major categories and color-coded to match the coding in Table 3. The three major categories interact with each other in the outer circle and encompass resilience in students and faculty during COVID-19 at the center. Resilience is the core theoretical category grounded in the data.

Figure 5

Grounded Theory of Resilience Model
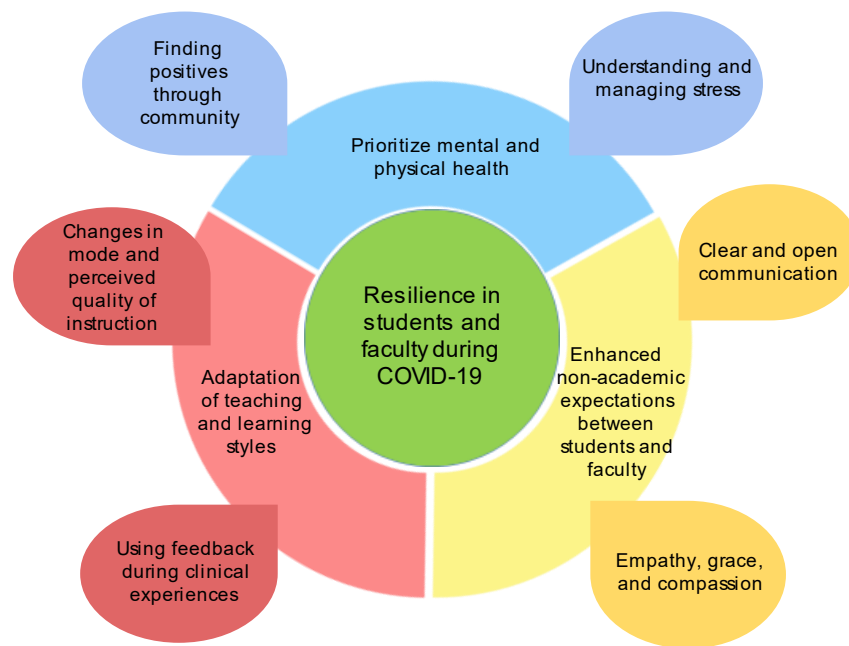
Interaction Between Major Categories

As previously stated, resilience was demonstrated by students and faculty adapting and recovering from the difficulties and challenges experienced while enrolled or teaching in the DPT program during COVID-19. Students and faculty demonstrated resilience by sharing the major categories of Prioritizing Mental and Physical Health, Adapting Teaching and Learning Styles, and Enhancing Non-Academic Expectations. Connection between the major categories the encompass the grounded theory of resilience in students and faculty during COVID-19 became apparent as participants described their experiences during the pandemic.

Students and faculty described prioritizing their physical and mental health by finding positives through their community and reflecting on their own situations and the situations of others to understand and manage stress. Understanding and managing stress and forming a sense of community became essential as students and faculty made a sudden and unexpected shift to online and unplanned hybrid teaching and learning strategies. They demonstrated

resilience as they adapted to the changes in teaching and learning styles that accompanied this shift. These shifts in learning and teaching styles were evident in student and faculty responses related to how they utilized feedback during clinical experiences as well as how they adjusted to the changes in mode of instruction and their perceived experiences of any shifts in quality related to that change or adjustment. Faculty voiced how they modified their teaching and communication styles to adjust to perceived stress they felt students were experiencing and reflected on their own resilience and the resilience of their students during this time of uncertainty. Student responses also reflect this overlap in the categories by recognizing their need to prioritize their mental and physical health while learning from home and utilize feedback during clinical experiences if they did not feel confident with performing psychomotor skills learned online. Students and faculty also demonstrated resilience by enhancing non-academic expectations of open and clear communication and empathy, grace, and compassion, which created interactions and an environment that allowed for prioritizing mental and physical health and adaptation of teaching and learning styles. Faculty PQ provides a solid example for the grounded theory of resilience in students and faculty during COVID-19 with this quote: "I've learned that faculty and students are more resilient than we give ourselves credit for."

Relationships and Interactions Between Students and Faculty

The last research question of this dissertation included examining how COVID-19 impacted DPT student and faculty relationships, interactions, and expectations. Communication and Connection were identified as initial codes within the Interactions grouping, which contributed to the major category of Enhanced Non-Academic Expectations Between Students and Faculty. Participant responses related to how COVID-19 impacted relationships and interactions were the most variable and inconsistent responses related to a specific research question. This final section of results addresses connections within interactions and relationships between students and faculty and the inconsistencies in participant responses.

Interactions Between DPT Students and Faculty

Students and faculty both reported that during COVID, the mode and nature of their interactions changed to become primarily via email, phone, or Zoom as opposed to in-person meetings. Frequency of interactions varied. While some faculty reported that the frequency of these online interactions increased, others reported frequency of online student meetings via Zoom or office hours remained low. Faculty also reflected on the quality of their interactions and how interactions with students may have been affected by the shift to less in-person meetings. Five faculty members stated they attempted to make virtual interactions more frequent and as authentic as a face-to-face interaction, but many times these online interactions did not have the same quality as in-person meetings. Faculty GH voiced: "I mean certainly there were more virtual interactions for sure, but I think the virtual interactions, they weren't, I tried to make them as, as authentic and real as if… we were face-to-face." Another faculty member, Faculty JK, noted that virtual interactions did not allow more emotional connections to form, and this can tie into their difficulty with forming relationships with new classes of students they had not taught previously before COVID.

When asked about their interactions with faculty members during COVID-19, student participants also noted their mode of interaction shifted to mostly web-based. Students provided varied opinions on both the frequency and quality of interactions with faculty. One student noted how their interactions increased in frequency, and their willingness to email professors questions or ask questions on Zoom changed compared to before COVID.

> It's you know, obviously just, it was all web based which I mean, I guess, in a way, like now I'm more open to like emailing professors with questions and stuff like that, whereas before, I would just like wait until someone else like asked the question in class. (Student LL, Third-year)

Other student participants commented on interactions after return to in-person lab instruction. Though a majority of student participants reported minimal change to interactions with professors during lab instruction, student responses were inconsistent and often contradictory.

Third-year student KK noted how receiving instructor feedback about clinical skills was difficult due to the set-up of lab and social distancing but goes on to say how interactions with faculty did not change overall: "You had to sit and wait for them to come over and didn't get as much feedback and so think that was difficult but I think, for the most part it didn't change too much."

When asked specifically about the quality of interactions and relationships with faculty during the pandemic, student participants had varying perspectives. Student PP (Third-year) reported having positive interactions before and during the pandemic. The same student also reported how faculty were open and willing to have academic and non-academic conversations. Another student participant reported frustrations and poor communication from faculty when asked about faculty interactions.

> There was a lot of confusion with assignments, and things that we pretty much just said, like "Let's just get through this semester and figure things out later." So the quality of knowledge gained there was slightly lacking due to questions not being answered and poor communication with the faculty. (Student RR, Second-year)

The impact of the changes in frequency and mode of interaction on student-faculty relationships was not consistent across study participants. Some participants identified reduced quality in these interactions while others did not. Most faculty reported making intentional efforts to communicate their availability and offer help to students. Some students felt more open to interacting virtually with faculty, while others felt frustrated by what they perceived as faculty's poor communication and did not initiate interactions with faculty. These inconsistencies in participant responses related to interactions can also be seen in how students and faculty define relationships with one another.

Relationships Between DPT Students and Faculty

When describing relationships, many faculty participants described class dynamics, connections, and communications they had with students related to the courses they taught. When asked about their relationships with students during COVID-19, four faculty members noted they felt they maintained a good relationship with students they taught in courses prior to

the pandemic, with most of their communications conducted through phone or online means. However, these same faculty noted how building relationships with new cohorts of student through online platforms and even after return to in-person classes with social distancing and masks was more difficult.

> I had a good relationship with the students when, when everything shut down. I was in middle my third semester, with the same group of students. So, I felt comfortable communicating with them, you know online or by phone or whatever, in that way. I think it's been a bit more challenging working with the newer students, you know when they come in and then with my summer course being online. (Faculty LM)

According to seven out of 10 faculty participants, relationships between students and faculty did not change significantly during the first 18 months of the pandemic. However, many of these faculty participants who expressed this opinion also reported that they did make an effort to contact students more frequently than they did pre-pandemic. One faculty member voiced conflicting descriptions surrounding change in relationships with students:

> I'm not sure that I would, I would say that I changed my relationship with students so much, but I certainly reached out more and when they responded I spent probably a little more time last summer, with a handful of them who were struggling. (Faculty CD)

Indeed, most faculty participants described communications and checking in with their students as the main component of their relationships with their students. There was a faculty member who reported that relationships improved. Faculty AB attributed their improved relationships with students to increased accessibility via virtual meetings on Zoom, stating: "I feel like I have better relationships with students post-COVID than pre… It took away the commute, it took away, the you know, finding physical space. And it, I think made me more accessible." Faculty perspectives on the quality of relationships varied similar to those on the quality of interactions with students.

Student participants also provided conflicting responses when describing the impact of COVID-19 on their relationships with faculty. Sixteen out of 26 students stated they felt their relationships with faculty did not change. Second-year student YY noted how students and faculty bonded through common struggles brought on by the pandemic, but they felt those

circumstances did not necessarily change their relationships with faculty. Many students described the ability to reach out to professors as a construct of their relationship. Other students stated they recognized faculty's open availability and communication but chose not to reach out to faculty even though they felt comfortable doing so. A few students reported they chose to reach out to faculty about matters in their personal lives, and that improved their relationships with a single faculty member but not with others.

Additionally, many student participants recognized the quality of the student-faculty relationship was more influenced by the individual professor than the pandemic. When the student had a negative relationship with a professor prior to the pandemic, that specific relationship remained negative and possibly intensified, while pre-pandemic positive relationships remained positive. One student participant speaks to this aspect of relationships:

> Relationships were specific to professors: I feel like some of the professors, there's like one or two that I before I was like I don't really like this person, but it's fine. You know that's how it is, but then after COVID I like became resentful of some of those professors and it became very, very negative so like it's hard to get yourself out of that. (Student NN, Third-year)

Faculty participants reported making efforts to communicate their availability to students and maintain a good relationships and interactions despite the stress, anxieties, and frustrations experienced by everyone. But maintaining a good relationship requires effort from both parties. One student participant recognized their own reluctance to reach out for faculty help, and stated they knew faculty were also under a lot of stress and did not want to burden them with questions.

> [I] recognize that building a relationship through interaction take effort from students and professor, [but] didn't want to burden the professor with questions. I think I could have maybe did a better job, maybe trying to work on that interaction, not just leave it all on them to create that interaction with me or with students, so I think I could have done a better job with that, of trying to create a relationship. (Student MM, Third-year)

When addressing quality of relationships with students, Faculty JK also noted how COVID-19 decreased the amount of time for authentic interactions between students and faculty, and building those relationships required both student and faculty effort. Though students and

69

faculty perspectives on how COVID-19 impacted their relationships and interactions with one another varied and were inconsistent, a majority of students and faculty felt their relationships and interactions were not significantly impacted by COVID-19.

CHAPTER V

RECOMMENDATIONS AND CONCLUSIONS

The purpose of this grounded theory study was to develop a theory explaining the impact of COVID-19 on the experiences of students and faculty in a DPT program. While no participants were asked about resilience, the theory that emerged from the data was one centered on resilience. Though resilience in students and faculty in higher education has been explored separately by researchers prior to COVID-19, the grounded theory of this dissertation proposes that resilience is central to how the COVID-19 pandemic impacted DPT students and faculty together. The results of this study offer a theory of resilience that incorporates three main categories: Prioritizing Mental and Physical Health, Adaptation of Teaching and Learning Styles, and Enhanced Non-Academic Expectations Between Students and Faculty.

Resilience in Students and Faculty

Many definitions of resilience exist throughout literature. Sanderson and Brewer (2017) suggested a process-based definition of resilience as the "dynamic capacity to overcome adversity, drawing on personal, social, and organizational resources, to achieve personal growth and transformation" (p. 69). Resilience requires learning from difficult experiences that usually require self-improvement and growth and is dependent on drawing from internal and external resources. There is also a link between mental health and resilience, as well as a connection to personal growth throughout the adaptation process. Resilience has been shown to have positive effects on healthcare profession students' psychological well-being and life satisfaction (Labrague, 2021). Though the COVID-19 pandemic has been a stressful and challenging experience for both students and faculty in DPT programs, all participants voiced a considerable amount of personal growth and resilience during this time.

Building resilience in DPT students and faculty may be challenging but necessary, considering the impact of COVID-19. Sanderson and Brewer (2017) considered resilience to be a process rather than a trait or skill which suggests that students' resilience can be affected by

university faculty in healthcare education. The process of building resilience in students is affected by leadership, thus, resilience can be taught and learned both directly and indirectly (Brewer et al., 2021). Direct approaches involve faculty purposefully teaching the concept of resilience or specific resilience enhancement strategies to students. These can include reflecting on understanding, forming a shared vision of resilience with other students and faculty, and recognizing teammates that can help further develop resilience (Brewer et al., 2021). Indirect approaches include role modeling, clarifying expectations, or creating a sense of belonging and encouraging help-seeking through observation (Brewer et al., 2021). The results of this dissertation suggest open and honest communication, encouraging students to seek mental health services if needed, and modeling positive attitudes despite frustration and stress are useful strategies in building student and faculty resilience. Student participants were also able to build resilience by reflecting on the perspectives and struggles of other students and faculty members. Student PP (Third-year) reflected on their experience, stating: "I think just putting myself in others' perspectives and other shoes and understanding those things, has done wonders for me throughout this pandemic."

Faculty in a physical therapy program faced many challenges similar to those of their students after the onset of COVID-19. Building resilience in faculty is equally important to ensuring success through the difficult experience of the continuing pandemic and can be accomplished through various faculty development processes. Encouraging optimism and persistence during challenging circumstances can build resilience in individual faculty members. Understanding and supporting faculty self-efficacy and practicing reflection after positive and negative experiences are also encouraged for fostering resilience in faculty (Burdick, 2015). Faculty without qualities of resilience may choose to leave their place of employment, which can be detrimental to student experiences and learning (Aguilar, 2018). Faculty participants in this dissertation modeled positivity and flexibility to each other and their students during the constant chaos of the initial phase of the pandemic and stated that their own physical and mental health

was a priority along with encouraging students to prioritize personal health. Burdick (2015) suggested development of a strong social network and focus on personal health as a strategy for building resilience in faculty, which may translate as a strategy for building resilience in students as well. Faculty GH stated how faculty modeled positivity for each other by stating: "The faculty were able to come together and encourage each other to stick together and so forth." Faculty voiced that support for each other and support from DPT program leadership, despite potentially lacking organizational support from university administration, was key to maintaining positivity and persistence as policies surrounding COVID-19 evolved and allowed for return to in-person instruction and practice of hands-on clinical skills. Though faculty self-efficacy was not directly addressed, many faculty participants reflected heavily on the efficacy of their instruction during the initial stages of the pandemic, as well as how students reacted to the instructional changes necessitated by the pandemic. This reflection was a powerful tool for fostering adaptability of teaching and learning styles for both faculty and students, and in turn, resilience.

Resilience is a process of adaptation and growth through experiences of adversity. DPT students and faculty demonstrated an enormous amount of resilience as a result to the pandemic through their relationships, interactions, and expectations. Results of this dissertation suggest interactions and relationships between DPT students and faculty had minimal change but varied by individual students and faculty (i.e., previously established positive student-faculty relationships and interactions remained positive, and previously negative student-faculty relationships and interactions remained overall negative). It should be noted that students were not always satisfied with how faculty handled the stress-inducing circumstances of COVID-19, and not all faculty felt that students were professional when addressing frustrations through various interactions via email, Zoom, or in-person. However, the amount of positivity and optimism from student and faculty experiences ultimately outweighed the negative, leading to greater growth and stronger resilience for each. In order to maintain positivity despite the many

73

negative stressors during the pandemic, expectations were heightened for faculty to provide empathy, compassion and grace, as well as for students and faculty to provide open and honest communication among one another. This is the third component of student and faculty resilience theory. Because the grounded theory of student and faculty resilience is multifactorial, each major category is addressed separately in the discussion sections that follow.

Prioritizing Physical and Mental Health

Even outside of pandemic circumstances, DPT students exhibit a significantly increased incidence of mental health disorders such as anxiety, stress, and depression compared to their age matched peers. This is particularly apparent during their first year of the rigorous curriculum (Bogardus et al., 2021). Participants in this dissertation were at the end of their first and second year of the DPT program during the initial onset of COVID-19. These students were more likely to experience compounded stress and anxiety from the rigor of their program along with the mental and physical health challenges that came from the pandemic. Faculty mental and physical health is an equally important part of resilience. In a study investigating the coping strategies and mental health of college faculty and staff during COVID-19, 18-21% of faculty met the cutoff for clinical anxiety (Melnyk et al., 2021). It is crucial for faculty to have a sense of self-efficacy and support for mental health, especially during the pandemic and as the circumstances surrounding the pandemic evolve.

Building strong resilience in DPT faculty during challenging times by encouraging prioritization of physical and mental health can lead to stronger resilience in students, as resilient faculty model these priorities to their students. During the beginning of the COVID-19 pandemic, students and faculty developed their own individual resilience by putting their own physical and mental health first, independent of any organization developed strategies. Many also made the commitment to check in on each other during times of isolation with online learning. Student BB (Third-year) voiced how essential checking in with classmates became for mental health: "And so you don't know who, who's struggling, who's not, and so making that

intentional decision to check in on your classmates." With no current timeline for the potential end of the COVID-19 pandemic, it may be beneficial for organizations to identify ways to facilitate the prioritization of physical and mental health as a means to assist development of resilience in faculty and students.

This dissertation confirmed that both students and faculty participants from a traditional face-to-face DPT program reported increased anxiety during the transition to home learning, as well as difficulty using one space for multiple functions: teaching, learning, studying, cooking, sleeping, and research. Rose (2020) also identified isolation and loss of motivation were caused by the shift to virtual learning at the start of the pandemic. Participants also reported feeling isolated and suffering from the loss of social support during periods of solely online instruction. Even with the return to campus for in-person instruction of psychomotor clinical skills in the summer of 2020, incorporating new policies of smaller lab sizes and constant wearing of masks and social distancing, students and faculty continued to experience stressors that required patience and adaptability. Faculty and students adapted in response to ever-changing new stressors by learning to manage their mental health struggles using strategies including open and clear communication. Good communication was a critical component to overcome the frequent changes in instruction and reduce a sense of social isolation.

> I think when I could stay calm and explain to the students, This is what I'm doing. This is how we're going to do it. Even if this might not be the exact same as what it was before, I'm also going to be your instructor in [a later course], so I can also thread it back in through there. I think it kind of took a little anxiety away at least from that part, which has kind of helped with that sudden change in the learning. (Faculty PQ)

DPT students and faculty have also faced a sense of burnout and pandemic fatigue during COVID-19. Pandemic fatigue, or feelings of mental or physical exhaustion due to the ongoing circumstances of the COVID-19 pandemic, has affected people all over the world (Reicher & Drury, 2021; Zerbe, 2020). Nursing and medical student burnout related to pandemic fatigue has also become more prevalent during the COVID-19 pandemic (Stacey et al., 2020; Sveinsdóttir et al., 2021; Zis et al., 2021). Because pandemic fatigue has affected the mental

and physical health of various health profession students and potentially faculty, it is a concept that has growing relevance in healthcare education. Sveinsdóttir (2021) stressed the importance of university administrators taking proactive measures to support nursing students to prevent burnout, including teaching students healthy coping skills. Proactively encouraging DPT students and faculty to prioritize mental and physical health and implementing preventative strategies that build resilience may help DPT students and faculty combat ongoing burnout and pandemic fatigue.

The COVID-19 pandemic forced DPT students and faculty to learn ways of prioritizing their own physical and mental health in absence of any formal training in strategies for building resilience. Students and faculty can build resilience by learning to utilize assistance resources provided through school or work, asking friends, family or colleagues for help, and developing a sense of community. Acknowledging the perspectives of others who may be experiencing the same struggles in different ways is also important for students and faculty to build individual resilience as DPT education evolves with the continuation of the COVID-19 pandemic. The results of this dissertation study emphasize the importance of physical and mental health as a component of resilience for students and faculty during times of stress and uncertainty.

Adaptation of Teaching and Learning Styles

Adaptation of teaching and learning styles during the shift of in-person instruction to online and hybrid methods allowed students and faculty to demonstrate resilience during COVID-19. The results of this dissertation partly agree with those of Donlan and Alpert (2018), who argue that technology can be used in various ways to create positive teaching and learning environments that meet the needs of the learner. While many participants in this dissertation preferred having face-to-face learning for lecture instruction, a few student and faculty participants preferred online learning for lecture material. However, learning and instruction of hands-on psychomotor skills through an online platform was not preferred by all DPT students and faculty.

Though faculty were ultimately successful at providing students the content they needed by recording videos or providing detailed notes or pictures, the perception of a decline in quality of instruction from students and faculty persisted during the initial months of the pandemic. Students and faculty voiced the greatest perceived decline in quality of instruction during the initial months of the pandemic when students were required to adapt to learning psychomotor skills solely online. Students reported practicing psychomotor skills on pillows, stuffed animals, or with family members or friends and were concerned they were not performing the skill correctly as it was more difficult to receive valuable feedback from classmates or the instructor through Zoom or by watching pre-recorded videos. Because the circumstances demanded use of online instruction for teaching and learning of clinical skills, DPT students and faculty adapted by practicing with items or persons they had at home and were able to reduce many of the frustrations and stresses. Plummer et al. (2021) described teaching psychomotor skills in a virtual environment during COVID-19 as an opportunity for instructors to give and students to receive different kinds of feedback during practice of hands-on skills. Building clinical reasoning and performance of psychomotor skills during the pandemic required reflection from students and instructors and adaptability as circumstances continued to change (Plummer et al., 2021). The ability to adapt to instructional changes for teaching and learning of lecture material and psychomotor skills in an online or hybrid environment created resilience in DPT students and faculty by forcing quick and large amounts of personal growth and implementation of various stress management techniques on an online platform.

Resilience developed in DPT students and faculty was also partly due to greater reliance on clinical experiences to boost student confidence in their ability to perform clinical skills. Shifting the mode of instruction from online only to hybrid for lecture and lab affected student and faculty perceptions of instruction quality, as well as student perceptions about acquisition of clinical skills. Most first-year and second-year DPT student participants emphasized their lack of

confidence in their ability to perform clinical skills learned during the initial onset of the pandemic in spring of 2020.

> I think just not being able to practice the hands-on skills for classes like that, that we really needed to was such a challenge for us going off into the clinic, because half the time, you know, we rely on all that hands on practice that we have in those labs to really feel confident whenever we go off into the clinic. (Student PP, Third-year)

Despite decreased confidence in certain skills, students utilized their clinical experiences to focus on these skills and fill any gaps in practice with the guidance of their clinical instructors. They were honest with their clinical instructors about learning many skills in an online format and lacking practice on a real person. Clinical experiences are an important part of physical therapy education and are where students solidify their performance and confidence in clinical skills and abilities. Before the pandemic, Delany et al. (2015) noted how students could build self-efficacy by using strategies of resilience during their clinical education experiences. Students who initially approach stressful situations in a clinical setting as uncontrollable and frustrating can switch to utilizing positive, resilience-based methods for recognizing and overcoming these challenges, such as viewing clinical challenges as normal and part of the process of improving hands-on skills during clinical rotations. Students implementing these strategies ultimately develop higher levels of self-awareness and confidence in their abilities (Delany et al., 2015). Many student participants in this dissertation reflected positively on their performance and experience in clinical rotations during the pandemic and were proud of their grit and resilience despite the adapted instructional methods for learning psychomotor skills.

Teaching students to approach stressful situations in the classroom and the clinic with a more positive frame of mind can be a beneficial experience for both DPT students and faculty. Despite their stress and anxieties, faculty in the present study modeled adaptability and flexibility of teaching and learning through adapting their instruction for online or hybrid use. When asked what they learned from this experience, Faculty TU commented: "I think being fluid, being flexible. Not be afraid of the unknown, which I've always been that kind of person but

now, you know probably embracing that more. Being comfortable with being uncomfortable has always been my philosophy." Several faculty participants indicated they had identified new instructional strategies that they planned to continue using because they proved to aid in student learning. The COVID-19 pandemic created opportunities for students and faculty to experiment with their creation and consumption of instructional methods for lecture material and lab skills, and therefore build resilience through this adaptability. Changes in the mode of instruction, with a perception of decline in quality, forced many DPT students and faculty to rely on clinical experiences to regain confidence in student performance of clinical skills. Adaptation of teaching and learning styles to these changes ultimately contributed to the development of resilience in DPT students and faculty during the first year of the COVID-19 pandemic.

Enhanced Non-Academic Expectations between Students and Faculty

Results of this study are in agreement with previous literature documenting how the COVID-19 pandemic required immediate and rapid changes in instructional methods, assessment techniques, and use of new technologies (Brammer & Clark, 2020).The sudden changes in delivery of lecture and lab content in reaction to the initial shut down of campus and the later return to campus but with smaller lab sizes were part of the necessary changes implemented to reduce risk of student and faculty exposure to COVID-19. Resilience theory incorporates students' and faculty members' abilities to adapt to these rapid shifts in pedagogy by intensifying certain expectations between students and faculty.

Prior to the pandemic, open communication between students and faculty was expected to avoid frustrations and provide clarity in coursework. During the initial chaos of the shutdown caused by COVID-19, clear communication was expected at magnified levels. This study's results agree with those of Hyland et al. (2021) where students voiced a preference for clear and frequent communication from faculty and required recognition and empathy for students' physical, mental, and financial concerns.

> PT school sucks. It sucks even more when it's online. And it sucks even most when you don't have professors who are understanding, who are willing to give you grace, who are willing to, like, provide empathy to you during a terrible time that everyone is going through. (Student TT, Second-year)

Student participants in this dissertation contacted faculty for more than course content questions, and faculty more frequently requested student feedback and status updates as stress and anxieties surrounding lecture and lab instruction were constantly changing. Actual frequency of communication varied by individual students and faculty. Some students emailed faculty more often or requested Zoom meetings for clarity of coursework or to discuss their struggles outside of school, while others relied on their classmates to contact faculty about coursework.

In order to adapt to the new levels of stress and different modes of instruction, and in turn build resilience, there were greater expectations for clear and timely communication. Faculty tried to be more understanding and patient at the start of the pandemic when assignments were missed or students were late for online class. However, faculty did have an expectation that students would communicate their situations. Second-year student YY recognized the faculty's attempts to lessen academic related stress during the first few months of the pandemic; "I think they were more understanding or lenient up front when it first started and then gradually became less so, as time went on." Increased levels of open and honest communication addressing the novelty of the pandemic and its impact on how faculty delivered lecture and lab content, as well as how students were able to process and learn the material and hands-on skills, was a heightened expectation that contributed to increased DPT student and faculty resilience.

Though DPT education is expected to be rigorous, life circumstances during the pandemic often required heightened empathy, compassion, and grace. Quarantining for periods of time due to COVID-19 exposure or sickness and more frequent doctor visits to address the health concerns of family or loved ones became stressors that could not be controlled by

80

students or faculty, requiring patience and understanding from everyone. Technical difficulties also often arose during instructional activities in lecture or lab, which created more frustrations. Low quality internet and distractions in the home environment compounded student and faculty frustrations and stress. Combined, these factors created the need for enhanced non-academic expectations of empathy and grace. Recent research notes that faculty should not assume students have access to secure and reliable internet, a home environment conducive to e-learning and productivity, and financial resources that would enhance quality of life and reduce stress (Antill Keener et al., 2021). Though amplified expectations of empathy were noted by both DPT faculty and students, it appears that students had higher expectations of receiving empathy, compassion, and grace from faculty than faculty did from students. Although they were also facing times of uncertainty, most faculty made considerable efforts to provide compassion and grace for students who were struggling, and asked students to do the same depending on their individual situations. To mitigate pandemic related stress, frustration, and anxiety required communication, empathy, and grace which in turn were essential strategies for building student and faculty resilience.

Implications for PT Education

The results of this dissertation emphasize the need to incorporate strategies for resilience into DPT curriculum proactively by prioritizing physical and mental health, adapting teaching and learning styles, and making certain non-academic expectations between students and faculty are clear. An individual's resilience is multifactorial, and can include what they think, how they engage with their emotions, and actions they take depending on the circumstances. DPT students and faculty can learn to prioritize their mental and physical health during the challenges they encounter with the continuing pandemic through workshops or seminars through the university's counseling center. Students and faculty can also encourage participation and accountability for exercising regularly for physical and mental health benefits. With the amount of knowledge and skills related to use of online teaching platforms, students

81

and faculty can potentially adapt more easily to technology issues and use techniques learned during the pandemic to improve their teaching and learning going forward. Finally, students and faculty of DPT programs should make non-academic expectations related to communication and empathy known at the beginning of a course in order to limit potential frustrations and stress should an unexpected event occur, such as illness, family emergency, or weather-related closure of school.

Though it is unlikely that the United States will experience another shutdown of all universities for pandemic-related reasons, it is possible to investigate the usefulness and efficacy of strategies students and faculty utilized during lockdown or quarantine as work-from-home strategies or for instances of severe weather. Antill Keener et al. (2021) and Ng et al. (2021) suggested having a designated home workspace with specific times allocated for studying, physical activities, and other ways to cope with stress to contribute to higher quality of life for faculty and students should switching to online instruction happen again. Future research focused on the most effective coping strategies used by students and faculty in a DPT program could guide future students and faculty towards the best stress management strategies to build mental and emotional resilience. Though the literature does not address specifically how student-faculty interactions and expectations affect student stress levels, the results of this dissertation study found that students and faculty shared components of demonstrating resilience during the first 18 months of COVID-19. Acknowledging resilience as an attribute shared by DPT students and faculty and developing measures to track and build components of resilience in the context of DPT education is important beyond the circumstances of the COVID-19 pandemic.

Future Directions

This grounded theory dissertation explored the impact of COVID-19 on the experiences of students and faculty in a DPT program by examining how their shared experiences affected relationships, expectations, and interactions. This study identified a grounded theory of

82

resilience based on major, interconnected categories of Prioritizing Mental and Physical Health, Adaptation of Teaching and Learning Styles, and Enhancing Non-Academic Expectations Between Students and Faculty. A major finding was that students and faculty demonstrated shared aspects of resilience, outlined in the minor categories of the findings. While other research has focused on resilience in students or faculty, this dissertation described shared characteristics of resilience in both students and faculty and opens the door to further investigation of methods for identifying and measuring resilience. In addition, the results suggest the need to identify and study methods for building and supporting resilience in both students and faculty.

Several questions from this study warrant future research. While some studies have considered the importance of resilience in healthcare education programs (Aguilar, 2018, Brewer et. al, 2021; Burdick, 2015), a method for measuring resilience quantitatively for healthcare students and faculty has not been determined. Measuring shared aspects of student and faculty resilience in a healthcare education setting may be useful for educators and students to track resilience over time. Understanding and tracking shared resilience may lead to greater successes and more positive experiences for healthcare students as they progress from classroom to clinic, and as faculty balance teaching and clinical practice. While there are several outcome measures that can quantify resilience in adults including the Brief Resilience Scale (Smith et al., 2008), the Resilience Scale for Adults (Friborg et al., 2003), and the Academic Resilience Scale (Cassidy, 2016), currently there are no scales that can quantitatively define or measure shared resilience students and faculty in healthcare education.

Additionally, while resilience in students and faculty in healthcare programs is generally considered to be important to their success, little research has been published identifying strategies for building resilience into the curriculum or identifying how existing support systems for students and faculty can help support or maintain resilience. As resilience is linked to negative and positive indicators of mental health, there is a significant need for understanding

83

student and faculty resilience through future research and implementation of resilience

enhancement programs in healthcare education (Davydov et al., 2010; Hu et al., 2015). Further

research can attempt to identify specific stressors, provide a mechanism for measuring

resilience in both students and faculty related to specific types of challenges, and determine if it

is possible to incorporate methods for building and maintaining resilience in both groups through

existing or new programs.

Limitations

There are several limitations to this study. One limitation is all participants were students

and faculty from a single university in Texas. Data were gathered from both Dallas and Houston

campuses of TWU's DPT program. Students and faculty from other DPT programs may have

had different experiences that were not reflected in the results of this study. Another limitation

was the small sample size. Despite extensive recruitment efforts from the primary researcher

and student researchers, only one student focus group from the Houston campus was included

in the data, and more faculty participants were interviewed from the Houston campus. Inability

to include equal numbers of students and faculty from both campuses could have affected these

results. Faculty participants also all taught in both lecture and lab instruction, which may have

affected the results differently compared to faculty who only taught lecture or lab, not both.

Conclusion

The COVID-19 pandemic created an academic environment that impacted DPT students

and faculty experiences in many ways. The grounded theory of this study illustrates how

students and faculty demonstrated shared aspects of resilience during the first 18 months of the

pandemic. Major components of resilience in students and faculty during COVID-19 included

Prioritizing Physical and Mental Health, Adaptation of Teaching and Learning Styles, and

Enhancing Non-academic Expectations Between Students and Faculty. This study

demonstrates the importance of recognizing shared aspects of resilience in DPT students and

faculty and provides insight on how COVID-19 impacted the experiences of DPT students and

faculty.

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APPENDIX A

TWU IRB APPROVAL LETTER

Study History

Submission Type	Review Type	Decision
Initial	Expedited	Approved
Closure	Unassigned	

Key Study Contacts

Member	Role	Contact
Mark Weber	Co-Principal Investigator	MWeber3@twu.edu
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APPENDIX B

PARTICIPANT MATRIX
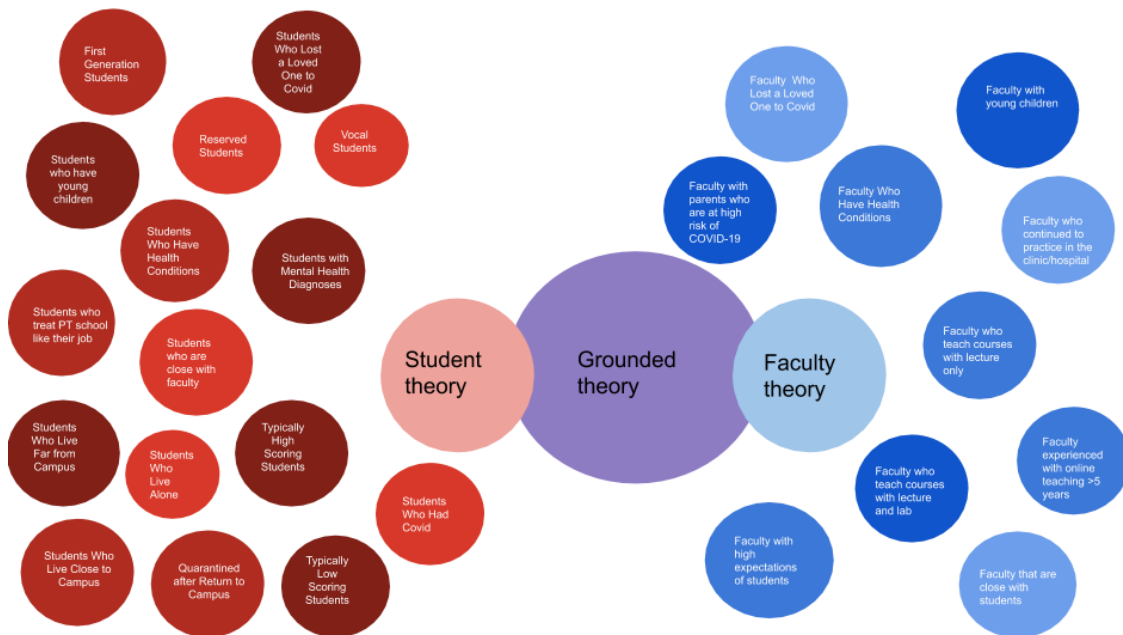
APPENDIX C

RECRUITMENT EMAIL FOR STUDENTS

Dear <u>Students</u>,

We are conducting a qualitative study on the impact of COVID-19 on the student-faculty relationships, interactions, and expectations in a DPT program. We are creating several focus groups of three to five students within each cohort (Grad 2 and 3s), and we think you would be a good candidate for one of our focus groups. We are asking you to volunteer about 1 hour of your time to participate in a focus group moderated by some of your peers via Zoom. All participants selected will read and sign the consent to participate document and be given the opportunity to ask questions related to the study.

If you are interested, please email Lara Davis at <u>ldavis27@twu.edu</u> for more information.

Sincerely,

Talia Pena, SPT and Rebekah Robertson, SPT

APPENDIX D

RECRUITMENT EMAIL FOR FACULTY

Dear <u>Faculty</u>,

I am conducting a qualitative study on the impact of COVID-19 on the student-faculty

relationships, interactions, and expectations in a DPT program. I think you would be a good

candidate for providing your perspective. We are asking you to volunteer about 1 hour of your

time to participate in an interview on Zoom with the primary researcher. All participants selected

will read and sign the consent to participate document and be given the opportunity to ask

questions related to the study.

If you are interested, please email me at <u>ldavis27@twu.edu</u> for more information.

Sincerely,

Lara Davis, PT, DPT

<u>Ldavis27@twu.edu</u>

APPENDIX E

STUDENT PARTICIPANT MATRIX FORM

Student:

Age: _____

Cohort: Grad 2 or Grad 3

Gender: M or F

1. Do you live with a spouse/significant other? Y / N

2. Do you have children? Y / N

    a. If so, how many and how old are they? _____

3. Do you live alone?   Y / N

4. Do you live with roommates? Y / N

    a. If so, how many? _____

5. Is your commute to campus longer than 30 minutes? Y / N

    a. If yes, how long is your commute? _____

6. Is your commute to campus shorter than 30 minutes? Y / N

    a. If yes, how long is your commute? _____

7. Do you consider yourself to be a vocal student?   Y / N

8. Do you consider yourself to be a reserved student?   Y / N

9. Are you a first-generation college student? Y / N

10. Do you have a close relationship with or receive mentorship from a DPT faculty

    member? Y / N

11. Do you have any health conditions which puts you in a higher risk category for COVID-

    19 (including but not limited to: diabetes, obesity, hypertension, hyperlipidemia, heart

    disease, liver disease, asthma, cystic fibrosis, COPD, or a history of smoking)? Y / N

12. Do you have a family member with any health conditions which put them in a higher risk

    category for COVID-19 (including but not limited to: diabetes, obesity, hypertension,

    hyperlipidemia, heart disease, liver disease, asthma, cystic fibrosis, COPD, or a history

    of smoking)? Y / N

13. Have you lost a loved one to COVID-19?   Y / N

14. Were you quarantined at any point after the DPT program had returned to campus (July

    2020)? Y / N

15. Did you have stable internet connection at home during periods of fully online learning?

    Y / N

16. Did you have financial concerns caused or exacerbated by the COVID-19 pandemic? Y

    / N

17. Are you currently employed? Y / N

18. Did any clinical site cancel on you due to COVID-19?   Y / N

19. Have you had any mental health issues develop or worsen after the onset of COVID-19?

    Y / N

APPENDIX F

FACULTY PARTICIPANT MATRIX FORM

Faculty:

Age: _____

Years of Teaching:

Gender: M or F

What content do you teach at TWU?

_____

Is/Are your courses lecture or lab based?

☐ Lecture

☐ Lab

☐ Both

1. Do you live with a spouse/significant other? Y / N

2. Do you have children? Y / N

     1. If so, how many and how old are they? _____

3. Do you live alone? Y / N

4. Do you have any health conditions which puts you in a higher risk category for COVID-19 (including but not limited to: diabetes, obesity, hypertension, hyperlipidemia, heart disease, liver disease, asthma, cystic fibrosis, COPD, or a history of smoking)? Y / N

5. Do you have a family member with any health conditions which put them in a higher risk category for COVID-19 (including but not limited to: diabetes, obesity, hypertension, hyperlipidemia, heart disease, liver disease, asthma, cystic fibrosis, COPD, or a history of smoking)? Y / N

6. Have you lost a loved one to COVID-19? Y / N

7. Were you quarantined at any point after the DPT program had returned to campus (July 2020)? Y / N

8. Do you have a close relationship with any students as a faculty member? Y / N

9. Did you have high expectations of students during the pandemic? Y / N

APPENDIX G

SEMI-STRUCTURED INTERVIEW GUIDE FOR STUDENTS

Interview Guide- Student

1. Tell me about your experience as a PT student during COVID-19.

   a. Describe your experience over time.

   b. How does your experience as a PT student over the past year compare to before the beginning of the pandemic?

   c. How do you think hybrid learning fits into your experience?

2. Tell me about your relationships with faculty after COVID-19.

   a. Are these different from before the onset of COVID-19? If yes, how so?

3. Tell me about your interactions with faculty members after the onset of COVID-19.

   a. Are these different from before the onset of COVID-19? If yes, how so?

   b. Describe what communication between you and your faculty was like during COVID-19.

4. Tell me about your expectations of faculty members after the onset of COVID-19.

   a. Are these different from before the onset of COVID-19? If yes, how so?

5. Discuss what you have learned from this experience.

6. Is there anything you would like to add that I did not ask about?

APPENDIX H

SEMI-STRUCTURED INTERVIEW GUIDE FOR FACULTY

Interview Guide- Faculty

1. Tell me about your experience as PT faculty during COVID-19.

    a. Describe your experience over time.

    b. How does your experience as PT faculty over the past year compare to before the beginning of the pandemic?

    c. How do you think hybrid learning fits into your experience?

7. Tell me about your relationships with students after COVID-19.

    a. Are these different from before the onset of COVID-19? If yes, how so?

8. Tell me about your interactions with students after the onset of COVID-19.

    a. Are these different from before the onset of COVID-19? If yes, how so?

    b. Describe what communication between you and your students was like during COVID-19.

9. Tell me about your expectations of students after the onset of COVID-19.

    a. Are these different from before the onset of COVID-19? If yes, how so?

10. Discuss what you have learned from this experience.

11. Is there anything you would like to add that I did not ask about?

APPENDIX I

EXPANDED CODING TABLE WITH PARTICIPANT QUOTES

Initial Code	Faculty (n)	Students (n)	Major category	Minor category	Theoretical code
Stress Faculty GH: So maybe a little bit more compassion, a little bit more understanding, and look more embracing of the things that they have to deal with in terms of just some of the difficulties and to navigate. Whether it's food, whether it's financial insecurity, whether it's just mental stress of just being isolated. That made me a lot more sensitive and a lot more compassionate to what they have to deal with. Student RR (2nd-year): I felt like we were always behind due to technical problems, and so classes were often rushed and stressful compared to what they used to be.	7	20	**Prioritize mental and physical health** Student FF (3rd-year) : Prioritizing your mental health over school was something I really needed to learn how to do, and I think this actually helped a lot more than I'd like to admit.	**Finding positives through community** Student BB (3rd-year): Yeah with that, like, I think we got closer with them and more comfortable with them, because we were all like on a team trying to just get through it together.	**Resilience in students and faculty during COVID-19** Faculty CD: I've learned that we're resilient, we're gritty, we can pivot, we can, we can be successful, we can be creative.
Anxiety Faculty PQ: I think when I could stay calm and explain to the students, "This is what I'm doing. This is how we're going to do it. Even if this might not be the exact same as what it was before, I'm also going to be your instructor in orthopedics, so I can also thread it back in through there." I think it kind of took a little anxiety away at least from that part, which has kind of helped with that sudden change in the learning Student DD (3rd-year): And you know, like, I went through a period of time of just like intense anxiety and like mental health issues, just from the pandemic and. Um. Now, like starting, like, over the summer, like, I started getting better.	1	6		**Understanding and managing stress** Faculty GH: So maybe a little bit more compassion, a little bit more understanding, and look more embracing of the things that they have to deal with in terms of just some of the difficulties and to navigate. Whether it's food, whether it's financial insecurity, whether it's just mental stress of just being isolated. That made me a lot more sensitive and a lot more compassionate to what they have to deal with.	

Initial Code	Faculty (n)	Students (n)	Major category	Minor category	Theoretical code
Frustration Faculty RS: I think there may have been some frustrations, because it was so different from what their expectations were. Student MM (3rd-year): So I felt like the labs were really challenging for me, because I was like, we were using like Teddy bears and I know people were stuffing towels and jackets and stuff and it just wasn't realistic and then, you know, again, the world was like going crazy so that was another additional stressor so, it was, it was challenging and kind of frustrating at times.	3	8			
Fear Faculty EF: I was also having to teach my kids and be at home and also just navigate all of the fear and the unknowns that the pandemic brought. Student JJ: the fear of, like, not only giving it to our family members or significant others or roommates-- whoever we were living without a time-- but the fear of getting in ourselves. And then having to end clinical. And then are we going to graduate?	2	6			
Unknown/uncertainty Faculty EF: So I felt like, I felt like it was a very stressful time, I felt like it was very, like, a lot of unknowns which.... I don't know the faculty handled, you know, we are generally in control and have a plan and very organized. So I think that that's hard on a lot of faculty. I also think that's hard on students and I think their fears and stress and whatever also kind of gets taken on as our burden as well. Student DD (3rd-year): Like at the beginning, like I kind of started saying, like, it was super stressful transitioning to this, like, unknown and, like, scary-- you know-- way to do school and I said I'm not an online learner at all.	2	4			
Transition Faculty CD: I probably was doing more mental health checks on. I can think of a couple, specifically	2	6			

Initial Code	Faculty (n)	Students (n)	Major category	Minor category	Theoretical code
in the summer that just did not do well with the transition to online learning. And mostly it wasn't about online learning, it was mostly about being stuck in their apartment. Student DD (3rd-year): Like at the beginning, like I kind of started saying, like, it was super stressful transitioning to this, like, unknown and, like, scary-- you know-- way to do school and I said I'm not an online learner at all.					
Finding the Positive Faculty TU: I think hybrid learning was a positive experience for me, or hybrid teaching. From a student's perspective, whenever I have informally polled them, they have said it was a positive experience, overall. They still would love that interaction but some of the things that I teach that are more discussion based. Student XX (2nd-year): I think it definitely did make me-- at least I can say, like, emotionally and mentally stronger. I don't know if I'd want to go through it again, but you know? It was-- that was definitely a positive that came out of it.	3	5			
"Everyone is in this together" Faculty EF: We all had stressors, and so I think there was this emotional exchange of, you know, trying to be compassionate and empathetic and just having that human piece of knowing that, yeah we... it kind of stunk for everybody, right? And we're all in this together, and we want to be supportive. Student RR (2nd year): We are adaptable, and it's okay if, like, obviously this experience didn't look like what we thought it would. And facing adversity, you just find a way to make things work, even if it's not perfect. And I think our class was a great example of, like, rolling with the punches and rising above that and really supporting each other and, like, really finding out how best to succeed as a class.	3	8			
"Checking in" Faculty CD: I feel like since COVID there might	1	6			

Initial Code	Faculty (n)	Students (n)	Major category	Minor category	Theoretical code
have been a few more students that I felt like I needed to pester a little bit more. That I probably was doing more mental health checks on. Student BB (3rd-year): And so you don't know who-- who's struggling, who's not, and so making that intentional decision to check in on your classmates.					
Survival/ crisis learning Faculty PQ: This past year we've been in crisis learning. It hasn't been hybrid, it hasn't been really in person teaching. Everything that has happened, has been crisis learning. Student MM (3rd-year): And as far as like in PT school in general, which I don't think a lot of people think about it whenever you get into PT school, it's s just like trying to survive, but they don't really talk about like the mental aspect of it and making sure you're taking care of yourself so.	2	8	**Adaptation of teaching and learning styles** Faculty PQ: I learned that the students truly can adjust their learning style. Yes, they have their comfortable learning style, but that doesn't necessarily mean that that's the best in every situation, and that they can't adapt too. They just need to know how to do it so kind of working with them on that.	**Changes in mode and perceived quality of instruction** Student AZ (2nd-year): I think it definitely affects how we do in the clinics because you're trying to adjust to doing all of these things on an actual person and on different body types and after not really learning it very well in the first place.	
Home environment Faculty TU: The Zoom fatigue was real as we moved into the pandemic, and you know just being here in this space that I'm in. Which is wonderful, and I'm very thankful that I have a home office that I can do all this here. But at the same time, it's like I want to get away from this. You know, like that feeling like, when is this class or this meeting is over and I can just leave this room, you know kind of feeling. Which, you know you then feel guilty. Student YY (2nd-year): The more didactic portion of it was kind of nice being from home; with it being asynchronous, I could do it on my own time, but as far as like, hands-on skills and social interaction, that was what made it hard during COVID.	5	7		**Using feedback during clinical experiences** Faculty WX: Even though the students had less confidence, clinical instructors didn't notice it... they used it as an opportunity to work on those skills in the clinic, which is why we have Clin Ed.	
Clinicals/ clinical skills Faculty AB: very hands on lab-based course, um, into a completely virtual setup so definitely required a lot of very quick creativity. And in order to make	4	15			

Initial Code	Faculty (n)	Students (n)	Major category	Minor category	Theoretical code
sure that we still got the quality of the course and the material and the skill appropriately imparted to students, so they can you know would still be successful in clinical rotations etc, but in a completely virtual environment with very little time to, to brainstorm and prepare and determined best practices Student AA (3rd-year): It not only shaped, like, what clinical sites we ended up at-- because there are only select few that were taking students--but then it also changed our experience while we were in the clinic. For better for worse. I think it depends on probably what site you were at.					
Feedback Faculty CD: I miss that immediate feedback from teaching in person that I was very, very used to. Student ZZ (2nd-year): Yeah I feel like with those Zoom practicals we had, feedback wasn't really, either it wasn't there or just wasn't useful because, like some of the feedback I got it was, OK, let's, reason why you saw it like that was because the angle you're at the laptop, if you're there in person you'd see like what I was doing was right, so not having that kind of feedback definitely carried over clinical like, especially the first time I picked up my goniometer, I was like well here we go didn't really get much practice with this but let's do that type of thing.	2	6			
"Missing out" Faculty CD: You know the one thing I miss is in a classroom someone will ask a question and another question will feed off of that. And that is a lot less likely in a Zoom call. Student PP (3rd-year): Kind of like for example, whenever I missed out on my third rotation that was supposed to be neuro and I really wasn't going to have a single neuro rotation before internship.	2	4			
Value Faculty EF: I think that I learned the value of	3	2			

Initial Code	Faculty (n)	Students (n)	Major category	Minor category	Theoretical code
stopping and appreciating life and breathing Student QQ (2nd-year): So I think COVID just helped me just really understand like, appreciate the value of the people in my life.					
Communication Faculty GH: I had a chance to really augment my virtual communications with the face-to-face communications. But I think the combination of the two allowed me to communicate with them actually more frequently in the virtual platform Student ZZ (2nd-year): Yeah I think communication with them was a little bit harder over Zoom, like if you don't understand something in class it's easy to stay after and talk to your professor real quick but on zoom it's a little more difficult, if you have technological issues and then just having to try to talk, while there's other people also trying to communicate through Zoom.	9	10	**Enhanced non-academic expectations between students and faculty** Student OO (3rd-year): I think [the faculty's] open communication did really help manage our expectations, especially because a lot of them were like, you know, we don't know what we're doing either. So just, like, bear with us, like, let us know if there's anything like we can do.	**Clear and open communication** Faculty EF: So I felt like there was a lot of overcommunication, but I felt also from my end I was trying to be really empathetic, really sensitive to the stress that they were under and trying to relay, you know, that compassion and support.	
Connection Faculty JK: But challenging wise, I do think that like, you know, the the personal connections are, yeah for example, like it took me more like triple of the time for me to remember the new student names and faces. Student VV (2nd-year): That like [Pause] my expectation-- it wasn't for them to just sit down and have a one-on-one with me and talk about my life-- but, like, if would have still been nice to hear. Or just connect them as humans, you know? Or, like, be able to connect with our class as a whole?	2	5		**Empathy, grace, and compassion** Student CC (3rd-year): We're giving them grace and then they were also giving us grace back.	
Grace Faculty TU: They get it and they appreciate the effort. And I think it's because all of us were giving more grace and compassion and empathy I think. Student RR (2nd-year): Um and I think that was one of the frustrating things of, like, you expect us to be on top of our work, even through this pandemic; we expect you to be on top of yours and, like, have things done on time. And I get it, like, there's grace	2	8			

Initial Code	Faculty (n)	Students (n)	Major category	Minor category	Theoretical code
for all of that to a certain degree. But, like, if you're going to hold us to a standard, we have the right to hold you to the same standard.					
Compassion/empathy Faculty TU: Empathy and compassion are probably two things that I am more in tune with and being willing to give or feel or be when it comes to expectations Student TT (2nd-year): PT school sucks. It sucks even more when it's online. And it sucks even most when you don't have professors who are understanding, who are willing to give you grace, who are willing to, like, provide empathy to you during a terrible time that everyone is going through.	3	7			
Understanding Faculty RS: Things that I, that I would not have tolerated in the past, I think I made more of an effort to be more understanding of their current situation. Student YY (2nd-year): I think they were more understanding or lenient up front when it first started and then gradually became less so, as time went on.	5	10			
Patience Faculty GH: I'm maybe more patient with people overall. Student OO (3rd-year): I think I really just learned to be patient and flexible, just because like, we didn't know what was gonna happen.	1	2			
Resilient/resiliency Faculty PQ: I've learned that faculty and students are more resilient than we give ourselves credit for Student PP (3rd-year): I think one of the most important things that I've learned throughout this whole pandemic, you know, throughout spring 2020, Summer 2020, all 2020 leading up to now is that, you know, as, as much as we're really brought up throughout the PT community and our PT school journey, to be gritty and to be resilient, I think that	6	2			

Initial Code	Faculty (n)	Students (n)	Major category	Minor category	Theoretical code
ultimately, they're gonna end up being things that you just can't change them, and you have no control over.					