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ORIGINAL RESEARCH REPORTS

Faculty Perceptions of Health Professional Students' Hybrid-Online Learning Strategies: A Multi-Center Qualitative Study

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Abstract

Purpose: The COVID-19 pandemic accelerated the utilization of hybrid-online and fully-online instruction in health professional education. Physical (PT) and occupational therapy (OT) programs have become increasingly reliant upon this mode of instruction. Therefore, it is important to understand advising strategies for this educational environment. Faculty advisors may endorse specific learning strategies over others. However, advising strategies of faculty are not well represented in the scientific literature.

Methods: A qualitative phenomenological design used a six-item, open-ended questionnaire to purposefully survey faculty members teaching and advising students in hybrid-online PT and OT graduate programs during COVID-19. Dedoose® v.9.4 qualitative software (Los Angeles, CA; 2021) was used to perform coding and thematic analysis. Three investigators performed data analysis to reach consensus on the organization of emerging codes and themes.

Results: A sample of N = 36 participants was collected from three states: Florida 14 (38.9%); Texas 12 (33.3%); California 10 (27.8%). Total N (%) of PT and OT faculty enrolled were 26 (72%) and 10 (28%), respectively. Years teaching in hybrid-online programs N (%) was: 1–4 years 20 (55.6%); 5–9 years 8 (22.2%); 10–14 years 5 (13.9%); 15+ years 4 (11.1%). Thematic analysis revealed three major themes: Self-regulated Behaviors, Student Engagement, and Studying Strategies. Self-regulated Behaviors and Student Engagement were most prevalent among participant narratives. Coded responses such as “‘time management’, ‘preparedness’, ‘chunking study time’, ‘daily engagement with learning material’, ‘work/life balance’, and ‘peer-to-peer teaching’” were positively associated with perceived student success. Conversely, “‘procrastination/cramming’, ‘poor work ethic’, ‘lack of engagement’, ‘lack of preparedness’, and ‘rote memorization’” were negatively associated with perceived student success.

Discussion: This study identified faculty perceptions of student strategies for success in hybrid-online health professional learning. The self-regulated behaviors of time management, preparedness, work/life balance, and the engagement behaviors of daily engagement with course materials, content application, class participation, and peer collaboration strongly emerged. These findings may help guide novice faculty advisors as hybrid-online instruction becomes more frequently leveraged across health professional education programs.

Keywords: Learning strategies, Student advising, Health professional education, Hybrid-online learning, Faculty perceptions

1. Introduction

The COVID-19 pandemic highlighted the shortage of, and increased demand for, numerous healthcare providers. [1] Additionally, the pandemic underscored how swiftly an event of

this magnitude can reshape the landscape of health professional education programs. [2–4] Early in 2020, government mandates forced many campuses to temporarily shut down in-person operations. [2,4–7] Thus, online instructional methods were widely thrust into action to maintain seamless

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course delivery. [4–7] During this transition, hybrid-online and fully-online curricula may have been better equipped to handle rapid changes to teaching methods. [4] As such, traditional campus-based programs, often reliant upon face-to-face classes, may have been more greatly impacted by COVID-19. [4,5] Yet, long after the pandemic shut-downs and restrictions were eased health professional programs see continued reliance on hybrid-online instruction. As a result, there remain numerous gaps in our knowledge of hybrid-online learning, for health professional students and faculty alike. [5–8].

Prior to COVID-19, many health professional programs had already been utilizing hybrid-online or fully-online curricular models, especially among physical therapist (PT) and occupational therapist (OT) education. [5] Approximately 75% of PT programs use some form of hybrid-online component of learning, [9] and 90% of OT education programs use a form of hybrid-online curriculum. [10] As the number of PT and OT programs using online learning components grows to meet the health needs of society, so too, does the financial implications for students and institutions. [11–14] The cost associated with attaining a graduate-level health professional education in the US has risen dramatically in recent decades. [13–17] The financial burden of student loans has garnered significant attention as student debt exploded past \$1.75 trillion in 2022. [18] According to 2020 aggregate data from the American Physical Therapy Association, entry-level PT graduates carry an average student loan debt of over \$115,000. [13–17] As a result, student financial stress has been shown to impacting learning. [14] Furthermore, a shifting learning environment may predispose some students to academic difficulty and potentially increase the cost of completing an education program.

Appropriately, to address academic success, a major topic of investigation in this learning environment involves understanding student learning and study strategies. [19–21] More specifically, learning strategies predictive of academic success and/or difficulty have been highly studied in professional and medical education. [20–34] Yet, much of the evidence has come from face-to-face education within medicine, nursing, and pharmacy programs. Hybrid- or fully-online entry-level PT and OT programs are underrepresented in the body of literature. [20,21,30] Emerging evidence has demonstrated that some student learning strategies may be more strongly related to, or predictive of, academic success for this educational environment. [21,30–34] There are a vast number of learning and

study strategies to which a health professional student may subscribe to ensure success in their coursework. [35,36] Findings from prior inquiries demonstrate self-regulated, motivational, and meta-cognitive behaviors are most closely associated with student success. [5,19–21] However, much less is understood about student learning strategies from the viewpoint of faculty advising in this blossoming educational setting.

Faculty advisors of PT and OT programs may espouse certain learning strategies. [18] Thus, advising students to deploy specific strategies over others to potentiate success in their coursework. Yet, it is not clear if faculty in hybrid-online programs endorse or prescribe strategies that are consistent with recent evidence. [5,19] An understanding of how faculty of hybrid- or fully-online programs advise their students has not been represented in the scientific literature. Given the significant financial imperatives, it is increasingly important to understand how faculty of hybrid-online programs advise students to avoid difficulty and engender success. Therefore, the purpose of this study was to explore and describe faculty perceptions of the most and least effective learning strategies when advising students in hybrid-online PT and OT education.

2. Methods

2.1. Overview

This study utilized a multi-center qualitative phenomenological design to explore how faculty of hybrid-online programs perceive student learning strategies. A geographically diverse sample was collected from graduate entry-level PT and OT programs in three states across the United States. A qualitative approach allowed investigators to describe the common themes/meanings of learning strategies from rich descriptions and testimonies of PT and OT faculty engaged in hybrid-online or fully-online education.

2.2. Setting and participants

Subjects included in this study met the following criteria at the time of recruitment: 1. Must be faculty teaching full-time in a “hybrid-online” or online program for entry-level PT or OT, and 2. Have a minimum of one year teaching experience in said program. “Hybrid-online” was defined as the PT or OT curriculum having no less than 51% of course delivery through an online learning management system, either synchronously or asynchronously. [37] Participants were excluded from the study if they declined

consent to participate, were in a position of academic leadership (Dean, Chair, or Program director), or failed to meet the specified inclusion criteria.

2.3. Procedures

Faculty were surveyed using an open-ended questionnaire during the Fall 2021 trimester. An anonymous qualitative open-ended survey was distributed electronically to consenting individuals who met the inclusion criteria. The survey was provided through a secured online platform and was open for a total of four weeks. Participants completed the questionnaire at their leisure during the period of enrollment. A copy of the six-item questionnaire can be found in Appendix A. Data was collected anonymously and member-checking was performed across participant responses prior to entry for data analysis.

2.4. Data analysis

Qualitative coding and thematic analysis were performed using Dedoose v.9.0. [38] First, the investigators individually read and performed line-by-line excerpting from the original transcriptions and survey responses to generate clusters of meaning by grouping key terms and phrases. Then, each investigator independently performed focused coding of the rich descriptions from the data set. Next, all investigators met and compiled their codes/themes for intercoder agreement and reliability. Investigators then performed a collective categorization of data using triangulation and interrater reliability to ensure agreement on the codes and emerging themes of responses. Finally, the investigators met to review, sort, and organize themes, root codes, and parent/child codes from all survey responses to reach consensus on thematic coding. Descriptive quantitative statistics on participant characteristics were performed using SPSS v.27. [39]

3. Results

3.1. Quantitative description

A total of $N = 36$ participants were enrolled in this study and qualified for analysis. This study enrolled N (%) faculty from hybrid- or fully-online PT and OT programs, 26 (72%) and 10 (28%), respectively. The mean (SD) age for faculty participants was 47.0 (4.0) years, with a range of 30–74 years (mode: 45 years). This sample consisted of 72.2% Caucasian, 13.9% Hispanic/Latino, 2.8% African-American, and 11.1% “prefer not to say”. Three states were represented in

the sample collected, including N (%): Florida 14 (38.9%); Texas 12 (33.3%); California 10 (27.8%). The N (%) number of years teaching in higher education for each participant was: 1–4 years 11 (30.6%); 5–9 years 9 (25%); 10–14 years 7 (19.4%); 15+ years 10 (27.8%). The N (%) number of years teaching in hybrid- or fully-online programs for each participant was: 0–4 years 20 (55.6%); 5–9 years 8 (22.2%); 10–14 years 5 (13.9%); 15+ years 4 (11.1%).

3.2. Qualitative description

Qualitative coding and thematic analysis revealed three major themes: Self-regulated behaviors, Student engagement, and Studying strategies. An organization of themes and root codes are represented in Table 1. Self-regulated behaviors and Student engagement were the most prevalent across participant narratives. Responses such as time management, preparedness, “chunking study time”, “daily engagement with learning material”, work/life balance, application to practice, and “peer-to-peer teaching” were positively associated with faculty perceptions of student success. Conversely, “procrastination”, poor work ethic, lack of daily engagement, lack of preparedness for class/participation in class, and “rote memorization” were negatively representative of student success. Furthermore, numerous participants felt that using flash cards, or “dual-coding” memory exercises, were somewhat more primitive strategies and less likely to be successful in this environment. A complete breakdown of the organization of themes, root/parent codes, and child codes can be found in Table 1.

When asked by investigators to “describe the types of learning and study strategies you have observed in the most successful students” for hybrid-online learning, Subject #2 replied, “Students who do best are self-disciplined, pace themselves, organized and touch all courses regularly.” Subject #14 stated, “student who frequently engagement with the material online.” “Hybrid courses require better time management and self-direction.” Similarly, subject #18 replied, “They are proactive; study ahead of time; take meticulous notes; constantly review material; participate in online synchronous sessions. they learn how to manage their time effectively.” Subject #13 stated, “successful students take ownership of learning and don’t allow the environment to adversely affect the outcomes.”

In response to the item “In your faculty advising to students, which learning and study strategies do you typically emphasize for students to be the most

Table 1. Theme and root code organization.

Theme	Root/Parent Codes	Child Codes
Self-Regulated Behaviors	Goal-oriented Behaviors Motivation Self-direction Stress Management Time Management	Concentration/Attention Persistence Work-life Balance Organization Preparedness Scheduling Prioritization
Student Engagement	Class Participation Practical Application/Clinical Reasoning	Communication Asking Questions Critical Thinking Practicing Skills
Study Strategies	Academic Adaptability Daily Engagement Knowledge Translation Multi-sensory/VARK ^a	Cramming Concept Mapping Dual-Coding Peer-to-peer Teaching Reflective practice Comprehension Self-testing Collaboration Memorization Identifying Key Concepts Seeking Support Resources Making Connections

^a VARK: Visual, Auditory, Reading, Kinesthetic.

successful in your courses?”, subject #9: “Time management and motivation. Students with strong work ethic who follow a schedule closely and test their knowledge ahead of exams.” Similarly, subject #8 stated, “Be an active participant in and out of class, stay engaged daily and be prepared” ... self-directed motivation and class engagement is key.” Furthermore, subject #16 stated, “Mind Mapping, Interleaved strategies to be able to teach the material in their own words. Interleaved is studying material every couple of days to incorporate long term learning and synthesis.” Subject #17 stated, “actively build connections with material and try to write or anticipate which questions will be on the exam.” Lastly, subject #11 stated, “Collaborating and connecting with other students to share knowledge and studying” ... “Use of “trees” to chunk material ... and then modeling skills via videos or demonstrations for real-life application.”

When asked to “Describe differences in learning or study strategies for successful students in hybrid-online as compared to face-to-face programs” subject #12 stated, “Need to be more organized and prepared with hybrid.” These statements support those put forth by Subject #21, who stated, “online requires more self-regulation and time management, ability to manage distractions and concentration.” Subject # 1 stated, “[hybrid-online students] 1. Focus their dedicated study time to minimum of 3–4 h/day 2. Distributed learning and studying – touching all courses every

day. 3. Review notes from last lectures, fill in blanks. 4. Do not recopy notes 5. Focused reading to fill in blanks 6. Make ‘connections’ by self-reflection, questioning, quizzing self.”

Contrastively, in response to the item “describe the types of learning and study strategies you have observed in the least successful students” Subject #25 stated, “1) Memorization with no attempt to clinically apply material, 2) Devoting LARGE chunks of time to a difficult subject (example: spending 8 hours on a Saturday studying for Gross Anatomy), 3) Attempting to learn material without discussing or reflecting on the big picture – students sometimes study on their own, don't discuss with anyone, and miss the clinical reason—g part of the issue.” Similarly, Subject #8 replied, “Distracted by spending time on internet, ‘cyberloafing’ and ‘nomophobia’”. Not prioritizing and poor time management ... not being accountable for failures or poor academic performance.” Subject #9 stated, “Procrastination, assuming that you know the material, coming to class unprepared, insufficient sleep before the exam, studying with a group of friends who are not academically strong.” Subject #16 replied, “Massing the material (Cramming),” and Subject #6 replied, “Anything that does not advance critical thinking or reflective practice”. Collectively, these participant testimonies represent a rich and detailed account of faculty perceptions for the most and least effective student learning strategies (see Fig. 1).



Fig. 1. Themes and codes word cloud.

4. Discussion

The purpose of this study was to identify faculty perceptions of student learning strategies for success in hybrid-online health professional coursework. This study identified three main themes including, self-regulated behaviors, student engagement, and studying strategies. These included various elements of self-regulated behaviors like time management, preparedness, and work/life balance. Furthermore, aspects of student engagement such as daily interaction with course materials, content application, class participation, and peer collaboration strongly emerged. Lastly, student study strategies such as creating test questions, peer-to-peer teaching, and concept mapping were routinely observed in participant narratives. By and large, the most prominent theme observed was self-regulated learning (SRL). SRL strategies have been very well-studied and includes things that a student actively controls about their behavior and orientation to learning new material. [32–36,40,41] Overall, based on participant excerpts, it appears faculty advisors believe SRL behaviors in and out of the classroom have an enhancing effect on a student's academic performance.

Many of the learning strategies uncovered in this study align with various theories of adult learning. [42–44] For example, adult learning is heavily reliant upon self-regulated structures, meta-

cognition, reflective practice, social constructivism, and experience. [42,43] Interestingly, however, the findings of this study did not support a strong signal for motivation, despite it having a solid base in the prior literature as self-determination theory. [44] Although motivation was present some participant narratives it paled in comparison to other SRL strategies espoused by faculty advisors. Second to SRL, respondents overwhelmingly emphasized the importance of student engagement. Student engagement is associated with routine interaction, participation, and collaboration between the learner and facilitator. [40] That is, participants felt the degree to which a student maintains meaningful and frequent engagement with learning content, peers, and faculty is related to their academic success, or lack thereof. The student engagement theme may be more representative of a combination other aspects of adult learning like meta-cognition, experiential, reflection, and social constructivism. [5,18,32–36,42] Importantly, this study identified elements of learning strategies that faculty advisors recommended students avoid. These included “rote memorization”, procrastination, lack of concentration, and failure to apply concepts in practice.

There are a number of limitations to this study. Mainly, bias may have influenced the respondents to an unknown degree due to their involvement in teaching a hybrid-online curriculum. As such, individual experiences and philosophical worldviews may

have resulted in biased responses to the questionnaire items. Furthermore, investigator use of purposeful sampling may have also impacted the results by way of selection bias. Although the study achieved adequate saturation of the sample it still represented an unequivocally smaller set of the population of faculty teaching in hybrid-online PT and OT programs. In this study, PT and OT faculty were surveyed together to achieve saturation, depth, and richness of qualitative data. It is worth noting that these two professions, despite having numerous curricular similarities, are mutually exclusive and independent of one another. That said, there may be latent nuances specific to each professional program that went undetected. Lastly, despite having an open-ended survey developed by a subject matter expert, the reliability of the measurement tool utilized is unknown. As such, making broader generalizations on findings from this study are cautioned.

This study provides a framework for future investigations on the phenomenon of interest as hybrid-online PT and OT educational programs continue to grow. This study should be repeated in larger and more geographically and culturally diverse samples of faculty in PT and OT education programs. Future studies should consider examining each profession individually as there may be intricacies undetected in this analysis. Similarly, future investigations should seek to validate the measurement tools and survey items. Additionally, further research should consider investigating the degree to which student learning and study strategies for hybrid-online education are influenced by program learning outcomes. For example, practical application of hands-on manual skills and assessments are core components of PT and OT clinical examinations. It is possible PT and OT program learning outcomes may require students to rely more heavily on self-regulation and engagement strategies due to higher degrees of psychomotor learning when compared to other health professions, such as pharmacy or medicine, which may rely more heavily on “visual or sensing” learning as described by the Felder-Silverman model. [44]

This study revealed three main implications relevant to hybrid-online health professional programs: teaching, learning, and academic support resources. First, these findings may serve to guide faculty in using teaching strategies that align with, and inculcate, certain aspects of student engagement. Second, these findings may guide students in hybrid-online programs to preferentially select self-regulated behaviors in their approach to learning. Third, these findings may lead institutions to build stronger academic support resources that favor student capacity

building in the areas of self-regulation, engagement, and study strategies. The findings of this study may also help guide novice faculty in their academic advising of students as hybrid-online instruction becomes more commonplace in PT and OT programs. Overall, it is imperative faculty advising be consistent with contemporary strategies for success as there are significant financial implications for students and institutions. Faculty encouragement of self-regulated behaviors, aspects of student engagement, and specific study strategies may empower students in hybrid-online learning; consequently, advancing academic success.

Ethical disclosure

Approval to conduct this study with human subjects was granted by the University of St. Augustine for Health Sciences Institutional Review Board.

Conflict of interest

There are no financial conflicts of interest to disclose.

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Appendix 6-item Qualitative Questionnaire

Questionnaire Items

- **QUESTION #1:** In your experience, describe the types of learning and study strategies you have observed in the most successful students in hybrid-online courses.
- **QUESTION #2:** In your experience, describe the types of learning and study strategies you have observed in the least successful students in hybrid-online courses.
- **QUESTION #3:** In your faculty advising to students, which learning and study strategies do you typically emphasize for students to be the most successful in your courses?

- **QUESTION #4:** In your faculty advising to students, which learning and study strategies do you typically recommend students avoid in your courses?
- **QUESTION #5:** Think about your role as a faculty member/student advisor. Do you have any favorite “go-to” learning and study strategies that you recommend to all students? If so, please list them out:
- **QUESTION #6:** Describe differences in learning or study strategies for successful students in hybrid-online as compared to face-to-face programs.

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