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Abstract

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Keywords

Occupational therapy education, professional characteristics, hybrid education, traditional campus education, entry-level occupational therapy program, mixed methods

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Professional Characteristic Development of Occupational Therapy Students in Traditional vs. Hybrid Pathways

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ABSTRACT

The development of professional characteristics is crucial to becoming a well-rounded, competent occupational therapist. An exploratory sequential mixed method design was used to determine if there was a difference in the growth of professional characteristics of students in a three-year entry-level Doctor of Occupational Therapy (OTD) program who attended a traditional on-campus program compared to a hybrid program. Ten second and third-year occupational therapy students from the traditional and hybrid pathways participated in a focus group related to cultivating professional characteristics. The themes that evolved from the focus group included: teamwork/team player, time management, communication, self-awareness, critical thinking, and leadership. The themes were then used to create survey questions related to the development of professional characteristics. Twenty first-year, 23 second-year, and 25 third-year students completed the survey. Twenty-seven of the 68 survey participants attended the program in the traditional pathway, and 41 of the 68 survey participants attended the hybrid pathway. Outcomes from the survey data suggest that there are significant differences in professional characteristics between traditional and hybrid students in the areas of listening (p-value = 0.024) and assertive communication (p-value = 0.003), in which traditional students rated their agreement of the development of these characteristics higher than the hybrid students. The results of this study emphasize the importance of professional occupational therapy education regardless of the delivery model (hybrid or traditional) to help mature professional characteristics in students and prepare them for clinical practice.

Introduction

Professional characteristics, such as being honest, dependable, and a good communicator and team-member, have been defined as qualities or attributes a person exemplifies in a work environment and are characteristics of those particular professionals (Bossers et al., 1999). Professional characteristics of individuals should align with company/employer standards as well as professional standards of behavior. The development of professional characteristics often starts at the beginning of professional education and can change throughout the course of the education process (Howard & Barton, 2019; Rees et al., 2019). During the educational process, professional characteristics can be acquired through classroom learning, hands-on experience, self-assessment, and through opportunities for students to advocate for their needs (Bossers et al., 1999).

Regardless of how they are developed, professional characteristics are crucial to becoming a well-rounded, competent practitioner who effectively functions on interprofessional teams in today's health care environment (St. Peters & Short, 2018). In healthcare professions, professional characteristics can include critical thinking and reasoning skills, interprofessional skills, ethical reasoning, effective oral communication skills, leadership skills, providing client-centered therapy, time management skills, showing respect and empathy for others, self-management skills, and flexibility (Adam et al., 2011; Brown et al., 2010; Brown et al., 2020; Brown et al., 2019; Henderson, 2016; Randall et al., 2016; Roberts et al., 2017; Wallingford et al., 2016; Yu et al., 2018a; Yu et al., 2018b).

Specific to the healthcare profession of occupational therapy, if occupational therapists do not develop professional characteristics, the practitioner-client relationship is diminished; clients tend to feel dehumanized, there is a lack of trust, and client needs are not met (Corring & Cook, 1999; Palmadottir, 2006). It is unclear if one educational model, hybrid, or traditional campus-based delivery, is more beneficial to the development of professional characteristics in occupational therapy students. The purpose of this exploratory sequential mixed methods study was to determine if there were similarities or differences in the development of professional characteristics of traditional campus-based compared to hybrid occupational therapy students attending an entry-level doctor of occupational therapy (OTD) program.

Literature Review

Even before COVID-19 caused major disruptions to teaching and learning, some professional programs applied distance teaching models, where the students and instructors utilized interactive communication systems, like computers and smart phones, to connect with one another (Holden & Westfall, 2010). A common distance teaching and learning model is a hybrid model where students watch lectures online (synchronously or asynchronously) and attend lab-based courses on campus face-to-face with instructors in a classroom/lab setting (Holden & Westfall, 2010). Research studies addressed the effectiveness of hybrid formats among healthcare professional programs, student outcomes, and student preferences of delivery model. These studies showed that hybrid formats were effective education methods (Arabasz & Baker, 2003;

Manning-Ouellette & Black, 2017; Martin et al., 2015; Rawlins & Ali, 2017; Richardson et al., 2008). Some studies concluded there were no significant differences between healthcare student outcomes in traditional education versus hybrid education (Cathorall et al., 2018; Harris & Myers, 2013; Ried & McKenzie, 2004; Russell et al., 2008). Peslak et al. (2018) and Larin et al. (2010) both found that students preferred the traditional delivery format, while Pittman and Lawdis (2017) determined students preferred the hybrid delivery format. In some situations, it was found that neither of the delivery formats were preferred over the others (Lazinski, 2017). No significant differences were found between graduate student outcomes among students attending an entry-level OTD program in traditional campus-based versus hybrid pathways, indicating hybrid education is an effective delivery model for occupational therapy (Jensen & Lally, 2018; Mu et al., 2014). Regardless of the delivery model, healthcare employers' value and seek specific professional characteristics when hiring new healthcare graduates.

A thorough review of the literature did not produce a definition of professional characteristics. Rather, the literature contained mixed definitions with similar terms to describe professional characteristics, and varying ideas of what can be considered professional characteristics. Similar terms found within the literature include professionalism, professional behaviors, practice behaviors, emotional intelligence, interprofessional skills, professional identity, professional attributes, professional formation, and competence (Adam et al., 2011; Adam et al., 2013; Baker & Durham, 2013; Boehm et al., 2015; Bossers et al., 1999; Brown et al., 2020; Byszewski et al., 2012; Gribble et al., 2017; Gribble et al., 2018; Haugland et al., 2018; Howard & Barton, 2019; Ikiugu & Rosso, 2003; Lebedeva et al., 2016; Mason & Mathieson, 2018; Pittman & Lawdis, 2017; Rees et al., 2019; Smith, 2017; Thomas et al., 2012; Wallingford et al., 2016). The following review of the literature describes several professional characteristics that are valued within healthcare practice and, specifically, within occupational therapy practice.

Healthcare employers' value different professional characteristics when hiring employees. Some highly valued professional characteristics identified within the healthcare industry include knowledge of evidence-based practice and integration of evidence in making treatment decisions (Thomas et al., 2012). Some employers look for specific attributes when hiring occupational therapists, such as skills in communication, professional reflection, and personal evaluation (Adam et al., 2013). Honesty, integrity, and respect are appreciated among healthcare professionals (Randall et al., 2016). Leadership skills are highly regarded in the healthcare environment, and some research indicated benefits of involvement in mentorship programs to further develop leadership skills (Roberts et al., 2017). Communication skills and having a good understanding of the roles and functions of other colleagues are important while interacting with a healthcare team (Adam et al., 2011; Mason & Mathieson, 2018). Additionally, being client-centered, providing collaborative care, and respecting other professions are important for healthcare professionals (Adam et al., 2011; Mason & Mathieson, 2018). Regarding occupational therapy skills, occupational therapy students and occupational therapy practitioners believe that professional competences, such as utilizing clinical reasoning and evidence-based practice within a treatment session as well as good

communication, the ability to develop occupational and client-centered goals, and time management are necessary for practice (Wallingford et al., 2016). According to the American Occupational Therapy Association's (AOTA) Vision 2025, evidence-based decision-making skills, leadership skills, and working collaboratively with clients to improve their quality of life are valued occupational therapy professional characteristics (AOTA, 2018).

Professional characteristics begin to develop during an individual's time in educational healthcare programs. Several researchers have found educational programs help healthcare students with the formation of professional characteristics and overall professional identity (Boehm et al., 2015; Byszewski et al., 2012; Fortune et al., 2016; Haugland et al., 2018; Ikiugu & Rosso, 2003; Lebedeva et al., 2016). Although critical thinking skills develop in educational programs, study results are mixed about whether these aptitudes solely develop in professional programs, or through life experiences (Peeters & Boddu, 2016; Smith, 2017). Some research indicates that empathy, a professional characteristic, progressively develops over the course of educational experiences in any healthcare field (Brown et al., 2010; Gribble et al., 2018). Assertive communication is another professional characteristic identified in literature as important for healthcare students to cultivate (Bosser et al., 1999). Additionally, to effectively navigate educational programs and eventual practice demands, time management was identified as an important professional characteristic for healthcare students (Henderson et al., 2017; Yu et al., 2018b).

Although professional characteristics developed during education have been deemed crucial to thriving in a professional setting, there is little research regarding how educational programs that utilize hybrid learning models cultivate professional characteristics among traditional campus-based and hybrid students. To the research teams' knowledge, there has been no research conducted on what professional characteristics occupational therapy students develop during professional school, and how this compares or differs from professional characteristics traditional and hybrid occupational therapy students develop within the same professional program. The purpose of this study was to determine if there were differences in the development of professional characteristics of traditional and hybrid occupational therapy students in a doctoral program.

Methods

Research Design

A sequential mixed method design was used to examine if a hybrid delivery model and a traditional delivery model influenced the development of professional characteristics among OTD students at the same institution. Qualitative data gathered from a focus group informed the development of a survey for the quantitative portion of the study. The initial research proposal was approved as exempt status by the university's Institutional Review Board (IRB) before the research study began. The university also gave permission to use the emails of current first, second, and third-year students in the entry-level OTD program.

Description of Program Delivery Models

In this OTD program, hybrid students take the same courses as traditional students by listening to lectures either synchronously or asynchronously but partake in lab courses on the campus where they reside.

Participants and Sampling Criteria

Students that were enrolled in first, second, and third-year of an entry-level OTD program, in either a traditional pathway or a hybrid pathway, were eligible for the study. Criteria for participation included availability and willingness to participate in the study. Exclusion criteria included graduates of the program or students that started studying in the entry-level OTD program but did not complete the program.

Qualitative Research: Focus Group

Focus Group Participants

The focus group participants included second and third-year students from the traditional and the hybrid pathways. First-year students were excluded because at the time the focus group occurred, it was surmised they may have not been in the program long enough to have developed some important professional characteristics.

Focus Group Procedures

After a comprehensive consultation with experts with ample knowledge and experience with focus groups, the research team developed the focus group questions. During the fall semester, second and third-year students were invited via email to review the focus group questions and provide feedback to the research team to ensure the questions were easily understandable and objective. One student from the hybrid pathway and five students from the traditional pathway provided feedback.

Once feedback was received, the focus group protocol was finalized and sent to the IRB for modifications before the focus group was held. After the modifications received approval, a recruitment email was sent to all second and third-year students in the entry-level OTD program in all pathways during the fall semester, and again two weeks later, asking for participants for the focus group. Approximately one month after the final email for recruitment was sent out, the focus group occurred. The focus group lasted 38 minutes and took place via video conference using the computer program Zoom® Video Communications.

Ten occupational therapy students participated in the focus group. Four were third-year students and six were second-year students. Two were part of the traditional pathway, while eight were part of the hybrid pathway. Only one second-year hybrid student participated in both the review of the focus group questions and in the actual focus group.

Focus Group Data Analysis

The focus group conversation was transcribed by the research team. The focus group transcript was thematically analyzed by everyone on the research team using Tesch's Eight Steps in the Coding Process (Creswell, 2014; Curtin & Fossey, 2007). Each research team member initially independently read the transcription to develop codes, and then discussed the initial codes to determine which to use (Creswell, 2014). The codes were added to the focus group transcripts using a word processor software, and themes were then created by combining similar topics (Creswell, 2014). The final step was to perform preliminary analysis to guide the creation of the survey questions (Creswell, 2014). The purpose of utilizing this coding method was to gain an understanding of the entry-level OTD students' perceptions regarding their education and professional characteristics.

The trustworthiness of the focus group transcript was established by completing member-checking. Member checking is the process of involving the participants in the data analysis by allowing them to read and comment on their experiences (Curtin & Fossey, 2007). To accomplish this, each participant of the focus group was sent the written transcript to check for accuracy and validation of their comments (Curtin & Fossey, 2007). The trustworthiness of the focus group data was established by completing researcher triangulation (Curtin & Fossey, 2007). Researcher triangulation was utilized to overcome bias of using only a single observer to analyze the focus group transcript (Curtin & Fossey, 2007).

Focus Group Results

Six themes were developed and described below.

Theme One: Teamwork/Being a Team Player

Many of the student participants within the focus group made comments related to teamwork, including respect and interprofessional skills, being an essential professional characteristic of occupational therapists. A study participant noted, "…you are going to deal with in a different setting, different people with different well somewhat similar values but still a little bit different to that group, and so I think having to adapt [is important] ... " Another student made the comment, "… I really need to know how to work well in a team with people who are not like minded as myself…"

Theme Two: Time Management

Time management was frequently mentioned as an important skill to meet the expectations of the OTD program and eventually practice productivity standards. Many of the participants agreed that balancing obligations, being organized, and managing expectations are valuable professional characteristics, both in the entry-level OTD program and within practice. One participant explained, "…something that has always been a growth factor for me and will continue to be is managing conflicting obligations. Especially with school, you have seven different classes, it can be pretty difficult."

Another participant added that she was nervous to "manage expectations of professors back at school while managing the expectations of the CI [clinical instructor] and clients [at fieldwork]."

Theme Three: Communication

Communication, including listening skills, assertiveness, advocacy, and providing constructive comments was another important professional characteristic that was mentioned by several participants. Being able to communicate with others assertively and constructively either face-to-face or through written text was noted as an important skill to develop. One participant explained, "…I can control my method of communication by seeing how it is received." Another participant noted that "being an advocate for yourself and being a good communicator [is important] because we are not able to communicate in person. Sometimes your tone and meaning can be altered when you are in an email or Zoom meeting."

Theme Four: Self-Awareness

Several students mentioned the importance of having self-awareness as a student and as a future practitioner. Self-awareness included patience, discipline, being open to new ideas, making and learning from mistakes, taking initiative, being open to constructive feedback, and asking for help. According to participants, patience and discipline are necessary parts of one's professional personality, as well as essential traits to refine throughout life. These skills can be utilized in practice when managing caseloads and being efficient. A participant noted, "…patience and initiative. Even thinking back to first semester, the technological aspects of hybrid learning and being patient with my system or the video happening on campus or making use of microphones." Another participant stated, "You have to either watch lectures live or have a schedule set up and have that discipline to watch those lectures at those times and know that you have a different schedule than campus students." Making and learning from mistakes was also emphasized as important in the professional world. One participant explained, "Teachers are giving us feedback not because they want us to feel bad or anything but because they want us to be the best therapists we can be." In addition, participants in the study expressed the importance of asking for help, which can again be translated into practice. One participant explained, "I think one of the most professional things you can do is ask for help, because if you do something and it ends up hurting someone, that looks bad on you and makes you look unprofessional."

Theme Five: Critical Thinking

Critical thinking, including problem-solving and finding solutions, was discussed by participants. According to some of the participants, an integral part of occupational therapy is having the ability to problem solve when working with clients. One participant verbalized, "…[being] open to problem solving in that kind of way and being professional in a way that you can listen to everyone even if they disagree with you to come up with a solution." Closely intertwined with problem-solving, effectively finding a solution is an

essential component of one's professional skill set. One of the participants noted, "It is going to be a whole different set of dynamics that you are going to have to deal with in a different setting, different people with different, well, somewhat similar values…"

Theme 6: Leadership

Leadership was expressed throughout the focus group as an important skill, especially when advocating for clients' needs and dealing with conflicts within the work environment. Participants' responses revealed confrontation skills and the ability to manage conflict were two important aspects of leadership. A participant stated, "One thing for me, I think is being able to confront people, whether it be clients or co-workers in a professional manner without getting other people involved." Managing conflicts was also deemed a crucial ability for a professional to possess, especially when working with other professionals. As one participant explained, "…interacting with colleagues, or maybe people who you're not having the best interactions with and you think, ahh what challenges are they facing today that is making them present this way [instead of adding to the conflict] …"

The intent of the focus group was not to emphasize differences in the development of these professional characteristics between the on-campus and hybrid pathways. Instead, through thematic analysis, its purpose was to identify professional characteristics to inform the development of the survey. With the survey, the aim was to compare results regarding differences and similarities in the development of these professional characteristics between the two pathways.

Quantitative Research: Survey

Survey Development and Pilot

The survey was developed and evaluated by a panel of two faculty mentors, one university research professor, and a statistician to ensure conceptual clarity and face validity. The survey was sent to first, second, and third-year students in the entry-level OTD program. Students were asked to provide feedback to the research team to ensure the questions were essential and easily understandable. Two students from the traditional pathway and five students from the hybrid pathway in all three years of the program responded and provided feedback. Once feedback was received, the survey questions were finalized and sent to the IRB for the modification to be approved before the final survey was sent. The finalized survey questions can be found in the Appendix.

Survey Participants

The survey was administered to students in the first, second, and third-years of the entry-level OTD program, from the traditional and the hybrid pathways. The first-year students were included in this portion of the research to diversify and increase the size of the targeted population. At the point in the semester when the survey was sent out, first-year students were believed to have begun the process of developing some professional characteristics they had not yet developed at the time of the focus group.

Survey Procedures

A recruitment email including the survey link was sent approximately two months after the focus group to all first, second, and third-year students (N=356) of the entry-level OTD program in both pathways, asking for participants to complete the survey. In order to detect significant differences, the research team calculated a target sample size of 182 out of the 356 students in the program, for a targeted response rate of 51%. The survey was open for a month. The research team sent follow-up reminder emails after two weeks of the initial recruitment email and then again at the beginning of the final week that the survey was open.

Data Analysis of the Survey

The survey data was analyzed using Statistical Package for the Social Sciences (SPSS; Version 25, IBM Corp., Armonk, N.Y., USA). Descriptive statistics were conducted to characterize participants' background information, which included participants' age, gender, program status, program pathway, degree earned before entering the program, and work experience in health-related and non-health related areas, as seen in Table 1. Chi-Square tests were then performed to determine if the participants' responses to each survey question were independent of their status, pathway, and perceptions of professional characteristics.

Results of the Survey

Of the 356 students in the OTD program, 68 students participated in the survey, resulting in a survey response rate of 19.1%. It is unknown if the students who reviewed the focus group protocol or the students who reviewed the survey questions also later participated in the actual survey, as the survey was anonymous.

All the occupational therapy students that participated in the survey (n=68) were between 22 and 38 years of age. Fifty-nine of the participants were female, and nine were male. Sixty-five (95.6%) earned a bachelor's degree before starting the OTD program, and 55 (80.9%) had limited work-related healthcare experience that ranged from no healthcare-related work experience to one to three years of healthcare-related work. Nearly 30% (n=20) were first-year students in the entry-level OTD program, 33.8% (n=23) were in the second year of the program, and 36.8% (n=25) were in the third year of the program. About 40% (n=27) of participants were part of the traditional pathway, while 60% (n=41) were part of a hybrid pathway (see Table 1 for all demographic information).

Table 1

Demographics of Survey Participants

Variable	Total (n,%)	Campus (n,%)	Hybrid (n,%)
Age (mean+SD*)	26.5±3.7	24.5±1.9	27.8±4.0
Gender			
Male	9 (13.2)	3 (11.1)	6 (14.6)
Female	59 (86.8)	24 (88.9)	35 (85.4)
Degree earned before entering the OTD program			
Bachelor's degree	65 (95.6)	27 (100.0)	38 (92.7)
Master's degree	1 (1.5)	0 (0.0)	1 (2.4)
Doctoral degree	2 (2.9)	0 (0.0)	2 (4.9)
Work experience before entering the OTD program: health-related area			
No work experience	15 (22.1)	9 (33.3)	6 (14.6)
Less than 1-year	14 (20.6)	7 (25.9)	7 (17.1)
1-3 years	26 (38.2)	9 (33.3)	17 (41.5)
3-5 years	7 (10.3)	2 (7.4)	5 (12.2)
More than 5 years	6 (8.8)	0 (0.0)	6 (14.6)
Work experience before entering the OTD program: non-health-related area			
No work experience	4 (5.9)	2 (7.4)	2 (4.9)
Less than 1-year	2 (2.9)	2 (7.4)	0 (0.0)
1-3 years	22 (32.4)	10 (37.0)	12 (29.3)
3-5 years	14 (20.6)	7 (25.9)	7 (17.1)
More than 5 years	26 (38.2)	6 (22.2)	20 (48.8)
Year of the OTD program currently in			
First year	20 (29.4)	7 (25.9)	13 (31.7)
Second year	23 (33.8)	10 (37.0)	13 (31.7)
Third year	25 (36.8)	10 (37.0)	15 (36.6)

*SD = standard deviation

Descriptive Statistics

After analyzing the survey participants' background information data, the two groups were similar except in age, in which students in hybrid pathway were significantly older ($p<0.01$) than students in campus pathway.

Inferential Statistical Analysis

The information presented in the survey included participants' perspectives of their development of professional characteristics throughout their time within the entry-level OTD program. The domains and items of professional characteristics were created from the focus group themes. Mann-Whitney U test was performed on the data to determine if there were significant differences between traditional and hybrid students regarding the domains. For this study, significant differences were any p-value below 0.05. Two of the items under the communication domain reached statistical significance (Listening $p = 0.024$ and assertive communication $p = 0.003$) (see Table 2). Regarding listening skills, 96% traditional students indicated they either agreed or strongly agreed that they had developed this characteristic, while 77% of hybrid students indicated they either agreed or strongly agreed. For assertive communication, 96.3% of traditional students indicated they either agreed or strongly agreed that they had developed this characteristic, compared to 73.2% of hybrid students indicated they either agreed or strongly agreed. Given 27 campus students and 41 hybrid students participated in the survey, a mean difference was detected greater than 0.51, with a pooled standard deviation less than or equal to 0.71, which achieved an approximate power of 0.81. There is evidence to suggest a significant difference in the development of the professional characteristics of listening skills and assertive communication skills between traditional and hybrid students.

Independent Samples T Test was performed on the survey data (see Table 3). Equal variances were assumed for each domain. The t-values for each domain provide evidence to support similarities in the development of professional characteristics of traditional occupational therapy students and hybrid occupational therapy students. No statistically significant results were found between the domain mean values, indicating no significant differences between traditional and hybrid student development of professional characteristics (see Table 3; see Figure 1). There is evidence to suggest that professional characteristics are developed independent of program pathway.

Table 2

OTD Student Perceptions: Development of Professional Characteristics

	Strongly Disagree or Disagree, %		Neutral, %		Strongly Agree or Agree, %		
Domain/Item	Campus	Hybrid	Campus	Hybrid	Campus	Hybrid	p*
Teamwork/Being a Team Player							
Respect	0	0	3.7	2.5	96.3	97.5	0.633
Interprofessional skills	3.7	0	7.4	0	88.9	100	0.150
Time Management							
Organization	0	2.4	7.4	12.2	92.6	85.3	0.416
Balancing obligations	0	0	11.1	17.1	88.9	82.9	0.116
Managing expectations	0	2.4	14.8	14.6	85.1	83	0.111
Communication							
Through technology	3.7	0	14.8	4.9	81.4	95.1	0.121
Face to face	0	0	3.7	9.8	96.3	90.2	0.298
Listening	0	0	3.7	12.2	96.3	87.8	**0.024**
Assertive communication	3.7	2.4	0	24.4	96.3	73.2	**0.003**
Advocacy	0	0	0	2.4	100	97.6	0.228
Receiving constructive criticism	0	0	3.7	9.8	96.3	90.2	0.218
Giving constructive criticism	3.7	0	25.9	29.3	70.3	70.8	0.713
Self-Awareness							
Patience	0	0	18.5	24.4	81.4	75.6	0.368
Discipline	0	0	3.7	12.2	96.3	87.8	0.442
Openness to new ideas	0	0	3.7	4.9	96.2	95.1	0.263
Making and learning from mistakes	0	0	3.7	7.3	96.3	92.7	0.057
Taking initiative	0	0	11.1	7.3	88.9	92.6	0.813
Open to receiving feedback	0	0	3.7	4.9	96.3	95.1	0.519
Asking for help	0	4.9	11.1	9.8	88.8	85.4	0.471
Critical Thinking							
Problem solving	0	0	0	2.4	100	97.6	0.597
Finding solutions	0	0	3.7	4.9	96.3	95.1	0.162
Leadership							
Appropriately dealing with confrontation	0	2.4	18.5	26.8	81.4	70.7	0.134
Managing conflicts	0	2.4	14.8	22.0	85.1	75.6	0.104

*Mann-Whitney U test

Table 3

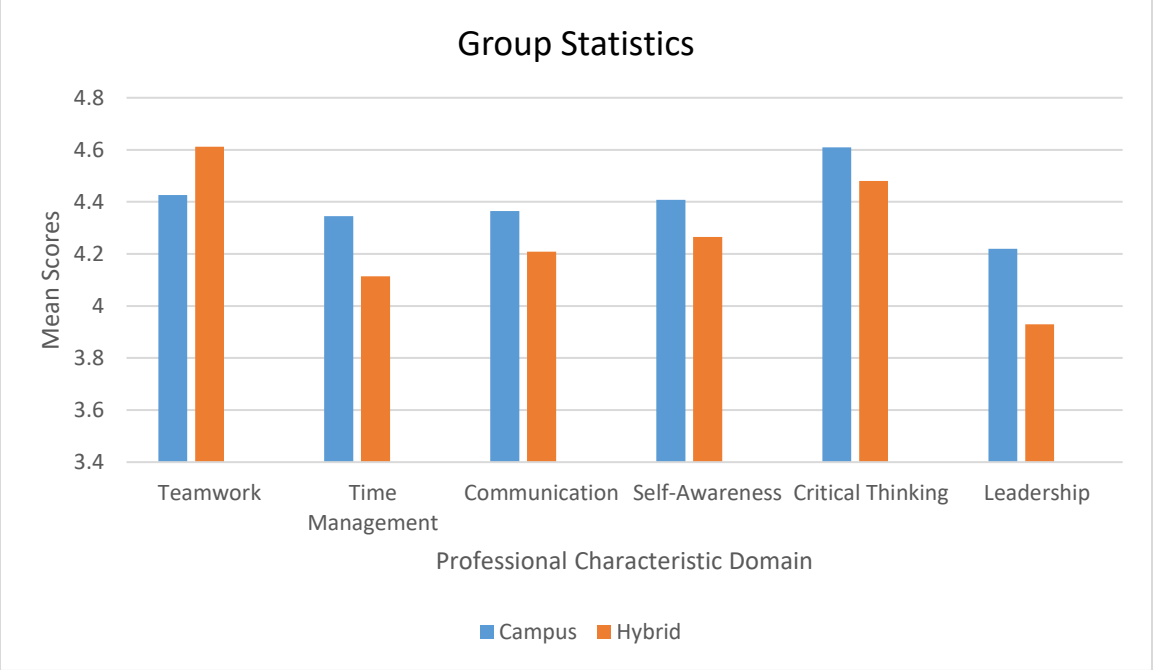
The Comparisons of Mean Domain Scores Between Campus and Hybrid Students

Domain	Campus Mean ± SD	Hybrid Mean ± SD	t	p*
Teamwork/Being a Team Player	4.43 ± 0.60	4.61 ± 0.46	-1.440	0.155
Time Management	4.35 ± 0.60	4.11 ± 0.60	1.551	0.126
Communication	4.37 ± 0.48	4.21 ± 0.39	1.468	0.147
Self-Awareness	4.41 ± 0.46	4.26 ± 0.45	1.277	0.206
Critical Thinking	4.61 ± 0.51	4.48 ± 0.52	1.057	0.294
Leadership	4.22 ± 0.70	3.93 ± 0.70	1.700	0.094

*Independent samples t test

Figure 1

Mean Score for Each of the Domains for Campus vs. Hybrid Students



Discussion

In this mixed-methods study, differences, and similarities of the development of professional characteristics of traditional and hybrid occupational therapy students were determined based on an analysis of data from students in an entry-level OTD program. In addition, the study sought to determine if the professional characteristics of traditional and hybrid occupational therapy students were developed independent from the students' program pathway. The following discussion overviews the findings from the qualitative and quantitative data.

Qualitative Data

The study results regarding being a team player as an important professional characteristic is consistent with previous research. This consistency is that the ability, skills, and interest in working with a team and interpersonal skills such as building rapport, being personable, and showing respect are frequently looked for by employers when hiring occupational therapists (Mason & Mathieson, 2018; Randall et al., 2016). The findings are congruent with previous literature in that occupational therapy students felt developing time management skills, organizational skills, and self-management skills are important to successfully complete an occupational therapy program and are precursors to a student developing professional identity (Brown et al., 2019; Lebedeva et al., 2016; Wallingford et al., 2016). As identified by the study findings, communication in different forms, such as advocating for clients and utilizing active listening stills, are important entry-level competency skills when working in an inter-professional healthcare environment (Adam et al., 2011; Brown et al., 2019; Mason & Mathieson, 2018; Wallingford et al., 2016). According to the results of this study, having skills such as patience, learning from mistakes, and taking initiative were determined as important competency skills and this finding is congruent with other findings (Gura, 2010; Knecht-Sabres et al., 2013; Larin et al., 2010; Naidoo et al., 2013). As identified in this study, problem solving and finding solutions are important aspects of occupational therapy students developing critical thinking skills, which affectively aid a practitioner in providing quality client care (Peeters & Boddu, 2016; Smith, 2017). Leadership skills can include areas such as the ability to confront others and the ability to manage conflicts, according to the findings of this research. The research findings were consistent in that developing leadership skills, such as managing conflict, are essential to meet the dynamic needs of the occupational therapy profession and allows students to reflect and refine their own skills (Baker & Durham, 2013; Gribble et al., 2017; Mu et al., 2010).

Quantitative Data

Based on previous research, it was anticipated there would be no significant differences in the development of professional characteristics of traditional and hybrid occupational therapy students. In a study conducted by Mu et al. (2014), it was determined that there were no significant differences between OTD students from traditional and hybrid pathways when comparing first-year student grade point averages (GPA), cumulative GPAs, fieldwork performances, grades on the NBCOT practice exam, and NBCOT pass

rates. Another study examined the differences between OTD students from traditional and hybrid pathways by investigating student GPA at the end of each academic year. In their study, Jensen and Lally (2018) reported overall GPA, performance evaluation scores for two Level II fieldwork experiences, and NBCOT practice exam scores. They determined that there were no significant differences between traditional and hybrid occupational therapy students.

According to the results of the quantitative data, it was surprising that the communication subthemes of listening and assertive communication resulted in statistically significant differences between the traditional and hybrid students. It is unclear why there were differences; if differences were to be seen between traditional and hybrid students, it was expected that hybrid occupational therapy students would have had a higher agreeance with developing listening and communication skills due to being at a distance from the campus professors and having to advocate for needs when interacting with them through technology. A possible explanation is that traditional students do have the ability to interact with professors face-to-face often on a daily basis, thus building the skills of listening to others and assertively communicating their own opinions.

Limitations

The study has limited generalizability due to the small sample size of students that participated in the survey. The focus group was heavily influenced by hybrid pathway participants, as there were eight students from the hybrid pathways compared to the two traditional pathway participants. In addition, the response rate of the survey was 19.1%, lower than the targeted response rate of 51%. Another limitation was that although the research team piloted the survey questions by sending the survey to students for review, the survey itself does not have established reliability and validity. In addition, bias is indicated due to the fact that one student that reviewed the focus group protocol also participated in the actual focus group. Further bias is that it is unknown if the same students that reviewed the survey questions also partook in answering the survey questions, as the survey was anonymous. Additionally, because many of the professional characteristics that were presented in the survey are highly desirable among healthcare professionals, some participants may have felt obligated to present themselves as having certain professional characteristics, regardless if they have developed them. Participants may have also misinterpreted the survey questions, which may have impacted the accuracy of each participant’s response.

Implications for Future Research

This study has implications for further investigation. Researchers could delve further into how the instructional methods provided for occupational therapy students affect the development of key characteristics deemed important by future employers and other health care providers. Although many of the findings in this study were similar between traditional and hybrid students, there were unique findings indicating that there were significant differences between students in the realm of communication, specifically with the subthemes of assertive communication and listening skills. Further research can be conducted to examine why significant differences in the subthemes existed between

traditional and hybrid students, as well as investigating other similar programs to see if the same differences exist. Additionally, researchers can investigate the effectiveness of education provided in a hybrid format in comparison to a traditional, campus-based format. Finally, further research can look at other professional characteristics of traditional occupational therapy doctoral students compared to hybrid occupational therapy doctoral students that were not tested in this study. Other factors can be investigated regarding the development of occupational therapy professional characteristics, including age, previous work experiences, and gender.

Implications for Occupational Therapy Education

There are many advantages to the delivery of content in traditional and hybrid healthcare education programs. While hybrid programs offer students flexibility, some degree of traditional campus lab-based teaching and learning is likely needed in healthcare education programs to teach students hands-on clinical skills and perhaps professional characteristics as was done with the educational program studied. The results of this study should be of interest to academic administrators and faculty as educational programs either require or elect to offer online or hybrid programming options for students. It is encouraging to know that professional characteristics that aid students in their careers are developed regardless of delivery format. Furthermore, based on these study findings it would be helpful to focus in the curriculum on assertive communication and listening skills along with other professional characteristics regardless of the method of educational delivery.

Conclusion

This research study provided information regarding similarities and differences in the development of professional characteristics of traditional and hybrid students in one entry-level OTD program. There are statistically significant differences in the way traditional and hybrid students feel about developing communication as a professional characteristic, specifically in assertive communication and listening skills. With the evidence that was found, it is important to ensure that students who are graduating from either a traditional or hybrid OTD program feel confident in their communication skills, as well as other professional characteristics, because communication is essential to the occupational therapy process and a key element to providing high-quality, client-centered care. The results of this study also emphasize the importance of professional occupational therapy education, regardless of the delivery model, to help students develop professional characteristics to prepare them for occupational therapy clinical practice.

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Appendix

Survey Questions

A) What is your current age? Please provide your answer below:

B) Please indicate your gender:
   i. Male
   ii. Female
   iii. Other
   iv. Prefer not to answer

C) What degree did you earn before entering the program?
   i. Bachelor's degree
   ii. Master's degree
   iii. Doctoral degree
   iv. Other, please specify:

D) What was your work experience in health-related areas (any are where skilled services are provided, including full and part time) before entering the program?
   i. No work experience
   ii. Less than 1-year work experience
   iii. 1-3 years of work experience
   iv. 3-5 years of work experience
   v. More than 5 years of work experience

E) What was your work experience in non-health-related areas (including full and part time) before entering the program?
   i. No work experience
   ii. Less than 1-year work experience
   iii. 1-3 years of work experience
   iv. 3-5 years of work experience
   v. More than 5 years of work experience

F) Which year of the Creighton University entry-level Doctor of Occupational Therapy program are you currently in? (Choose one)
   i. First year
   ii. Second year
   iii. Third year

G) Please indicate which program pathway you are in (Choose one):
   i. Campus (Omaha)
   ii. Greater Omaha (GO)
   iii. Regis (CO)
   iv. Alaska

H) Professional characteristics are needed to provide quality client services, effectively market occupational therapy services, conduct research, and keep pace with the legal, political, ethical, social, and economic environments within the occupational therapy field. Which professional characteristics do you believe you have made progress toward developing during your time in the Creighton University entry-level Doctor of Occupational Therapy program? Mark your level of Agreement.

Do you believe you have made progress toward developing the professional characteristics listed below related to TEAM WORK/BEING A TEAM PLAYER:

Respect	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Interprofessional skills	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Do you believe you have made progress toward developing the professional characteristics listed below related to TIME MANAGEMENT:

Organization	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Balancing obligations	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Managing expectations	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Do you believe you have made progress toward developing the professional characteristics listed below related to COMMUNICATION:

Communication through technology	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Communication face-to-face	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Listening	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Assertive communication	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Advocacy	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Receiving constructive criticism	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Giving constructive criticism	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Do you believe you have made progress toward developing the professional characteristics listed below related to SELF-AWARENESS:

Patience	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Discipline	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Openness to new ideas	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Making and learning from mistakes	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Taking initiative	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Open to receiving feedback	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Asking for help	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Do you believe you have made progress toward developing the professional characteristics listed below related to CRITICAL THINKING:

Problem solving	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Finding solutions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Do you believe you have made progress toward developing the professional characteristics listed below related to LEADERSHIP:

Appropriately dealing with confrontation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Managing conflicts	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I) Please leave any additional comments below related to the topic of the development of professional characteristics within your pursuit of your doctoral degree in occupational therapy (or graduate occupational therapy education):