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Abstract

Occupational therapy (OT) educators have recognized the need to facilitate student professional development along a continuum of behavior that leads them toward professionalism. Reflection has often been a tool assisting in that process. The teaching of professional behavior has been a curricular thread throughout entry-level OT programs. Few studies exist, however, that have measured use of a self-assessment tool for reflection and development of professional behaviors. The purpose of this study was to examine how self-perception of professional behaviors changed in two cohorts of an entry-level occupational therapy program. Investigators compared two cohorts of students at two points in time for both longitudinal and cross-sectional differences. Participants demonstrated significant increase from Time 1 to Time 2 in a greater number of professional behaviors in the area of Fieldwork vs. Academics. Students demonstrated unequal growth in categories, suggesting that academic environments may prompt growth in different professional behaviors than do fieldwork environments. In comparing the two cohorts, the second-year cohort demonstrated significantly higher scores in clinical reasoning (at Time 1), communication, and responsibility and reliability (at Time 2). Qualitative data suggested that students perceived reflection as a valuable tool for observing improvement and goal-setting in professional behaviors. Investigators summarized that self-reflection prompted awareness of changes in professional behaviors among entry-level OT students. Authors recommend utilizing both quantitative and qualitative means of self-reflection, with individualized review with academic advisors, in order to facilitate growth in professional behaviors.

Keywords

Professional behaviors, self-assessment, reflection, professional development, occupational therapy

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ABSTRACT

Occupational therapy (OT) educators have recognized the need to facilitate student professional development along a continuum of behavior that leads them toward professionalism. Reflection has often been a tool assisting in that process. The teaching of professional behavior has been a curricular thread throughout entry-level OT programs. Few studies exist, however, that have measured use of a self-assessment tool for reflection and development of professional behaviors. The purpose of this study was to examine how self-perception of professional behaviors changed in two cohorts of an entry-level occupational therapy program. Investigators compared two cohorts of students at two points in time for both longitudinal and cross-sectional differences. Participants demonstrated significant increase from Time 1 to Time 2 in a greater number of professional behaviors in the area of Fieldwork vs. Academics. Students demonstrated unequal growth in categories, suggesting that academic environments may prompt growth in different professional behaviors than do fieldwork environments. In comparing the two cohorts, the second-year cohort demonstrated significantly higher scores in clinical reasoning (at Time 1), communication, and responsibility and reliability (at Time 2). Qualitative data suggested that students perceived reflection as a valuable tool for observing improvement and goal-setting in professional behaviors. Investigators summarized that self-reflection prompted awareness of changes in professional behaviors among entry-level OT students. Authors recommend utilizing both quantitative and qualitative means of self-reflection, with individualized review with academic advisors, in order to facilitate growth in professional behaviors.

INTRODUCTION

Teaching and learning of professional behaviors necessary for entry-level practice has been an area of interest for occupational therapy programs (Andonian, 2013; Garrett & Schkade, 1994). Authors disagree on which professional behaviors are key to becoming a practicing professional (Aguilar, Stupans, Scutter, & King, 2013; Campbell & Corpus, 2015; Hordichuk, Robinson, & Sullivan, 2015; Mackey, 2014; Mason & Mathieson, 2018; Van Mook et al., 2009). Literature regarding the teaching of professional behaviors includes incorporation into the curriculum (Jette & Portney, 2003; Tsoumas & Pelletier, 2007), teaching ethical behaviors (Lew, Cara, & Richardson, 2007; Monrouxe, Rees, Endacott, & Ternan, 2014), use of service learning (Anderson, Taylor, & Gahimer, 2014), interprofessional education (McNair, 2005); and discouraging negative behaviors (Ainsworth & Szauter, 2006; Krusen, 2015). Occupational therapy (OT) educators recognize the need to assist students to progress along a continuum of behavior that leads them toward professionalism. Reflection is often seen as a tool assisting in that process (Adam, Peters, & Chipchase, 2013; Anderson et al., 2014; Brown, Williams, & Etherington, 2016; Smith & Trede, 2013; Sonn & Vermeulen, 2018).

The teaching of professional behaviors is a curricular thread throughout the entry-level OT program. However, many emergent experiences and unplanned "teachable moments" contribute to the learning of professional behaviors (Monrouxe et al., 2014). Although educators cannot construct these opportunities, they can facilitate their occurrence and prompt student reflection on such moments as a way of assisting students to develop professional behaviors. The University of Indianapolis (UIndy) School of Occupational Therapy developed a tool for prompting self-reflection of professional behaviors in the entry-level program (Carroll et al., 2002). Few studies exist, however, measuring how use of a self-reflection tool contributes to the development of professional behaviors (Adam et al., 2013; Campbell & Corpus, 2015). Further, the authors were unable to find any studies comparing student self-reflections on academic vs. fieldwork professional behaviors using a self-assessment tool. By providing this comparison, this study brings to light which professional behaviors students perceive develop the most in the academic vs. fieldwork settings. More research is needed to examine professional behavior expectations and growth in professional behaviors in entry-level OT students (Campbell & Corpus, 2015).

The purpose of this study was to examine if self-perception of professional behaviors changed over time in an entry-level occupational therapy program. To address the purpose of the study, the investigators focused on the following objectives: (1) Comparison of mean scores on the Self-Assessment of Professional Behaviors Tool (UIndy SAPB) for all participants between first and second points in time (Time 1 and Time 2); (2) Comparison of mean scores on the SAPB between two cohorts of entry-level OT students at each point in time; (3) Comparison of significant results between academic and fieldwork portions of the UIndy SAPB; and (4) Analysis of a qualitative questionnaire regarding use of the UIndy SAPB for all participants at Time 2. Understanding which professional behaviors students perceive have developed through academic vs. fieldwork experiences will help OT academic and fieldwork educators target specific professional behaviors in specific settings. Results benefit occupational

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therapy academic educators by describing how educators can measure and facilitate growth of professional behaviors in entry-level occupational therapy students through use of a self-assessment tool. This study is also beneficial in informing design of future studies examining growth in professional behaviors.

METHOD

Ethics

This study was approved as Exempt by the UIndy Human Protections Administrator on February 19, 2016 (Study #0748).

Participant Recruitment

Investigators recruited participants by making verbal presentations to a second-year Master level cohort (MOT) and first-year Doctoral level cohort (OTD) during their respective regularly scheduled class sessions. This study took place at the time when the school was transitioning to a Doctoral level program; therefore, the cohorts had differing degree levels. The addition of requirements for the Doctoral Capstone Experience (DCE) and preparatory courses for the DCE in the OTD program were the only differences in curriculum between these two cohorts. Investigators distributed the Informed Consent Document to all students in the cohorts for their consideration and instructed students in how they could participate if they chose to do so. Additionally, investigators sent out reminder emails to all members of the cohorts to prompt participation. The second-year MOT cohort (n=54) consisted of 49 females and 5 males; one female student was non-white and the remainder were white. The first-year OTD cohort (n=52) had 50 females and 2 males, with two non-white females. All students were young adults aged 30 or younger at the time of entry to the occupational therapy program.

Procedures

All students in the two cohorts completed the UIndy SAPB as part of regular coursework that allowed students to score themselves on nine categories of professional behaviors (Carroll et al., 2002). Students scored themselves on each item for performance in both academic and fieldwork settings. The first-year cohort completed the UIndy SAPB at the end of the second semester, which included their first Level I Fieldwork experience, and again after their fourth semester and two more Level I Fieldwork experiences. The second-year cohort completed the UIndy SAPB at the end of the fourth semester and all Level I Fieldwork experiences, and again after their fifth semester and both Level II Fieldwork experiences. Time 2 required separate collection times due to fieldwork scheduling and cohort availability.

Students were given a four-week period during which they could submit their UIndy SAPB tool for participation in the study. Students who chose to participate submitted paper copies of their UIndy SAPB with their name redacted to an administrative assistant, who assigned them a participant number and kept a handwritten master list for the purpose of pairing first submissions with second submissions. At the second

administering of the UIndy SAPB, both cohorts responded to qualitative questions regarding their development of professional behaviors in response to using this tool.

Instruments

The UIndy SAPB was developed to prompt self-reflection on professional behaviors in various categories in both the academic and fieldwork settings. Categories included clinical reasoning, communication, responsibility and reliability, ethical work habits, caring, disposition, teamwork, time management, and response to supervision. Using the UIndy SAPB, students scored themselves on a rating scale from 1 (needs much improvement or no opportunity) to 7 (outstanding). Students scored each item in two categories: academic, and fieldwork. For example, under Communication, a student would score oneself on “Assertive Communication Skills” with the prompt, “Willing to verbalize dissenting opinions constructively to colleagues regardless of group size or dynamics” in regard to both academic behaviors and fieldwork behaviors. A student might score oneself as “4, average” in the classroom but “2, needs moderate improvement” on fieldwork. Investigators have demonstrated test-retest reliability on the UIndy SAPB tool (Carroll et al., 2002).

Students completed a qualitative questionnaire after submitting their UIndy SAPB at Time 2. The investigators developed this original questionnaire to obtain student responses regarding use of the UIndy SAPB in prompting reflection on professional behaviors and goal-setting. This questionnaire included four items for student response using a five-point rating scale ranging from 0 (strongly disagree) to 4 (strongly agree), and one open-ended question.

Intervention

The study intervention consisted of time in the entry-level occupational therapy program. Professionalism has been a core value and curricular thread for this occupational therapy program. Development of professional behaviors occurs within this curriculum through a course sequence of five related courses. These courses address professional issues, including professional development within the educational program and in preparation for fieldwork and practice. It should be noted that this 5 course series is the same for both the OTD and MOT groups with regards to course description, course content, learning activities and assignments. There are differences between the MOT and OTD curricula with regard to additional coursework for the OTD that is pertinent to the Doctoral Capstone Experience. However, both the MOT and OTD students completed the same series of Level I Fieldwork and Level II Fieldwork.

The first course in the professional practice series focuses on the core values of the profession and the corresponding professional behaviors that are expected for an occupational therapy practitioner. Examples of course content in this first course include ethics, professional standards, appropriate communication, and the roles and responsibilities of the occupational therapy practitioner. Students are encouraged to become a reflective practitioner who regularly self-assesses his or her performance, learning needs and professional skills. Students are introduced to the UIndy SAPB during this first course, and explanation is provided that this tool fosters self-assessment

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followed by self-identification of appropriate professional development goals for themselves. Self-assessment using the UIndy SAPB then becomes an ongoing process for each semester. Each of the five courses continues to provide instruction on professional roles and responsibilities, such as written and verbal communication, interdisciplinary collaboration, skills for fieldwork, and preparation for practice. Students are held accountable to participate in the professional development process by classroom assignments that are integrated within the professional development program. Each student is assigned a faculty advisor during the first semester, and this professional relationship is continued throughout the program. Students are required to meet with his or her advisor a minimum of two times each semester. The student completes the UIndy SAPB and reflects on the areas that are of concern. The advisor reviews the lower scored items from the self-assessment and any other academic or professional concerns that have arisen. The student comes to the advising meeting prepared to discuss his or her self-reflection and preliminary professional goals that relate to the academic setting and for the fieldwork setting, if applicable. Advising also includes discussion of grades and supports or strategies to facilitate successful learning both in the classroom and on fieldwork. During this verbal reflection with his or her advisor, the student solidifies his or her individualized professional development goals and strategies.

Data Analysis

Investigators completed checks of data integrity through frequencies and counts. Cronbach's Alpha was employed as a test for internal consistency, to determine if groupings by category could be analyzed together, and if the score of the entire tool could be analyzed as a whole. Only question groupings that were internally consistent were compared in the final analysis.

Methodology included a related-groups repeated measure design comparing a combination of two cohorts at two points in time (Time 1 and Time 2); and an independent-groups cross-sectional comparison at a single point in time (OTD compared to MOT at Time 1), for the purpose of assessing differences in UIndy SAPB scores. The dependent variable was significant change in scores on the professional development self-reflection tool; the independent variable included time in the entry-level occupational therapy program (academic and fieldwork). Investigators completed Kolmogorov-Smirnov and Shapiro-Wilk tests for normality. Since the data were nonparametric, and due to the small sample size, the Wilcoxon Signed Rank Test was applied to compare all participants' scores between Time 1 and Time 2. The Mann-Whitney U Test was employed to compare OTD and MOT at Time 1 and Time 2. For comparison of significant results between academic and fieldwork portions of the UIndy SAPB, investigators created change score variables by subtracting Time 1 scores from Time 2 scores for each variable. Investigators then compared academic and fieldwork change scores using the Wilcoxon Signed Rank Test.

Results of the qualitative questionnaire were compiled with counts and percentages. Open-ended comments responding to the question, *What are your overall impressions of use of the Self-Assessment Tool for self-reflection and development of professional behaviors?* were grouped by topic.

RESULTS

Participants

Twenty-two participants from the first-year cohort (OTD) and seven from the second-year cohort (MOT) participated in the study. Eleven participants (50%) from OTD and three participants (43%) from MOT were lost to follow-up due to not voluntarily submitting their completed UIndy SAPB at Time 2. Totals for the combined cohorts were 29 students for the first round of data collection (Time 1, April 2016), and 15 students for the second round (Time 2, December 2016/January 2017).

Comparison of Mean Scores on UIndy SAPB between First and Second Time Points

Twenty-nine participants from the two cohorts completed the instrument at Time 1. Missing data were pre-treated by using the average of other values in the category (two values were corrected; values missing were most likely due to student omission when completing the instrument). After correction, 100% of data were present. No data were missing from the 15 participants at Time 2 data collection. With Kolmogorov-Smirnov and Shapiro-Wilk tests for normality, the majority of the data were nonparametric, which is common for ordinal data (Kenton, 2017). Nonparametric tests were therefore used going forward. Post-hoc G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) indicated that with a Wilcoxon-Mann-Whitney (two groups) test, and an effect size set at 0.72 (large, determined by G*Power calculation based on results), alpha error probability of 0.05, and sample size of 22 and 7 respectively for groups, power was 0.350; and with a two-tailed matched pairs test, an effect size of 0.72 (large), alpha error probability of 0.05, and sample of 15, power was 0.465. Therefore, the results from the small sample size were likely to suggest retention of a false null hypothesis (Type II error).

Investigators compared median scores of the entire sample between Time 1 and Time 2. Individual cohorts could not be analyzed due to insufficient participants. Sixteen out of 37 items in the Academic category demonstrated significant change from Time 1 to Time 2, and two other items trended toward significance. Twenty-four items demonstrated a statistically significant change in scores from Time 1 to Time 2 in the Fieldwork category (see Table 1).

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Table 1

Wilcoxon Signed Rank Test for Comparing Significant Items By Category: Academic and Fieldwork Comparison Time 1 to Time 2 (n=15)

Academic Items	Time 1 Median (IQR*)	Time 2 Median (IQR)	Significance (p< .05)	Fieldwork Items	Time 1 Median (IQR)	Time 2 Median (IQR)	Significance (p< .05)
Clinical Reasoning							
Problem Solving	5(2)	6(1)	.012	Problem Solving	4(1)	5(1)	.044
Judgment	4(2)	5(1)	.031	Judgment	4(2)	5(1)	.005
				Use of Knowledge and Resources	4(2)	5(1)	.017
Competency	5(2)	6(1)	.009	Competency	4(1)	5(1)	.015
Disciplined Creativity	5(2)	6(1)	.008	Disciplined Creativity	4(2)	5(1)	.007
Communication							
Written Communication	5(2)	6(1)	.004				
Verbal Communication	5(2)	5(1)	.007	Verbal Communication	5(1)	5(1)	.008
Assertive Communication	4(1)	5(1)	.005	Assertive Communication	4(2)	5(1)	.001
Active Listening	6(1)	6(0)	.025	Active Listening	5(1)	6(1)	.038
Conflict Resolution	4(1)	6(0)	.014	Conflict Resolution	5(1)	6(1)	.007
Responsibility and Reliability							
				Initiative	6(1)	7(1)	.021
Accountability	6(1)	6(1)	.013				
				Independence	4(3)	6(1)	.003
				Leadership	4(1)	5(1)	.005
Ethical Work Habits							
				Confidentiality	6(1)	7(1)	.059
				Respect	6(1)	6(1)	.039
				Equal Treatment of Others	6(0)	6(1)	.024

Caring							
Establishing Rapport	6(1)	6(1)	.035				
Patience	6(1)	6(0)	.034	Patience	5(2)	6(0)	.018
Listening, Considering Feelings	6(1)	6(1)	.033				
Disposition							
				Utilization of Humor	5(1)	6(0)	.008
				Therapeutic Use of Self	4(2)	6(1)	.005
				Confidence in Abilities	4(1)	5(1)	.038
Teamwork							
				Cooperation with Others	5(1)	6(0)	.026
				Active Decision Making	5(2)	6(1)	.018
				Promoting others' Decision Making	4(3)	6(1)	.023
Time Management							
Organizational Skills	6(1)	6(1)	.034				
Response to Supervision							
				Assuming Responsibility for Own Behavior	6(2)	6(1)	.016
Accepting Feedback	6(1)	6(0)	.034	Accepting Feedback	6(1)	6(1)	.016
Discussing Concerns	5(1)	6(0)	.021				
*IQR = Interquartile Range							

Not all question groupings could be analyzed. Only those question groupings that demonstrated internal consistency (i.e., demonstrated that all the items within the question grouping measured the same construct and produced similar scores, determined by Cronbach's Alpha) were analyzed. The following categories demonstrated internal consistency for within-group analysis between Time 1 and Time 2: Academic - Ethical Work Habits; Caring; Disposition; Time Management; and Response to Supervision; Fieldwork - Communication; Responsibility and Reliability; Ethical Work Habits; Teamwork; Time Management; Response to Supervision; and Total All Fieldwork (37 items). The following categories demonstrated internal

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consistency for between-groups analysis at Time 1: Academic - Clinical Reasoning; Communication; Responsibility and Reliability; Ethical Work Habits; Caring; Disposition; Time Management; Response to Supervision; Total All Academic; Fieldwork - Communication; Responsibility and Reliability; Ethical Work Habits; Teamwork; Time Management; Response to Supervision; and Total All Fieldwork (37 items). With the smaller sample size at Time 2, no question groupings demonstrated internal consistency.

When the questions were grouped into categories, nine of 13 categories demonstrated a statistically significant change in scores from Time 1 to Time 2 (see Table 2). Of particular interest was that the totals for Academic and Fieldwork portions of the tool demonstrated a significant change in scores from Time 1 to Time 2.

Table 2

Wilcoxon Signed Rank for Question Groupings for Comparison of Time 1 and Time 2 (n=15)

Item	Time 1 Median(IQR*)	Time 2 Median(IQR)	Significance (p< .05)
Academic ethical work habits	26(2)	26(4)	**.029**
Academic caring	23(4)	24(3)	**.007**
Academic disposition	20(5)	22(3)	.137
Academic time management	17(3)	18(1)	.060
Academic response to supervision	18(1)	18(1)	**.016**
Academic Total	192(29)	209(16)	**.002**
Fieldwork communication	23(6)	27(7)	**.002**
Fieldwork Responsibility and Reliability	26(5)	29(3)	**.002**
Fieldwork Ethical Work Habits	25(3)	26(4)	**.009**
Fieldwork Teamwork	24(2)	24(2)	1.00
Fieldwork Time Management	16(5)	16(5)	.145
Fieldwork Response to Supervision	17(4)	18(1)	**.012**
Fieldwork Total	179(38)	207(31)	**.003**

*IQR = Interquartile Range

Comparison of Mean Scores on the UIndy SAPB between Two Cohorts of Entry-level OT Students at Each Time Point

Investigators compared mean scores on the UIndy SAPB between the two cohorts (MOT and OTD) at Time 1. Results of the Academic portion of the tool indicated that only two items were statistically significantly different between the two cohorts. These included Academic *clinical reasoning,* "judgment," and Academic *clinical reasoning*, "use of knowledge and resources." Results of the Fieldwork portion of the tool also indicated statistical significance with only two items: Fieldwork *clinical reasoning*, "judgment," and Fieldwork *clinical reasoning*, "competency" (see Table 3). No question groupings demonstrated statistically significant differences between the MOT and OTD cohorts at Time 1.

Table 3

Significant Items By Category: Comparison of MOT and OTD at Time 1 (Mann-Whitney U test; n=29)

Academic Items	**OTD18 Cohort Median (IQR*) (n=22)**	**MOT16 Cohort Median (IQR) (n=7)**	**Significance (p< .05)**	**Fieldwork Items**	**OTD18 Cohort Median (IQR*) (n=22)**	**MOT16 Cohort Median (IQR) (n=7)**	**Significance (p< .05)**
Clinical Reasoning							
Judgment	4.00 (1.75)	5.50 (1.00)	.006	Judgment	3.00 (1.00)	4.00 (1.00)	.030
Use of Knowledge and Resources	5.00 (1.00)	6.00 (1.00)	.011				
				Competency	4.00 (0.00)	5.00 (0.00)	.018
*IQR = Interquartile Range							

Investigators also completed the Mann Whitney U Test for comparing mean scores on the UIndy SAPB between the two cohorts at Time 2. The only significant results when comparing MOT to OTD were “assertive communication skills” (.026); and *responsibility and reliability*, “accountability,” both in the Academic category (see Table 4). Results must be interpreted with caution due to small sample size.

Table 4

Significant Items By Category: Comparison of MOT and OTD at Time 2 (Mann-Whitney U Test; n=15)

Academic Items	**OTD18 Cohort Median (IQR*) (n=11)**	**MOT16 Cohort Median (IQR) (n=4)**	**Significance (p< .05)**
Communication			
Assertive Communication Skills	5.00(2.00)	6.50(1.00)	.006
Responsibility and Reliability			
Accountability	6.00(1.00)	7.00(0.00)	.040
*IQR = Interquartile Range			

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Comparison of Significant Results between Academic and Fieldwork Portions of the UIndy SAPB

There was a statistically significant difference between the change scores for Academic and Fieldwork settings on eight items (see Table 5). Seven of these items showed greater change in the Fieldwork setting.

Table 5

Comparison of Academic and Fieldwork Change Scores with Wilcoxon Signed Rank Test

Item	Academic Change (n=15) Median (IQR*)	Fieldwork Change (n=15) Median(IQR)	Significance (p< .05)	Category with Greater Change
Clinical Reasoning				
Judgment	1(2)	2(3)	**.020**	Fieldwork
Disciplined Creativity	1(1)	2(3)	**.054**	Fieldwork
Responsibility and Reliability				
Independence	0(0)	1(2)	**.005**	Fieldwork
Leadership	0(1)	1(2)	**.020**	Fieldwork
Disposition				
Utilization of Humor	0(2)	0(1)	**.008**	Academic
Therapeutic Use of Self	1(1)	1(2)	**.035**	Fieldwork
Teamwork				
Cooperation with Others	0(1)	1(1)	.066	Fieldwork
Promoting Active Participation in Decision-Making	0(1)	1(2)	.070	Fieldwork

*IQR = Interquartile Range

Side-by-side comparison of individual items from Time 1 to Time 2 indicated that categories where students perceived significant growth occurred were not always the same in the academic and fieldwork settings (see Tables 1 and 2). The categories of *clinical reasoning*, *communication*, and *response to supervision* showed significant growth fairly equally between categories. However, students perceived growth in professional behaviors unequally in the other 6 categories on the UIndy SAPB. For example, the *responsibility and reliability* grouping demonstrated improvement in *independence*, *initiative*, and *leadership* for fieldwork**;** and improvement in *accountability* for the academic setting**.** *Ethical work habits* demonstrated growth in three categories in fieldwork but not in the academic environment. Conversely, the academic setting demonstrated significant perceived growth in *caring* (three areas for academic vs. one area for fieldwork) and *time management* (one area for academic vs. none for fieldwork). Overall, in side-by-side comparison, students demonstrated greater growth in fieldwork (24 categories) vs. academics (16 categories) from Time 1 to Time 2.

Analysis of Qualitative Questionnaire Data for All Participants at Time 2

Nine students from the OTD cohort and four students from the MOT cohort returned a qualitative questionnaire. Rating scale response counts are included in Table 6. Responses were grouped into positive comments and negative comments regarding impressions of using the UIndy SAPB, and were further grouped by topic. These responses may be seen in Figures 1 and 2.

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Table 6

Questionnaire Responses to Rating Scale Questions: Numbers and Percentages

	Student Responses					
Question	4 Strongly Agree n(%)		3 Agree n(%)		2 Unsure/ Neutral n(%)	
	OTD (n=9)	MOT (n=4)	OTD (n=9)	MOT (n=4)	OTD (n=9)	MOT (n=4)
1. Use of the Self-Assessment Tool prompted me to reflect on my own professional behavior.	4(44.4)	2(50)	5(55.5)	2(50)	0(0)	0(0)
2. Reflection on my results from the Self-Assessment Tool caused me to understand strengths and weaknesses of my own professional behavior.	5(55.5)	3(75)	3(33.3)	1(25)	1(11)	0(0)
3. Reflection on my results from the Self-Assessment Tool caused me to set goals for improving my professional behaviors.	4(44.4)	0(0)	5(55.5)	3(75)	0(0)	1(25)
4. Reflection on my results from the Self-Assessment Tool caused me to work on changing my professional behaviors.	4(44.4)	0(0)	4(44.4)	4(100)	1(11)	0(0)

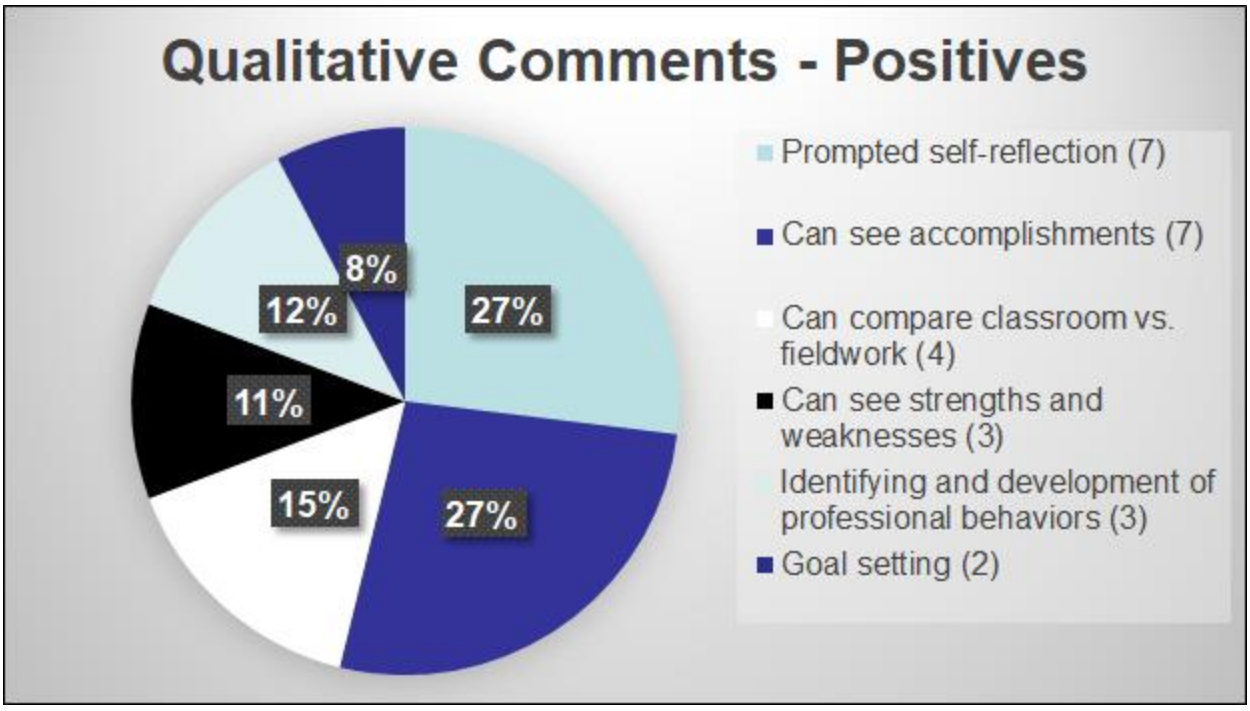

Figure 1. Qualitative comments – positives.

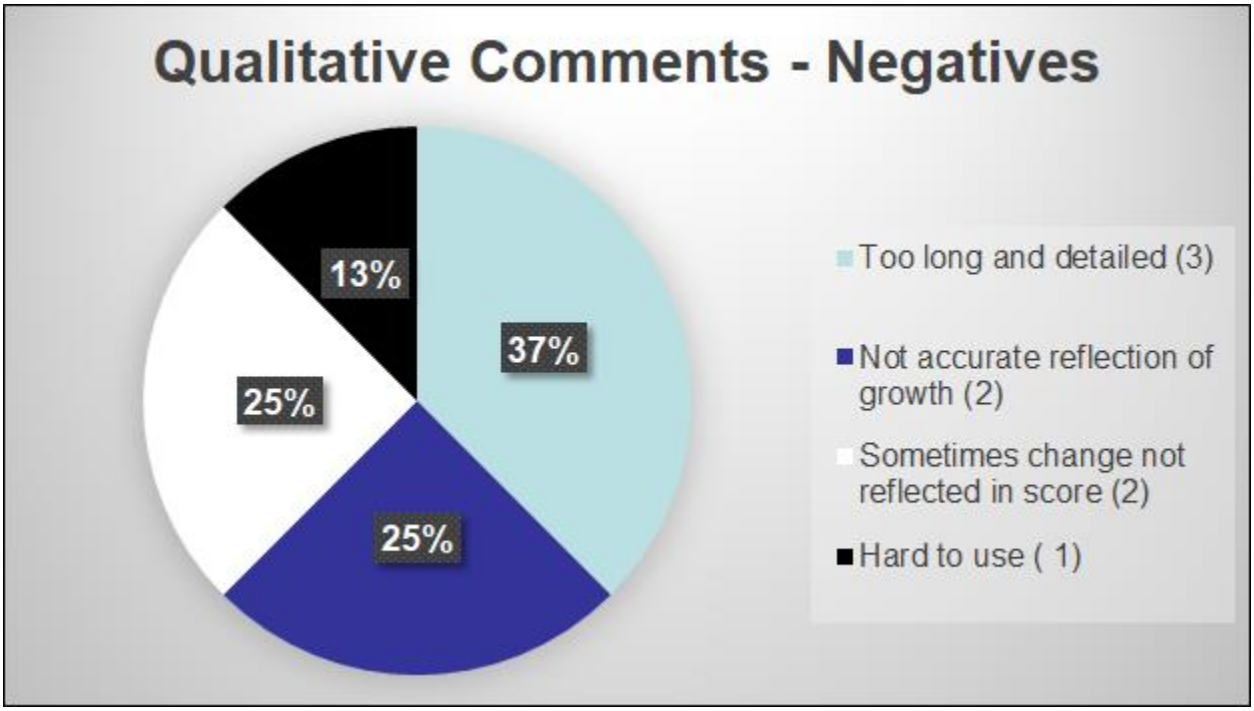

Figure 2. Qualitative comments – negatives.

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DISCUSSION

The purpose of this study was to examine if self-perception of professional behaviors changed within the first and second years of an entry-level occupational therapy program, with objectives of (1) Comparison of mean scores on the UIndy SAPB for all participants between first and second points in time (Time 1 and Time 2); (2) Comparison of mean scores on the UIndy SAPB between two cohorts of entry-level OT students at each point in time; (3) Comparison of significant results between academic and fieldwork portions of the UIndy SAPB; and (4) Analysis of qualitative questionnaire data for all participants at Time 2.. The data provided insight into how students perceived their own growth in professional behaviors over time.

When the data were combined from both entry-level cohorts, students demonstrated improvement in self-perception of professional behaviors over time. Improvement was demonstrated through significant change from Time 1 to Time 2 on individual items (see Table 1), item groupings (see Table 2), and on the tool as a whole. When examining item groupings for significance, comparing all participants at Time 1 and Time 2, almost all question groupings demonstrated significant improvement in mean scores. Results suggested that time, and the experiences in that time, prompted development of professional behaviors (as perceived by the students). In addition to the item groupings, results from comparing the means of the total of all items in both academic and fieldwork areas demonstrated significant increase for all participants from Time 1 to Time 2. Results indicated that students demonstrated general perceived growth in professional behaviors in this 8-month period. A factor that most likely influenced the students' growth in the fieldwork area was that the OTD students experienced Level 1 fieldwork for the first time; and MOT students completed both Level 2 Fieldwork experiences during those 8 months. Fieldwork puts behaviors in a real-world context where students can see growth and receive affirmation for appropriate professional behaviors.

There were very few statistically significant differences between the two cohorts at either point in time. The categories that demonstrated statistically significant growth from the first year cohort to the second year cohort at Time 1 were *clinical reasoning* - judgment, use of knowledge and resources, and competency. In particular, the more advanced cohort rated themselves significantly higher in competency on fieldwork, suggesting growth in confidence regarding clinical skills. It would be logical to expect an increase in these items in a second year cohort, as one would hope that exposure to the clinical setting would stimulate growth in both clinical reasoning and clinical competency. At Time 2, the cohorts were now in their second and third years respectively. At that point in time, the statistically significant growth from one cohort to the next were in assertive communication skills, use of knowledge and resources, and responsibility and reliability - accountability, all in the academic setting. It is important to note that, due to the small sample size at Time 2, results must be interpreted with caution.

Both statistical change score comparison (see Table 5) and side-by-side comparison of significant results between academic and fieldwork portions of the UIndy SAPB (see Table 1) indicated that students perceived greater growth in professional behaviors in the fieldwork setting. Although small sample size may have insufficiently powered statistical analysis, side-by-side comparison yielded additional insights which may be helpful to educators seeking to understand which settings promote growth in certain categories of professional behaviors. Analysis of change scores indicated that two items in *clinical reasoning* ("judgment" and "disciplined creativity") exhibited statistically significantly greater change in the fieldwork setting. Similarly, two items in *responsibility and reliability* demonstrated greater change in fieldwork ("independence" and "leadership"). Side-by-side comparison suggested that perhaps students perceived themselves as ethical in the academic (familiar) environment, but with room for growth in *ethical behavior* when in the fieldwork environment. Similarly, significant growth occurred in the *disposition* and *teamwork* categories for fieldwork, but not in the academic environment. Change score comparison supported this observation (see Table 5), with significantly greater change in the fieldwork setting on one item in *disposition* ("therapeutic use of self"); and two items in *teamwork* trended toward significance ("cooperation with others" and "promoting active participation in decision-making"). However, side-by-side comparison supported that students perceived more growth opportunities for *caring* and *time management* in the academic setting rather than on fieldwork. Additionally, one item in *disposition*, "utilization of humor", demonstrated significantly greater change in the academic setting.

With more significant items in the fieldwork setting than academic, results indicated that students perceived fieldwork prompted greater growth in professional behaviors than did the academic setting, possibly due to real-world experience. Sonn and Vermeulen (2018) also found that fieldwork experiences prompted growth in professionalism, in the area of cultural competence. These authors speculated that exposure, reflection, and attitude accounted for such growth. Although confounding variables limit the ability to link fieldwork exposure directly to growth in professional behaviors, the active-reflective cycle of exposure, reflection, and action may be beneficial. An untested confounding variable was that students have had significant academic exposure (four years or more) at the point at which they were exposed to fieldwork. The fieldwork experience may have prompted greater growth by exposing the student to novel experiences.

Occupational therapy academic and fieldwork educators can capitalize on these active-reflective opportunities by being aware of which settings facilitate which areas of growth, encouraging students to be mindful and set goals for growth opportunities in these specific areas, and having students journal achievement of specific behavioral goals attained. This study suggested that educators may want to focus more in the fieldwork setting on *clinical reasoning, responsibility and reliability, ethical work habits, disposition, teamwork,* and *response to supervision*. In the academic setting, educators may wish to focus *on clinical reasoning, responsibility and reliability, communication, caring, time management*, and *disposition*. Since greater growth in professional behaviors takes place in fieldwork, educators may wish to focus their strongest efforts on developing professional behaviors toward that setting, without neglecting growth

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opportunities for professional behaviors in the academic setting. However, due to the small sample size, further research is indicated to confirm these results.

Qualitative findings indicated that all but a very few students felt the tool prompted reflection, understanding of personal strengths and weaknesses, goal setting, comparison of behavior in academic and fieldwork settings, and work on changing professional behaviors. Open-ended responses suggested that students saw value in reflection, and that the UIndy SAPB helped them reflect on growth and progress in professional behaviors. However, students felt the tool was long, wordy, and tedious, and perhaps repeated too frequently in the curriculum (twice per semester).

This study was limited by the small number of students from each cohort that elected to participate, and by significant attrition from Time 1 to Time 2. Investigators speculated that, despite requiring students to complete the UIndy SAPB for a professional development summary class assignment, perhaps students were completing the summary without completing the UIndy SAPB. Implications for education and research would include reducing the frequency of completion of the UIndy SAPB to once per semester, and requiring submission of the actual tool rather than a written summary of the results. This method would also allow for more consistent data collection for future studies.

Using a self-assessment tool to measure professional behaviors, coupled with regular meetings with an academic advisor, can be a way to correct problem behaviors before they become detrimental to clinical practice on Level II Fieldwork (O'Loughlin, Bello-Haas, & Milidonis, 2005; Van Luijk, Smeets, Smits, Wolfhagen, & Perquin, 2000). Discussion of self-assessment results in advising meetings has prompted reflection, allowed the advisor to discuss perceived growth and perceived problem areas in the student, prompted discussion of what might facilitate growth for the individual, and facilitated measurable goal setting. The faculty in the university where this study took place debated whether students should score themselves on the tool without looking at previous scores first, or should rank themselves with the previous ranking visible. In either case, requiring students to compare current to previous scores has facilitated reflection on growth. Currently, the faculty have opted to allow students to select the method of reflection that they feel works best for themselves, in order to facilitate a formative growth experience. Thus, a combination of quantitative (UIndy SAPB) and qualitative (discussion with advisor) means were employed to facilitate growth in this study. Results suggest that growth in professional behaviors occurred when these means were used in tandem with entry-level OT students.

Implications for future research include completing the study over a longer period of time, and at several points in time; and completing the study retrospectively, to facilitate gathering more data with less attrition. Furthermore, the UIndy SAPB was validated in 2002 (Carroll et al., 2002); research to create and validate a second edition of the tool would be warranted, to update the tool for contemporary needs. Research comparing traditional-aged students with nontraditional students might yield interesting results regarding growth and development of professional behaviors. Finally, occupational

therapy as a profession needs a validated tool that can be used to assess professional behaviors and prompt reflection in students across all entry-level OT programs in both the academic and fieldwork environments (Denton, Fike, Walk, & Jackson, 2017; Furgal, Norris, Young, & Wallman, 2018; Hubbard, Beck, Stutz-Tanenbaum, & Battaglia, 2007).

Limitations

Small sample size yielded an inadequately powered study; therefore, Type 2 errors were possible. The population and sample were not diverse demographically, and the study occurred at one Midwestern university; these facts limit generalizability of the results. The study population consisted of two cohorts with differing degree levels, though the curricula were essentially similar, which may have impacted the results. The UIndy SAPB tool has not been recently validated and the qualitative questionnaire was not validated.

CONCLUSION

The purpose of this study was to examine if self-perception of professional behaviors changed over time in an entry-level occupational therapy program. Investigators compared mean scores between two points in time, and between cohorts at each point in time. Between Time 1 and Time 2, students demonstrated perceived growth in individual behavioral items, categorical groupings, and total items on the tool. Between the two cohorts, the second-year cohort demonstrated significantly higher scores in items of clinical reasoning (at Time 1), communication, and responsibility and reliability (at Time 2). Investigators also compared change in academic vs. fieldwork settings. Participants demonstrated significant increase in a greater number of professional behaviors in fieldwork setting vs. academic setting. Finally, investigators analyzed findings of a qualitative questionnaire. Qualitative data suggested that students perceived reflection as a valuable tool for observing improvement and goal-setting in professional behaviors. Investigators found that self-reflection prompted awareness of changes in professional behaviors among entry-level OT students. Results suggested that targeted attention to specific areas of growth in the academic and fieldwork settings is warranted. Investigators recommend utilizing both quantitative and qualitative means of self-reflection with entry-level students, with individualized review with academic advisors, in order to facilitate growth in professional behaviors.

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