

Civic-mindedness Development Throughout a Physical Therapy Curriculum

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ABSTRACT

Graduate professional programs seek to foster professionalism and civic-mindedness in their students. This study measures the development of civic-mindedness throughout a graduate physical therapy (PT) program curriculum committed to community engagement. Three class cohorts completed the Civic-Minded Professional (CMP) Scale at four time points. Scores increased throughout the curriculum. Participants involved in community service leadership had the highest scores. A professional program that allows for community engagement throughout the curriculum will encourage student development of civic-mindedness.

Keywords: civic engagement, community engagement, health professions, professional development, professionalism

INTRODUCTION

Widener University is located in Chester, Pennsylvania, which lies just outside of Philadelphia. The median household income of Chester is \$27,217, with 36.9% of residents living in poverty (U.S. Census). Graduate physical therapy (PT) students in the Widener University Institute for Physical Therapy Education (IPTE) are involved in extensive community engagement in Chester through service learning (SL) across the entire three-year PT curriculum (Figure 1). Community engagement is an intentional commitment on the part of academic programs to civic engagement and social responsibility, to positively impact both students and community (Watson, Hollister, Stroud, & Babcock, 2011). SL is a powerful educational tool that can be used to develop civic-mindedness in students

that will carry forward into their professional lives. Properly constructed SL develops clinical skills, and may also support elements of professionalism and civic engagement (Seifer, 1998). It is important for graduate professional programs to consider the impact of community engagement on the development of professionalism.



BACKGROUND/LITERATURE REVIEW

Professional graduate education programs seek to move students toward the goals of their professions that extend beyond competency and toward professional practice. PT is one field that requires professional graduate education. Physical therapists evaluate and diagnose the human movement system across the lifespan to promote optimal development; physical therapists diagnose and provide interventions to prevent or address physical impair-

Figure 1.
Schematic of IPTE Curriculum

	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Year 1												
Year 2												
Year 3												

Key:

-  Didactic Curriculum
-  Clinical Experiences

ments, activity limitations, and participation restrictions (APTA, 2013). The American Physical Therapy Association (APTA) has adopted core values that describe professionalism in the field of PT (APTA, 2010). These core values are accountability, altruism, compassion/caring, excellence, integrity, professional duty, and social responsibility (APTA, 2010). SL activities can assist in the development of the core values. SL projects cause increases in core values (Crandell, Wiegand, & Brosky, 2013; Wise & Yuen, 2010; Gazsi & Oriel, 2010), cultural competency (Denton, Esparza, Fike, Gonzalez, & Denton, 2016), and foster curricular integration (Gazsi & Oriel, 2010).

SL programs should be meaningful to both students and community partners (Village, 2006). Meaningful SL includes community engagement, which can incorporate various elements including regular volunteering (Village, 2006). Well-designed SL programs account for the impact of the program on both student learning and community members, and include elements such as debriefing and reflection (Village, 2006; Kelly & Miller, 2008). Brosky, Deprey, Hopp, and Maher (2006) reported on a variety of PT community engagement activities that were planned in concert with community partners. This resulted in both community partners and stu-

dents valuing the interaction, with students feeling their learning needs were served and community partners feeling appreciated, and that the constituents' needs were met (Brosky et al., 2006).

Entry-level PT education programs widely use a variety of experiential learning activities, including SL to practice their clinical skills (Smith & Crocker, 2017). As a result, much is known about the impact of SL related to learning outcomes. Students report that service in a PT pro bono clinic improves communication, clinical competence, and confidence on their first, full-time clinical experience (Porretta, Black, Palombaro, & Erdman, 2017). SL can decrease students' self-reported anxiety (Nordon-Craft et al., 2017), increase confidence in performing skills (Nordon-Craft et al., 2017), and increase perceptions of responsibility and autonomy (Bostick, Hall, & Miciak, 2014). Clinical reasoning skills (Seif et al., 2014), as well as interprofessional perceptions, attitudes, and learning (Seif et al., 2014; Buff et al., 2015), also improve.

SL fosters civic commitment through developing civic knowledge, skills, and identity. Civic knowledge is discipline-specific knowledge that defines a good citizen (Hatcher, 2011); physical therapists can view the APTA core values as guidelines

for civic knowledge. Civic skills are the ability to organize, communicate, engage in collective decisions, and think critically—all skills that can be found in graduate professional programs (Kirlin, 2003). Civic identity occurs when people are fully engaged community members using their skills collaboratively to better society (Hatcher, 2011). Graduate professional programs should develop alumni with strong civic identity.

Effective SL yields civically engaged citizens (Village, 2006), thus civic-mindedness may be one end result of the development of professionalism. Civic-mindedness is one's knowledge of and/or involvement in the community, and a commitment to acting on responsibility toward that community (Bringle & Steinberg, 2010). Hansen et al. (2007) argue that meaningful SL can connect students with a commitment to civic engagement and social responsibility throughout their professional lives. Civic-mindedness development and expression through SL have been described in undergraduate alumni (Hahn, 2016), biology (Sanders & Hirsch, 2014), and business students (Snell, Chan, Ma, & Chan, 2015). More relevant to graduate professional education is SL and service-oriented literature concerning physicians (Gruen, Campbell, & Blumenthal, 2006), occupational therapy (Hansen et al., 2007), a college of health professions (Ghaddar, Ronnau, Saladin, & Martinez, 2013), and PT (Palombaro et al., 2017). A lack of consistency exists regarding measurement of civic-mindedness across these studies. Three papers used quantitative surveys. Hahn (2016) used the Civic Minded Graduate Survey, a quantitative survey developed for use in undergraduates, and Palombaro et al. (2017) used the Civic Minded Professional Survey (CMP), the counterpart to the Civic Minded Graduate Survey that is designed for use in graduate students and professionals, on a small pilot sample of graduate PT students. Gruen et al. (2006) used a survey specific to physicians. Qualitative analyses were used to assess growth in civic

mindedness in two studies (Snell et al., 2015; Sanders & Hirsch, 2014). Two articles could best be classified as position statements with respect to civic mindedness (Hansen et al., 2007; Ghaddar et al., 2013). It remains relatively unknown, however, whether consistent exposure to SL throughout an academic graduate professional program increases civic-mindedness.

The purposes of this study are to 1) determine if civic-mindedness and its components increase throughout an intensive service-learning graduate PT education program, 2) determine if any differences exist between males and females with respect to civic-mindedness, and 3) determine if students who engage in leadership positions within civic engagement programming exhibit greater increases in civic-mindedness.

METHODS

Setting

Students at the IPTE participate in consistent community engagement that is imbedded in the curriculum throughout the entire year. Engagement is comprised of both single-day and long-term programming (Lattanzi, Campbell, Dole, & Palombaro, 2011; Palombaro, Black, & Campbell, 2014; Pierce, Palombaro, & Black, 2016; Pierce, Palombaro, & Black, 2014). All students provide pro bono PT services under the supervision of Pennsylvania-licensed physical therapists at the Chester Community PT Clinic (Clinic) (Black, Palombaro, & Dole, 2013; Palombaro, Dole, & Lattanzi, 2011a, 2011b). All students begin serving in the Clinic within a month of starting the program. Students typically serve in the Clinic three or four nights each semester as well as in the summer; the Clinic is only closed for two weeks in August and two weeks at Winter Break. Some students interview and are selected for leadership positions on the Student Board of the Clinic, which oversees all aspects of Clinic operations. Students not serving on the Student Board are assigned to Community Health Practicum sites in Chester where

they provide weekly physical activity programming; all students attend their Community Health Practicum site three times each semester from the fall of their first year through the fall of their third year (Palombaro, Lattanzi, & Dole, 2010). There are several consistent single-day events in the IPTE curriculum. Geriatric community screens occur in the fall of the first year (Palombaro et al., 2014). The annual MLK Day of Service blood pressure screening and mobility device repair and cleaning is held in January of the first and second year of the curriculum (Lattanzi, Campbell, Dole, & Palombaro, 2011). Brain safety fairs, which culminate in the fitting and provision of bicycle helmets, occur in June of the second year (Pierce, Palombaro, & Black, 2016; Pierce, Palombaro, & Black, 2014). Student Board members serve approximately 60 hours a year in the Clinic, 30 hours a year of Student Board-related work outside of the Clinic, and an additional five hours a year of single-day event time. Those students not serving on the Student Board serve approximately 34 hours a year in the Clinic, six hours a year at their Community Health Practicum site, three hours a year in Community Health Practicum site-related meetings, and an additional five hours of single-day event time. Because the IPTE curriculum is lockstep, all students take the same SL courses. Thus, the minimum number of hours of SL-related activities is set at 45 hours per year for those who are not Student Board members.

Participants

Participants were members of three cohorts of graduate PT students at the IPTE. All were part of a three-year curriculum that graduated between the years 2016-2018 and completed the didactic portion of the curriculum in fall 2015, 2016, or 2017. One hundred and fifty students were included in the initial sample; 20 students left the program during the course of their studies, 16 students had missing CMP survey data. There were 114 participants with complete

data analyzed. One student did not provide demographic data. Forty-nine students identified as male and 64 identified as female. The majority of the participants included in the final analysis (102) identified as Caucasian, four students were African American, five were Asian/Pacific Islander, and two were Hispanic/Latino. The mean age upon entering the program was 22.8 (3.1) years. Thirty-five students had served on the Student Board of the pro bono clinic; of these students, 12 were males and 23 were females.

Instrumentation

Students completed the civic-minded professional scale (CMP), which is a survey that assesses three domains: 1) self-identity; 2) work, career, and profession; and 3) civic attitudes, civic action, and public purpose to measure the construct of civic-mindedness (Hatcher, 2008; Richard, Keen, Hatcher, & Pease, 2016). The CMP is 23, 7-point Likert-scale survey questions; the survey is reported as reliable (Cronbach's alpha = .74-.93) and having concurrent (Pillai's Trace (10,358) = .30, $p < .01$; Pillai's Trace (28,1444) = .29, $p < .01$) and convergent validity ($r = .28-.69$, $p \leq .01$) (Hatcher, 2008; Richard et al., 2016). Total scores range from 23 to 161. The survey has five subscales: Voluntary Action, which relates to volunteer activity; Identity and Calling, which measures satisfaction and work identity; Citizenship, which measures participation in civic events; Social Trustee, which relates to valuing of education and professional expertise; and Consensus Building, which measures working with individuals from diverse backgrounds (Hatcher, 2008; Richard et al., 2016).

Survey Methodology

The Institutional Review Board at Widener University approved this research project. All students were provided with a letter of informed consent at each point in the data collection and reminded that they could opt out at any time. Students partici-

pating completed the CMP at the beginning of their first professional year of study and at the end of the first, second, and final years of the didactic portion of the PT curriculum.

Students who opted in to the research study were provided with a unique identifying code known only to one researcher (JDB). This code was placed on the front of each survey at each data collection point. Surveys for each student were placed into an envelope with the student’s name on the envelope. Students removed their survey from the envelope and returned their survey only to another researcher (KMP) for input into a database. At the initial point of data collection, students also completed basic demographic information of age, sex, race, and year of graduation.

Data Analysis

Data were analyzed using SPSS version 23. The alpha level was set at .05. Incomplete cases were handled through listwise deletion. Descriptive statistics were performed on demographic data and on the CMP and subscale scores for each data collection point. A chi-square analysis was performed to determine if the number of males versus females serving on the Student Board approximated the expected count. Friedman’s ANOVAs with Wilcoxon

Signed Ranks post-hoc tests were performed on the CMP and its subscales to determine if there were within-group differences for each time point. Mann-Whitney U tests were performed on CMP data to determine if between-group differences existed for males versus females and Student Board versus non-Student Board members. Effect sizes were calculated for all statistically significant results using the formula for Cohen’s d ($d = \frac{X1 - X2}{sp}$) in order to interpret the importance of significant results (Cohen, 1988). Cohen’s d values $\leq .20$ should be interpreted as small effect sizes, values $\geq .30$ and $\leq .70$ are medium effect sizes, and values $\geq .80$ are large effect sizes (Cohen, 1988).

RESULTS

The sample experienced increases in their CMP scores throughout the curriculum. A Friedman’s ANOVA with post-hoc testing revealed significant increases in the overall CMP score across the curriculum (Table 1). Friedman’s ANOVAs with post-hoc testing also revealed significant increases in all CMP subscales from the beginning to the end of the curriculum (Table 1). Effect sizes ranged from small to large; the majority of significant comparisons had medium effect sizes (Table 2).

Table 1
Pre- and Post-tests Means and Standard Deviations of the CMP Scale and Subscales

n=114	Pre-test	Post-test Year 1	Post-test Year 2	Post-test Year 3
CMP Total	121.3 (12.8)	120.6 (15.4)	125.8 (13.8)*#	130.7 (12.8)*#; i
Voluntary Action	24.7 (6.2)	24.8 (6.2)	25.5 (6.0)	27.4 (5.8)*# ;
Identity and Calling	30.1 (3.3)	30.2 (3.3)	31.1 (3.1)*#	31.8 (2.6)*# ;
Citizenship	15.7 (4.1)	16.1 (4.7)	17.2 (5.0)*#	18.6 (3.9)*# ;
Social Trustee	24.0 (2.8)*	23.2 (3.8)	24.5 (3.2)#	25.0 (2.9)*#
Consensus Building	23.1 (2.5)	22.9 (3.0)	23.7 (2.3)*#	24.0 (2.5)*# ;

* significantly different from pre-test $p \leq .05$
 # significantly different from post-test year 1 $p \leq .05$
 ; significantly different from post-test year 2 $p \leq .05$

Table 2
Effect sizes for Pre-test Post-test Comparisons

n=114	Pre-test to Post-test Year 1	Pre-test to Post-test Year 2	Pre-test to Post-test Year 3	Post-test Years 1 and 2	Post-test Years 1 and 3	Post-test Years 2 and 3
CMP Total	-	.33	.73	.36	.71	.37
Voluntary Action	-	-	.44	-	.43	.32
Identity and Calling	-	.31	.57	.28	.54	.24
Citizenship	-	.33	.72	.23	.59	.31
Social Trustee	.24	-	.35	.37	.53	-
Consensus Building	-	.25	.35	.30	.40	.12

Mann-Whitney U revealed some significant between-group differences in males versus females. Females had higher CMP scores and Voluntary Action and Social Trustee subscale scores at each post-test. Effect sizes ranged from small to medium (Table 3).

There were some significant differences on the CMP and its subscales between those students who had served on the Student Board of the pro bono clinic and those who had not (Table 4). Chi-square analysis for sex distribution within the Student Board was insignificant. Student board members had significantly higher scores on the CMP at the pre-test and post-test years 2 and 3. Student Board members scored significantly higher at all time points on the

Voluntary Action subscale with medium effect sizes. At post-test year 1, Student Board members had significantly higher scores on the Social Trustee subscale with a medium effect size; non-Student Board members experienced a decrease in scores in this area. Student Board members had significantly higher scores on the Citizenship subscale at post-test year 3, with a small effect size.

DISCUSSION

The first purpose of this study was to determine if civic-mindedness and its components increase throughout an intensive SL graduate PT education program. The results indicated significant overall in-

Table 3
Means, Standard Deviations, and Effect Sizes for Males Versus Females

n=113	Pre-test		Post-test Year 1			Post-test Year 2			Post-test Year 3		
	M	F	M	F	d	M	F	d	M	F	d
CMP Total	120.5 (12.6)	121.6 (13.0)	116.6 (16.4)	123.4* (13.8)	.45	122.5 (14.2)	128.0* (13.1)	.40	126.4 (14.2)	133.7* (10.8)	.58
Voluntary Action	23.8 (6.5)	25.2 (5.9)	23.1 (6.2)	25.9* (5.9)	.46	24.1 (6.3)	26.3* (5.5)	.37	25.9 (6.5)	28.4* (4.8)	.44
Identity and Calling	30.1 (3.5)	30.2 (3.1)	29.8 (3.9)	30.4 (2.9)	-	30.6 (3.4)	31.5 (2.8)	-	31.2 (2.8)	32.1 (2.4)	-
Citizenship	16.4 (4.3)	15.1 (3.8)	16.4 (4.9)	15.7 (4.7)	-	17.8 (5.0)	16.7 (4.9)	-	18.4 (4.3)	18.7 (3.5)	-
Social Trustee	23.9 (3.0)	24.1 (2.8)	22.1 (4.7)	24.1* (2.8)	.52	23.7 (3.8)	25.1* (2.6)	.43	24.1 (3.5)	25.6* (2.1)	.52
Consensus Building	23.1 (2.1)	23.0 (2.9)	22.3 (3.3)	23.3 (2.5)	-	23.4 (2.0)	23.8 (2.4)	-	23.6 (2.6)	24.3 (2.4)	-

*significant between group difference $p \leq .05$

Table 4
Means, Standard Deviations, and Effect Sizes of the CMP Scale and Subscales by Student Board Status

n=114	Pre-test			Post-test Year 1			Post-test Year 2			Post-test Year 3		
	Y	N	d	Y	N	d	Y	N	d	Y	N	d
Student Board Status												
CMP Total	124.9* (11.2)	119.7 (13.2)	.43	124.8* (12.2)	118.8 (16.3)	-	129.7* (12.6)	124.0 (14.1)	.43	134.9* (10.4)	128.8 (13.4)	.51
Voluntary Action	26.9* (5.9)	23.7 (6.1)	.53	27.0* (6.1)	23.8 (6.0)	.53	27.9* (5.1)	24.4 (6.1)	.62	29.9* (4.7)	26.3 (5.9)	.67
Identity and Calling	30.4 (2.7)	30.0 (3.5)	-	30.6 (2.6)	30.0 (3.6)	-	31.3 (2.8)	31.0 (3.2)	-	26.3 (5.9)	31.6 (2.9)	-
Citizenship	16.6 (4.0)	15.4 (4.1)	-	16.2 (4.8)	16.0 (4.6)	-	18.2 (5.0)	16.8 (4.9)	-	19.3* (4.2)	18.3 (3.8)	.25
Social	24.7 (2.1)	23.7 (3.1)	-	24.5* (2.6)	22.6 (4.1)	.55	25.3 (2.4)	24.1 (3.5)	-	25.7 (1.8)	24.6 (3.2)	-
Trustee Consensus Building	23.0 (2.5)	23.1 (2.6)	-	23.3 (2.4)	22.8 (3.1)	-	23.5 (2.2)	23.7 (2.3)	-	24.0 (2.7)	24.0 (2.4)	-

*significantly different from non-student board members $p \leq .05$

creases across the curriculum on the CMP and its subscales, demonstrating the impact of consistent community engagement on civic-mindedness throughout the three-year curriculum. Consistent increases on all subscales were responsible for the overall increases in the CMP total score throughout the curriculum. The largest effect sizes seen between the pre-test and the year 3 post-test indicate a cumulative impact of a curriculum centered on SL. While it is possible that students who are attracted to a graduate-level curriculum with an intensive SL component would experience increases in civic-mindedness, research indicates that prior service experience and levels of civic-mindedness at the beginning of a curriculum do not influence increases in civic-mindedness (Cruce & Moore, 2012). Rather, the SL experiences appear to be the driving force in increasing these scores and are evidence of an increase in professionalism. This is only the second study specifically examining the development of civic-mindedness in students in any health care professional program, and could serve as a foundation for studies in other health care disciplines or across PT programs.

These results indicate that thoughtfully planned SL can increase measures of civic-mindedness in students. Courses with an SL component increase civic-mindedness scores to a greater extent than identical courses without this component (Weiler et al., 2013). SL coursework positively impacts measures of civic responsibility, (Fenzel & Peyrot, 2005; Moely & Ilustre, 2013) with consistently higher measures occurring years after course completion (Moely & Ilustre, 2013). Participation in SL or community engagement significantly increases participation in community organizations and attitudes toward social justice and political engagement, and results in a greater number of persons employed in service fields (Moely & Ilustre, 2013). The consistent community engagement imbedded in the IPTE curriculum—which connect to the field of PT, carefully consider the needs of the community, and are at minimum 45 hours of direct service—may explain the increases. High-quality SL, with greater than 10 hours of service, is shown to result in greater increases in civic-mindedness and civic engagement post graduation (Moely & Ilustre, 2013).

One can view the IPTE curriculum as working to move students from stages three through five of the civic-minded development steps described by Johnson (2017). The extensive civic engagement in the curriculum may foster civic-mindedness through the deepening of PT-specific knowledge; improving self-efficacy through regular reflection; and upon reaching entry-level competency at graduation, by integrating civic identity and reconciling this with their professional plans (Johnson, 2017). One key component of programs such as a doctorate in PT is the development of professionalism, of which civic-mindedness is a component. As students build on their skill set while simultaneously engaging in regular SL, they experience growth in civic-mindedness (Johnson, 2017). The construct of civic-mindedness is deeply imbedded within the core values of the PT profession. SL can influence the integration of these core values. SL simultaneously develops professional skills through connecting professional education with hands-on practice and fosters professionalism and its components such as civic-mindedness.

One key element to SL as well as to the PT profession is reflection (Jensen, Gwyer, & Shepard, 2000; Mitchell et al., 2015; Shepard & Jensen, 1990; Smith & Trede, 2013). Indeed, the development of PT expert practice is moving from a space of “reflection on action” to “reflection in action” whereby practitioners are adjusting based on feedback in the moment (Jensen et al., 2000; Shepard & Jensen, 1990). One might view the truly civic-minded professional to be an individual who is able to integrate complex information from a community context and make appropriate adjustments to serve that community effectively. This is a movement from honing professional skills and knowledge to being able to act on ethical and moral issues that these skills can address (Colby & Damon, 2010). This reflection serves as a feed-forward loop that increases motivation to support civic action (Mitchell et al., 2015). In other words, reflective practice that de-

velops knowledge for clinical decision making in PT parallels reflective practice in the development of civic-mindedness. The reflective practice developed through SL that fosters civic-mindedness may also provide an acceleration of the transition through the early portion of novice practice (Poretta et al., 2017).

The second purpose of this study was to determine if any differences exist between males and females with respect to civic-mindedness. While there were no sex-based differences upon commencement of the IPTE curriculum, differences emerged at the year 1 post-test on the CMP total score, and the Voluntary Action and Social Trustee subscales. These differences persisted through year 3 with medium effect sizes. The Voluntary Action subscale is related to volunteering and the Social Trustee subscale relates to valuing of education and professional expertise. The scores increased for both sexes throughout the curriculum, but females responded to a greater degree to consistent community engagement. Most research examining sex-based differences examine initial differences between males and females, whereas the present study’s findings demonstrate a greater impact in females in response to SL. Research demonstrates that females consistently have more positive attitudes related to SL than males and are more likely to engage in SL courses (Celio, Durlak, & Dymnicki, 2011; Moely, Mercer, Ilustre, Miron, & McFarland, 2002; Vogelgesang & Astin, 2000; Astin & Sax, 1998). In our study, chi-square analysis demonstrated that males and females were represented on the Student Board in a distribution that was expected given the number of males and females included in the study. This is an indication that the additional service hours required by Student Board service were similarly valued by male and female students. PT is a helping profession, and this may lend itself to students beginning the program with similar levels of civic-mindedness regardless of gender. However, the SL coursework at the IPTE is contained

in a lock-step curriculum; all students are required to take the courses. In the absence of requiring the SL courses, research suggests that females would likely enroll in the SL coursework in greater numbers. It may be that the act of service itself influences sex-based differences and that SL enhances civic-mindedness in a greater degree to those who would be more receptive to this style of course. The female students may have valued the volunteer experience (Voluntary Action subscale), and made a greater connection between the SL courses and their professional development (Social Trustee subscale). However, the PT profession desires physical therapists that embody the core values, regardless of gender. Graduate PT programs wish to graduate students with professionalism and the civic-mindedness needed to advocate for patients and the health of society. Future research could examine male versus female SL course evaluations to determine if there are sex-based differences in course ratings and identify specific areas male students are consistently rating lower. Faculty members teaching SL courses could use this information to develop classroom strategies that address these areas and see if this decreases or eliminates the civic-mindedness gap between male and female students.

The third purpose of this study was to determine if students who engage in leadership positions within civic engagement programming exhibit greater increases in civic-mindedness. In this study, students who elected to serve on the Student Board began the program with higher scores on the CMP and on the Voluntary Action subscale. These differences persisted throughout the program, with Student Board members demonstrating significantly higher scores at each time point. Given that civic-mindedness is one aspect of professionalism and the Voluntary Action subscale relates to volunteer activity, it may be that students electing to serve on the Student Board already exhibit higher levels of professionalism and APTA core values. These students may also hold more positive views

of volunteerism, which could factor into the decision to hold a position with a greater yearly commitment of community engagement hours than is served by their non-Student Board peers. At the year 3 post-test, Student Board members had significantly higher scores on the Citizenship subscale; however, the effect size was small. Examining the means and standard deviations at each time point, non-members' standard deviations were smaller at the final post-test, which could have impacted the significant difference. The small effect size minimizes the true significance of this finding. The results of this study add to the body of research on factors that impact electing into SL courses. Future research should focus on assessing civic-mindedness in general and the values of the profession for which the graduate students are preparing. In the case of PT students, the Professionalism in Physical Therapy: Core Values Self-Assessment Survey could be used to place CMP scores within the larger context of PT professional core values (APTA, 2009).

Leadership is one characteristic of professionalism. Students become civic-minded leaders within the context of SL courses (Davis, Kliever, & Nicolaidis, 2015). Developing civic-mindedness may have an impact upon leadership qualities; greater civic-mindedness may translate into being civic leaders. While students who served on the Student Board had significantly higher CMP and Voluntary Action subscale scores from the outset, the difference between the scores increased between the pre-test and year 3 post-test. Those with higher initial civic-mindedness who select leadership positions within an SL context may have that leadership further developed as the result of the SL. Thus, students who assume leadership positions within SL may naturally move further along the civic-mindedness continuum. Research demonstrates that undergraduate SL courses are significantly associated with a civic-minded orientation in alumni; however, a stronger association exists between a civic-minded orientation and increasing leadership re-

sponsibilities throughout the undergraduate years (Richard et al., 2016). Student Board members also assume increasing responsibility, and they have increasing opportunities to attend and present at local and national conferences. Future research examining the impact of various SL activities on leadership development in both members and non-members of the Student Board could create a better understanding of this relationship.

There are several limitations to this study. The first is that students may overestimate their abilities early on in their academic programs, and are more accurate in self-assessment as they move toward program completion (Musolino, 2006; Palombaro & Lattanzi, 2012). It is possible that significant changes in civic-mindedness were missed, particularly between the pre-test and post-test of year 1 as a result of this. Because the first full-time clinical experience occurred between the post-test of year 2 and the post-test of year 3 (Figure 1), it cannot be said with complete certainty that the didactic portion of the curriculum, which included continuous community engagement was solely responsible for the increases on the CMP. Additionally, students who experienced greater gains than others in their cohort may well have had experiences outside of the IPTE, which led to these changes. However, the authors believe that this is a step forward in measuring the connection between civic engagement in the context of a graduate PT program and the development of civic-mindedness. Another limitation is the relatively recent development of the CMP tool. The CMP is only in early use and thus, published literature using this tool is limited (Richard et al., 2016; Palombaro et al., 2017). A final limitation is that this research includes only cohorts from one graduate PT program. Future research to determine if civic-mindedness develops in students who are not engaged in SL, as well as investigating students at graduate PT programs in other institutions and geographic locations.

CONCLUSION

SL can develop civic-mindedness that supports students in their professional lives. Civic-mindedness is intimately tied to the values of professionalism. Graduate professional programs should seek to develop SL opportunities that connect knowledge and skill acquisition with the development of professional values.

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