RESEARCH

Investigating Student Pharmacist Perceptions of Professional Engagement Using a Modified Delphi Process

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Objective. To develop a definition of professional engagement, a list of professionally engaging and disengaging activities, and characteristics of those activities.

Methods. A 2-round modified Delphi process was conducted using student pharmacists. The first round captured input while the second assessed agreement using a 5-point Likert scale.

Results. A definition was created using the 3 items that reached consensus. All engaging characteristics reached consensus, and 25% (3/12) of the disengaging characteristics reached consensus. Lower rates of consensus were observed for activities, with 78% (7/9) of the professionally engaging and none of the disengaging activities reaching consensus.

Conclusion. The findings of this study have implications for creating professionally engaging learning experiences for student pharmacists and suggest that ensuring activities contain certain professionally engaging characteristics may be more important than the activities themselves.

Keywords: professional engagement, work engagement, academic engagement, student perceptions, Delphi technique

INTRODUCTION

Professions need engaged individuals actively serving their profession in their daily activities, individuals whose ebullient nature creates an *esprit de corps* under which the profession prospers. Pharmacy is no exception to this need. Engaged professionals can influence and exert leadership,¹ and pharmacy is in desperate need of leadership.² In a time of change for the profession and healthcare delivery, engaged pharmacists are needed now more than ever. The multifaceted and multidimensional construct of engagement has been explored extensively; however, engagement in a profession has not been well investigated.

Significant research conducted in the fields of work engagement and academic engagement may provide insight into professional engagement. The Q¹² instrument, a 12-question measure of work engagement, has shown

a strong correlation between employee engagement and business unit performance.^{3,4} Engagement has been correlated with increased customer loyalty and productivity and decreased turnover, safety incidents, absenteeism, shrinkage, patient safety incidents, and quality defects.³ Engagement levels of practicing health professionals have been measured using work engagement scales.⁵⁻¹² In 1 study, higher levels of engagement among medical residents were associated with fewer errors.⁵ Additional investigations have suggested that work engagement is tied to the efficiency of a professional.¹³ In essence, work engagement leads to improved outcomes in workers, including those in the health professions.

Work in the field of academic engagement has yielded similar results. Increasing student engagement has been suggested as a means of minimizing apathy, thus improving learning.¹⁴ The results of a study that measured students' previous and future academic performance suggested that engagement is important for future performance.¹⁵ Further data have correlated student engagement with self-reported academic performance¹⁶ and actual outcomes, including improved academic achievement and lower attrition rates.^{14,17} Using engagement as a predictor of outcomes and performance is the premise behind the National Survey of Student Engagement

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(NSSE). The NSSE is used by academic institutions across the nation to assess level of academic challenge, active and collaborative learning, student interactions with faculty members, enriching educational experiences, and supportive campus environment.^{18,19} Although the power of the NSSE to predict outcomes has been challenged,²⁰ academic outcomes are positively related to engagement in educationally purposeful activities as measured by the NSSE.²¹ The NSSE has also been used among health professional students to evaluate student engagement.²²

Additional research gauging student pharmacists' engagement is focused in the areas of curriculum and community engagement. Student pharmacists' engagement in curricular content has been improved by using different pedagogies.²³⁻²⁷ Community engagement can include activities such as community service, service learning, and other methods of using institutional resources to solve community problems or challenges.²⁸ Several publications address service learning in the curriculum.²⁹⁻³⁴

As with work and academic engagement, higher levels of professional engagement may result in increased levels of satisfaction and performance in and on behalf of a profession. Student pharmacists have roles as both learners and professionals, making professional engagement vital to this group. Academic engagement plays a role in their studies, and work engagement plays a role in their work experiences. The professional engagement of student pharmacists may be important to their development as professionals and may be predicative of their engagement in and positive contributions to the profession throughout their careers. While there may be multiple paths to professional engagement, it seems intuitive to start on a path as early as possible, beginning as students.

Literature on professional engagement is lacking. A definition of and a model describing professional engagement could not be found. Additionally, no studies could be found describing student pharmacists' perceptions of professional engagement or how they become or do not become professionally engaged. Research is needed to define and describe professional engagement and provide a foundation for future research to measure, influence, or predict professional engagement. The goal of the current research was to develop a definition of professional engagement, a list of activities that professionally engage student pharmacists, and the characteristics that make those activities professionally engaging.

METHODS

This work was designed to capture feedback from a group of students perceived to be professionally engaged and to begin developing a construct for professional engagement. A Delphi process was used. The Delphi

process is a methodology that allows expert opinion to be obtained through a systematic design when little is known about a topic.³⁵⁻³⁸ During the first round of a Delphi process, qualitative data are gathered from the participants, and qualitative analysis is performed by the researchers to inform development of the subsequent rounds.³⁶ Throughout subsequent rounds, data gathered from the first round are presented to the participants to obtain feedback and measure agreement or disagreement.³⁵⁻³⁷

There is no consensus in the literature regarding the optimal number of subjects needed for a Delphi panel.³⁵ Delbecq and colleagues suggested that 10 to 15 subjects is sufficient if they are homogenous.³⁸ Witkin and Altschult note that a Delphi panel is generally under 50 members.³⁹ In practice, there is extensive variation in the number of experts used.³⁶ The issue of panel size is closely related to concerns for representative samples. Powell asserts that the Delphi process does not require a random sample and that the qualities of the panel members are more important than the number of individuals on the panel.³⁶ For the current study, a panel size of more than 20 and less than 50 was deemed appropriate. This range was selected in part because of the diversity of opinion regarding optimal panel size but also because this study's inclusion criteria selected for professionally engaged students representing different types of organizations and roles.

Agreement of participants is used to determine consensus; however, there are no definitive guidelines for the desired level of consensus in a Delphi process,³⁶ and there is a wide range of definitions for consensus in the literature.³⁶ Typically, agreement is no lower than 55% and potentially up to 100%.³⁶ The definition of consensus chosen for the current study was a minimum of 75% agree or strongly agree with an item.

This study was approved by the University of Minnesota Institutional Review Board. Student pharmacists from the University of Minnesota-College of Pharmacy classes of 2011, 2012, and 2013 were invited to participate in the study as "engagement experts" if they met at least 2 of the following 3 criteria: (1) enrollment in the Leadership Emphasis Area at the University of Minnesota-College of Pharmacy⁴⁰; (2) member of Phi Lambda Sigma (a leadership fraternity for pharmacy) or Rho Chi (an academic honor society in pharmacy); and (3) election or appointment to a position of leadership within a student pharmacist organization for the 2009-2010 or 2010-2011 academic year. Individuals who met these criteria were those who had taken on additional curricular or extra-curricular responsibilities, shown academic excellence in their acceptance into an academic honor society, and demonstrated leadership among their peers.

The 93 individuals who met the above criteria were invited to participate in a Web-based modified 2-round Delphi process. E-mail correspondence that included a link to the survey instrument was sent to eligible individuals. Round 1 included a modified version of the definition of engagement used by the Utrecht Work Engagement Scale group.⁴¹ Participants were asked what they would keep, change, add, or remove from this definition to create a definition of professional engagement. They were also asked to list activities in which they considered themselves to be professionally engaged or professionally disengaged. Finally, participants were asked to list the characteristics of those activities that led to their engagement or disengagement. These data were reviewed by the authors for themes and categorized prior to the second round.

Individuals who responded to the first round were eligible to participate in the second round, which assessed participants' agreement with components of a refined definition, characteristics, and activities identified during the first round. Participants rated items on a 5-point Likert-scale on which 1=strongly disagree and 5= strongly agree. Demographic data were also gathered in the second round. Following round 2, characteristics and activities reaching consensus were grouped into domains.

RESULTS

Thirty-four subjects elected to participate in the first round, producing a panel size within the target range. Based on responses gathered in the first round, 6 changes, 5 clarifications, and 9 additions to the definition were proposed. Further, 11 categories of characteristics of professionally engaging activities, 12 categories of characteristics of professionally disengaging activities, 9 categories of professionally engaging activities, and 7 categories of professionally disengaging activities were identified.

The second round had a response rate of 79.4% (27/34). Respondents were divided between the 2 campuses (44% Twin Cities, 56% Duluth) and were primarily from the class of 2011 (56%), followed by the class of 2012 (30%). The gender of respondents, 59% female and 41% male, paralleled that of the demographics of pharmacy colleges and schools nationally.⁴²

Consensus was achieved for 15% (3/20) of the proposed revisions to the definition. Two of the 9 additions to the definition reached consensus (29%), and 1 of the 5 clarifications reached consensus (20%). These additions reflect the slightly different nature of professional engagement compared with work engagement. The added items included advancing the profession, continual learning, and keeping up with the profession of pharmacy. The clarification was that engagement requires individuals to be tuned in to what is going on around them. Using the consensus items, the definition of professional engagement was updated (Table 1).

Consensus was achieved for 100% (11/11) of the proposed characteristics of engagement, and 25% (3/12) of the proposed characteristics of disengagement. The professionally engaging characteristics were grouped into the 4 main domains: perceptions, relationships, modeling, and altruism (Table 2). The professionally disengaging characteristics were also grouped into 4 domains: incongruence, negativity, dishonor, and indifference (Table 3). Participants reached consensus on 78% (7/9) of the categories of activities that were professionally engaging (Table 4) but did not reach consensus for any disengaging activities (Table 5). The engaging activities included 3 domains (learning, development, and involvement), and the disengaging activities included 2 main domains (learning and extracurricular experiences).

DISCUSSION

Professional engagement is a concept that has not been explored extensively but could be incredibly important

Table 1. Definitions of Professional Engagement

Initial Definition	Engagement is a positive fulfilling state of mind that is characterized by vigor, dedication, and absorption. It is a persistent and pervasive affective-cognitive state, where: Vigor = high energy and mental resilience, Dedication = strongly involved in one's work with a sense of significance, enthusiasm, inspiration, pride and challenge, and Absorption = fully concentrated and happily engrossed in one's work. ⁴¹
Student-Pharmacist Consensus Definition	Professional engagement is an energizing state of mind characterized by vigor, dedication, and focus. It requires continual learning and keeping up with the profession of pharmacy, and a desire to advance the profession. It is a persistent and pervasive affective-cognitive state, where: Vigor = high energy and mental resilience, Dedication = strongly involved in one's profession with a sense of significance, enthusiasm, inspiration, pride, and challenge, and Absorption = fully concentrated, in tune to what is going on around one and happily engrossed in one's profession.

Table 2. Characteristics Present or Experienced a Majority of the Time During Professional Engagement

Domain	Characteristics	Agreement, % ^a
Perceptions	Positive feelings about pharmacy	100
	Feelings that you are growing in your knowledge and skills	100
	Feelings that you are growing as a person	100
Relationships	Relationships within the profession	100
	Relationships with patients	96
	Relationships with other professionals	85
Modeling	Representing the profession	96
	Performing as a professional	96
	Role model displaying model behavior	85
Altruism	Helping others	93
	Doing something to advance the profession	93

^a Consensus (75% or more agreeing or strongly agreeing) was achieved for all items.

to the profession of pharmacy as well as to the development of student pharmacists. Other constructs of engagement, including work engagement and academic engagement, have clear definitions, developed measurement instruments,

Table 3. Characteristics Present or Experienced the Majority of the Time During Professional Disengagement

Domain	Characteristics	Agreement, %
Incongruence	Lack of connection to pharmacy	74
	Lack of benefit for profession	63
	Lack of benefit for self	56
Negativity	Colleagues with negative attitudes	85 ^a
	Role models with negative attitudes	78 ^a
	Negative feelings about the profession	59
Dishonor	Improper use of pharmacists	78 ^a
	Disrespect from other professionals	67
	Lack of autonomy/voice	59
Indifference	Passive learning	67
	Monotony	67
	Boredom	63

^a Consensus (75% or more agreeing or strongly agreeing) was achieved

Table 4. Professionally Engaging Activities

Domain	Activity	Agreement, %
Learning	Practice-based learning	81 ^a
	Active learning in the classroom	75 ^a
	Service learning	47
Development	Lecture-based learning	31
	Professional development	100 ^a
	College of pharmacy and organizational involvement	91 ^a
Involvement	Professional involvement	88 ^a
	Community service	88 ^a
	Providing patient care	88 ^a

^a Consensus (75% or more agreeing or strongly agreeing) was achieved.

and associated outcomes. Higher levels of engagement at work and school have been correlated with enhanced outcomes, such as productivity, personal satisfaction, scholastic achievement, and others. Additionally, professional engagement could be an indicator for several desirable endpoints, such as service orientation or patient centeredness. Considering that student pharmacists represent the future of the profession of pharmacy, levels of professional engagement in this group may be an indicator for the quality of graduating students and may parallel professional engagement in practicing pharmacists.

Using a previously established definition of work engagement,⁴¹ student pharmacists developed additions, changes, and clarifications that would transform the definition into 1 that represented professional engagement to them. Through these revisions, a consensus definition was formed. The revised definition reflects the differences between work engagement and professional engagement, as recognized by student pharmacists. The changes to the definition “doing something to advance the profession” and “feeling that you are growing in your knowledge and

Table 5. Professionally Disengaging Activities

Domain	Activity	Agreement, % ^a
Learning	Service learning	38
	Lecture-based learning	38
	Classroom based exercises	13
Extracurricular Experiences	Repetitive/technical real-world pharmacy experiences	38
	College of pharmacy meetings	22
	Non-pharmacy related activities	3
	Community service	0

^a Consensus (75% or more agreeing or strongly agreeing) was not achieved for any items.

skills” are consistent with the characteristics of professionally engaging activities identified by participants. This consistency suggests that the participants examined their engagement and proposed changes based on characteristics that they had experienced. Many of the suggested additions reflect the characteristics of a profession and professional as outlined in the White Paper on Pharmacy Student Professionalism. These include a service orientation; a guild of those entitled to practice the profession; an ideology professed by members; an ethic that is binding to practitioners; knowledge and skills of a profession; commitment to self-improvement of knowledge and skills; pride in the profession; and leadership.⁴³ Few of the suggested revisions reached consensus, indicating that they may not be important factors in defining professional engagement. Another possible explanation is that some suggested revisions were not clear or had not yet been experienced by the participants because of their early career stage. For these reasons, it would be helpful to engage practicing pharmacists, faculty members, and potentially other groups in examining the definition.

Engagement has been shown to be malleable,^{3,14} suggesting that it may be possible to improve low professional engagement. Guideline 10.2 of the 2007 Accreditation Council for Pharmacy Education (ACPE) standards and guidelines states that the curriculum should “use proven teaching and learning methodologies and the introduction and evaluation of innovations to promote optimal learning,” and guideline 11.4 states that “colleges and schools are encouraged to experiment in the design and delivery of the curriculum.”⁴⁴ The results of this study combined with these standards and guidelines provide an impetus to focus on engagement and to innovate within our programs to foster the development of professional engagement. In this work, neither lecture-based learning nor service learning reached consensus as a professionally engaging activity. For our institution, this finding suggests that these activities may need improvement to further engage students professionally. Higher levels of engagement have been linked to learning outcomes¹⁴⁻¹⁷; thus, innovations that enhance professional engagement should support the development of optimal learning.

Some activities may be, by their nature, more professionally engaging than others. Lecture-based learning and active learning in the classroom are both curriculum-required experiences; however, consensus for active learning but not lecture-based learning was achieved. This finding is consistent with Guideline 11.2 of the ACPE accreditation standards, which suggests that active learning should be used by faculty members and preceptors.⁴⁴ As learning activities are selected, their ability to influence professional engagement also should

be assessed. It is important to consider not only the maximization of learning outcomes but the achievement of professional engagement as well.

The characteristics of an activity may be more important than the activities themselves, as a greater percentage of characteristics than activities reached consensus. All of the proposed characteristics of professional engagement reached consensus, and 25% (3/12) of the characteristics of professional disengagement reached consensus; however, only 78% (7/9) of the activities reached consensus as professionally engaging, and no activities reached consensus as disengaging. In addition, some activities, such as community service, lecture-based learning, service learning, and organizational/college or school of pharmacy involvement, were reported as both professionally engaging and disengaging activities. The presence of activities as both engaging and disengaging suggests that some students participated in those activities without experiencing the characteristics that created engagement. It may be possible to influence the level of engagement experienced by an activity through emphasis of engaging characteristics and minimization of disengaging characteristics. Creating activities with positive perceptions, relationships, modeling, and opportunities for altruism could aid in the achievement of professional engagement.

The importance of design is highlighted when examining the consensus status of different activities. Service learning and practice-based learning are both components of curriculum-required learning that take place outside of the classroom. Consensus was achieved for practice-based learning but not service learning, a difference that could be attributable to the characteristics of the examples provided. In this study, service-learning activities were those in which student pharmacists interacted with community members without close professional oversight, whereas practice-based learning entailed experiential learning under close professional oversight by a pharmacist preceptor guided by predetermined professional objectives. For a majority of respondents, experiential education activities may have possessed characteristics that made the activity professionally engaging, such as interactions with a motivated pharmacist preceptor. This type of interaction is supported by guideline 14.1 of the ACPE accreditation standards, which suggests that preceptors should have significant interactions with students.⁴⁴ In a survey of volunteer pharmacy preceptors, most felt that spending more time with the student achieved a higher-quality experience.⁴⁵ These interactions, or the type of behavior this role model provides, may play a strong role in the characteristics that make practice-based learning professionally engaging.

Whether an activity is professionally engaging depends not only on the activity and its characteristics but, to some degree, on the individual participating in the activity as well. Weaker consensus on activities may reflect individual response differences, preferences, and/or attitudes. The importance of the individual was addressed by 1 participant who stated, "Activities can be designed in any manner, but the individual is engaged or disengaged by their own accord." Reinforcing the importance of personal attitude, another participant stated, "You get out what you put into any activity. . . disengaged activities should not really exist if a professionally engaged individual sees every activity as an opportunity for not only professional but also personal growth."

This study is limited in scope. It asks and answers fundamental questions required to define and describe professional engagement. The study does not, for instance, assess whether there is a correlation between professional engagement as a student and professional engagement as a pharmacist, and it does not examine possible predictors of professional engagement. Although defining and describing professional engagement were necessary steps toward developing a theoretical model to explain professional engagement in student pharmacists, additional questions remain and will need to be undertaken with future research. The inclusion criteria were another limitation of this study. Although they aimed to gather a group of individuals who were engagement experts, our need for objective criteria that was available in accessible records may have resulted in the exclusion of individuals who had significant experience with professional engagement. This work was conducted using student pharmacists, making the transferability to pharmacists limited. Finally, participants in the Delphi process identified activities and characteristics of activities specific to the student pharmacist experience. Because the activities of student pharmacists are strikingly different from those of pharmacists, further work should explore professional engagement in practicing pharmacists.

Student pharmacists were chosen for this research as a starting point to determine a definition, characteristics, and activities of professional engagement and to identify strategies for growing professional engagement in our future practitioners. The findings of this work should be further validated with additional audiences. Further research is also needed to create a tool to measure levels of professional engagement, to initiate engagement improvement strategies, to link professional engagement to professional outcomes and professional satisfaction, and to correlate outcomes of higher levels of professional engagement with other psychosocial metrics.

SUMMARY

This study created a student pharmacist consensus definition of professional engagement, identified professionally engaging and disengaging activities, and generated a set of characteristics that lead to engagement. Student pharmacists play a vital role in the future of the profession of pharmacy, and their levels of engagement may serve as an important indicator of how engaged they will be in their future careers. Effort in activity design can focus on ensuring that characteristics under the characteristic domains of positive perceptions, relationships, modeling, and opportunities for altruism are maximized.

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