

Standardized Patients and Communities of Practice: A Realistic Strategy for Integrating the Core Values in a Physical Therapist Education Program

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Background and Purpose. Physical therapist (PT) educators are challenged to develop strategies that teach and reward student development of professional core values critical to effective patient-provider relationships. While teaching and evaluating student acquisition of clinical excellence, academicians may not utilize strategies for examining skill development in the professional or affective domain. The purposes of our project were to: (1) design a pedagogic model that explicitly teaches and rewards student development of professional core values such as compassion, caring, integrity, and communication within a patient-provider interaction; (2) design and pilot grading rubrics to assess student acquisition of both clinical and professional core values; and (3) examine the feasibility of incorporating the model into a “Clinical Integration II” course within a professional (entry-level) Doctor of Physical Therapy (DPT) program.

Method/Model Description and Evaluation. Our model uses standardized patients (SPs) augmented by asynchronous elec-

tronic dialogue within communities of practice (CoP). SPs are laypersons trained to mimic a patient condition. A CoP is a group of individuals who learn by communicating and working toward a goal that is of mutual interest. To stimulate the critical and holistic thinking required for the delivery of care, 17 PT students communicated within a CoP to answer questions related to a home care patient case. Five students participated in a 20-minute, videotaped interaction with an SP trained to mimic a patient in the home care setting. Grading rubrics developed by faculty and pilot tested by students, faculty, and SPs provided a 360-degree feedback loop on student-SP interactions.

Data Collection. Data collected from course faculty, student participants, and SPs was gathered via CoP discussion threads, student surveys, anecdotal discussion, and 2 formal debriefing sessions. Data were analyzed using a qualitative methodology to identify, code, and categorize the principle patterns.

Outcomes. We implemented our SP-CoP model during the Spring 2005 semester in a “Clinical Integration II” course. Analysis of the discussion thread comments among 4 students and a faculty mentor in one CoP revealed a dialogue that focused on the core professional values. A 360-degree feedback mechanism provided information about the teaching-learning process to both students and faculty. The development of instruments with integrated grading rubrics must explicitly reward student attainment of Core Value behaviors and skills. As a result of the pilot, faculty will formally incorporate the model into “Clinical Integration II.” Wider application within the curriculum will require additional pilot testing.

Discussion and Conclusion. Administration, faculty, students, and SPs enthusiastically supported formally incorporating the SP-CoP model into the Northeastern University DPT curriculum. SPs provided realistic and authentic teaching experiences for students, enabled them to cohesively inte-

grate prior learning, and allowed faculty to assess core value acquisition. A 360-degree assessment loop provided students with a diversity of perspectives on their ability to deliver patient care that is integrated, efficient, and compassionate.

Key Words: Standardized patients, Communities of practice, Physical therapist education, Core values, Reflection.

INTRODUCTION

As educators in the academic setting, our goal is to graduate physical therapists (PTs) who demonstrate the technical skills necessary for clinical excellence, as well as the professional competence required to interact with people of diverse backgrounds, disabilities, and generations. A challenge for academic educators is to design pedagogy that explicitly teaches and rewards student awareness of the ways in which affective domain attitudes and professional behaviors such as empathy, integrity, compassion, caring, and communication within a patient-provider interaction affects treatment outcomes.^{1,2} Teachers are often reluctant to assess students in the affective domain, which includes attitudes, values, and character development, because students view these qualities as private. According to Shepard and Jensen,³ students need to understand what is expected of them with respect to affective behaviors. Clinical educators are expected to use clinical performance instruments (CPIs) to measure professional attitudes and behaviors in physical therapist students.⁴ However, academic faculty members are less likely to teach and assess these skills in the classroom.³ Reasons for this gap may include the subjective quality of affective behavior, or attitudes that are also “difficult to identify, quantify, and assess.”^{4(p37)}

Along with its Vision 2020 statement,⁵ the American Physical Therapy Association (APTA) also released a document, *Professionalism in Physical Therapy, Core Values*,⁶ describing the professional expectations of a

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Doctor of Physical Therapy (DPT) program graduate. In the Core Values, professionalism is defined as a combination of clinical knowledge and competency, as well as professional behaviors and administrative skills. The professional expectations are depicted by 7 core values: accountability, altruism, compassion and caring, excellence, integrity, professional duty, and social responsibility.⁶ It is important that DPT curricula facilitate the development of the core professional values because they underpin our actions.

Currently, accredited physical therapist education program curricula include one or more clinical education experiences⁷ that require students to apply classroom theory and skills to patient care, while under supervision.⁸ One concern is that programs are designed so that, prior to clinical education, students learn knowledge and skills in the highly structured and protected environment of the classroom and lab. Because the academic and clinical practice environments are separate, it is difficult to realistically prepare students in the classroom for the challenges and complexities of today's health care system. Educators must foster strategies to bridge the distance between classroom and clinical instruction.⁸

Educators also need to consider the United States health care environment in which graduates will practice. Financial pressures imposed by managed care and Medicare have resulted in a reduction in resources, thus requiring PTs to treat complex patients effectively in fewer and shorter visits. Concomitantly, the composition of the population receiving care is becoming both older and more ethnically and racially diverse.⁹ Within this context, PT educators are faced with the persistent challenge of designing and evaluating learning strategies that facilitate students' development of clinical expertise desired by modern health care organizations.¹⁰⁻²⁰

In addition to superior clinical skills, outstanding clinicians demonstrate professional behaviors that include empathy, compassion, and strong interpersonal and communication skills.^{4,21} "Because most PT students are just entering adulthood, the attitudes, interests, values, and character development that underlie their clinical behaviors may not be at the professional level. Novice PT students may not have acquired the skill of understanding the affective interaction between themselves and the patient from the perspective of the patient; yet this skill is an essential part of the professional behavior that leads to successful patient education."^{4(p37)}

The American Physical Therapy Association (APTA) maintains that the DPT curriculum will ensure the profession's continued maturation.²² As our professional role contin-

ues to move from technician to diagnostician, effective communication requires the skill and compassion to efficiently ask the right questions and gather data for clinical decision making that takes into account the individual characteristics of a patient. Effective communication in students is a critical skill for clinical internships and practice. However, traditional evaluation strategies are focused on measuring student learning in the cognitive and psychomotor domains through written tests and the demonstration of hands-on skills during laboratory practica. The core professional values that define the DPT are heavily weighted in the affective domain and require students to be reflective practitioners.⁶ New pedagogy and assessment strategies must be devised which evaluate student learning in all 3 domains, and which also enable faculty to gather feedback on their teaching skills to improve the teaching-learning process.^{23,24}

To address the maturation required for the DPT, physical therapist education programs must be modified and enhanced. Two potential curriculum modifications include: (1) the assimilation and assessment of professional core values that reflect an autonomous practitioner and (2) authentic integration of academic and experiential education. The purposes of this paper are to describe: (1) an educational model that uses an authentic hands-on method for explicitly teaching and rewarding student development of professional core values; (2) grading rubrics that assess student acquisition of both clinical and professional core values; and (3) the feasibility of incorporating the model into a "Clinical Integration II" course within a professional (entry-level) DPT program.

Theoretical Framework

Our educational model relied on the use of standardized patients (SPs) to provide realistic teaching and assessment experiences for students in the classroom. We augmented the SP experience by the addition of communities of practice (CoPs) composed of students and faculty who discussed clinical practice issues related to the SP. Collective dialogue within a CoP and individual reflection on a case prior to interaction with the SP fostered mental preparation for clinical practice by students. Following an SP interaction, reflection on feedback from multiple perspectives enhanced the student's awareness of developing professional behaviors as well as clinical skills.

The theoretical framework for our model combined the work of Dewey,²⁵ Kolb,²⁶ and Schön,²⁷ and focused on learning from experience, which involved reflection to promote self-directed professional development.

Dewey described the process of learning as being grounded in the experience of a professional.²⁵ Kolb defined learning as a 4-stage process by which knowledge is created through experience that is contrary to learner expectations, thereby facilitating a change in perspective. The process of experiential learning is dynamic because ideas are reworked continuously through an individual's experience.²⁶

Reflection on individual experience is critical for "stepping back from a perplexing [incident to] generate a more comprehensive plan of activity."^{25(p64)} Through reflection, an individual can make meaning of their experiences. Reflective practice, as described by Schön, combines the process of "problem setting" and "reframing," which translates into problem identification and the application of prior knowledge to a new situation or learning through experience.²⁷ Schön maintains that professionals use reflection to deal with unique or unstable problem situations. The experiential learning process is an important component of physical therapist education because it provides opportunities for the development and application of knowledge, skills, and behavior in the clinical practice setting.^{8,28,29} The inclusion by educators of reflection on experience facilitates self-directed professional growth in students.^{27,30,31}

Standardized patients are an experiential pedagogy with potential for both teaching and assessing learning outcomes in students.³² SPs are lay people trained to simulate specific medical conditions consistently and reliably.³² According to Barrows,³³ SPs can be trained to act effectively as teachers and evaluators of students by providing written and verbal feedback in a nonthreatening setting. Standardized cases can be constructed to measure a student's ability to evaluate a patient and establish a treatment protocol. In addition, an SP interaction allows for the assessment of affective domain skills such as interpersonal communication, sensitivity to cultural differences, and response to ethical and moral dilemmas. The SP process can be structured to provide students with opportunities for reflection and self-assessment of personal experience. While SPs have been used in medical education since 1964, the concept is a burgeoning one in PT education.³³⁻³⁵

A learning community is an active teaching-learning process that promotes the development of learning relationships.³⁶ Learning communities are defined by 4 basic traits: (1) learning is situated among individuals who share meaning and ideas; (2) learning is related to community members' experiences; (3) learning relates to the context of society as well as the groups' collective history; and (4) the content of the learning is valued by

members.³⁶ Members in a learning community, who may have different levels of experience, collectively dialogue, share experiences, and learn about topics of interest.³⁷ A learning community is organized to reflect a horizontal versus a vertical structure to allow each individual a voice in a discussion.³⁷ In learning communities, individuals operate on an equal basis, or horizontal level, versus within a vertically oriented hierarchy in which one person may have more power or influence than another.

A learning community becomes a CoP when members are interconnected by a future-oriented, shared learning goal. A CoP values “individuality over conformity,”^{37(p79)} and recognizes the benefit afforded by a team approach to problem solving.³⁸ A CoP can occur among members at a designated location or bridge geographic boundaries through Internet technology. Within the physical therapist profession, a CoP enables participants to dialogue from multiple perspectives about clinical practice in its complexity. Discussion topics may include treatment approaches as well as conversation related to group process, professional values, professional identity, integrating theory with practice, and professional socialization.³⁹ When dialogue is amplified by reflection that is both individual and collective, shared meaning and understanding develops about a topic of interest.^{39,40}

Expert practitioners use technical knowledge combined with context-specific experiences to make decisions about patient care. A key for developing expert skills in students is to allow them to practice in authentic contexts,⁴¹ join a culture of practitioners,⁴⁰ and make contributions to a community experience. Within a CoP that contains experts, a student may initially participate peripherally in a dialogue, but as they gain mastery of professional knowledge they become more fully engaged.^{39,40} Even while engaging in legitimate peripheral participation, learning is social and students can learn and practice their developing thinking about clinical skills in a safe environment where their judgments and actions can be tested, analyzed, and modified without jeopardizing patient safety.

In summary, our model used SPs to create an experiential learning environment that provided opportunities for the explicit teaching and assessment of clinical excellence and professional behavior acquisition in students. The SP experience included a reflective component to promote self-directed professional development. Inclusion of a CoP augmented the learning process because students could discuss their developing clinical skills and professional behaviors in an au-

thentic context that was social, collaborative,^{40,41} integrative,³⁹ and safe.

METHOD/MODEL DESCRIPTION AND EVALUATION

Setting

Our proposed model was designed to address the challenges of explicitly teaching and assessing the professional behaviors of interpersonal communication, compassion, empathy, accountability, integrity, and social responsibility to PT students in a DPT curriculum. Northeastern University (NU), the setting for the project, offers a 6-1/2-year professional DPT. The NU DPT program includes two 6-month cooperative education or related work experiences in addition to 3 clinical education experiences. Each class within the DPT program contains approximately 70-100 students; the NU PT program is one of the largest physical therapist education programs in the country.

The NU Office of Institutional Compliance reviewed this project and classified it as exempt because it was conducted in an established educational setting (classroom, regularly offered, required course) and because it examined the impact of an instructional technique. All student participants were oriented to the project and provided with an informed consent form that described the project purpose.

Model

Our model consisted of an SP experience augmented by an online CoP to teach and assess student acquisition of professional behaviors (Figure 1). During the Spring 2005 semester, the SP-CoP concept was introduced within “Clinical Integration II,” a course designed for 70 fifth-year students. Students are expected to integrate knowledge of pathology and core PT classes into their

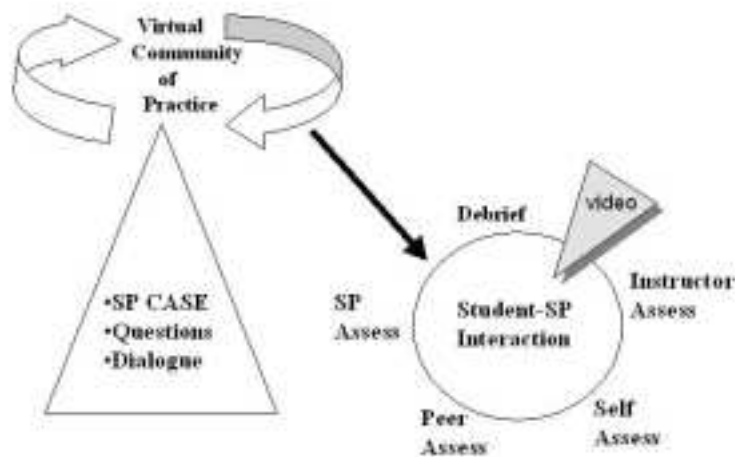
clinical reasoning, evaluation, and treatment skills. To assess the feasibility for adopting the model course wide, we pilot tested the SP-CoP process with 17 students enrolled in an honors course adjunct to “Clinical Integration II.”

To begin the pilot process, academic faculty developed a paper-based case study that depicted a complex patient with multiple system involvement in the home care setting. The case was designed to challenge students at an appropriate academic level for developing patient evaluation and care skills and was complicated by a realistic ethical dilemma, cultural concern, or communication challenge. Course faculty generated questions weekly to query students on clinical decisions as well as issues related to accountability, altruism, communication, compassion, and caring. The case and related questions were posted for 4 weeks on a Blackboard* “Clinical Education II” Web site.

Four CoPs were created and contained 4-5 PT students each, as well as a facilitating faculty mentor. Students were educated on the rules for CoP participation and instructed to discuss the questions related to the case using Blackboard’s discussion board feature in preparation for their student PT-SP interaction. The faculty mentor provided guidance through expert questioning. Discussion board postings permitted our CoP members to communicate at their leisure, construct thoughtful responses, and reflect on the contribution of others.^{42,43} The purpose for using discussion thread conversations was to foster a professional and reflective discourse.⁴⁴ In addition, the discussion threads provided an “archival record of student and instructor par-

*Blackboard Inc, 1899 L Street NW, Washington, DC 20036.]

Figure 1. SP-CoP Model



participation.^{745(p215)} Archival records can provide feedback to an instructor on teaching-learning experiences and serve as data for scholarship related to online teaching and learning.

Five members of the NU community were trained as SPs by course faculty to simulate the patient diagnosis and to complicate the case through effecting communication, psychosocial, cultural, or ethical dilemmas. Training of each SP took approximately 1 hour. Each SP was provided a \$50 gift certificate as compensation for serving as an SP for 2 or more student interactions.

A classroom with a one-way mirror and audio capabilities was used for the student PT-SP interaction. The room was furnished to simulate a patient home with a bed, chair, scatter rug, bathrobe, slippers, and ambulation devices (walker and quad cane). Students were provided with a home care bag that included a clip board, pen, reflex hammer, tape measure, goniometer, Theraband, gait belt, hand sanitizer, paper towels, blood pressure cuff, and stethoscope. A video camera was situated behind the one-way mirror to record each student PT-SP interaction.

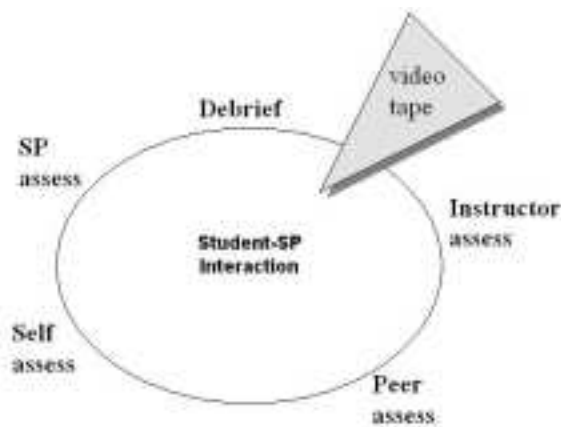
We conducted 5 student PT-SP interactions. To do this, we grouped the 17 honors students in triads, with 1 student assuming the role of the PT and the other 2 students completing peer assessment. The reason for placing the students in triads was to accommodate time and resource limitations. Each interaction was timed, lasted 20 minutes, and was videotaped.

360-Degree Feedback Loop

Our model provided a 360-degree feedback loop on the student PT-SP interaction (Figure 2). The 360-degree feedback loop is a well-described assessment strategy with origins in the business literature.⁴⁶ In business, the feedback loop is defined as a process that provides an individual with insight on their performance in the workplace. The feedback process includes a self-appraisal and insight from multiple perspectives, such as colleagues and managers. The feedback loop is a powerful tool because an individual receives performance appraisal that explicitly documents strengths and areas for development.

Benefits of the 360-degree approach include an increased understanding of performance expectations and an appreciation for how actions affect others. The inclusion of self-appraisal in the process is useful for promoting self-directed learning and development. In addition, coaching helps the individual understand the data more easily, share feelings about results, and discuss a plan for improvement. An individual faced with multiple sources of feedback is less likely to dis-

Figure 2. SP-CoP 360° Assessment Process



miss it as opinion and more likely to make changes to improve performance.

We adapted the 360-degree feedback approach for our SP-CoP model in which professional behavior development was examined from multiple perspectives that include the SP, faculty, peers, and self. In addition, we videotaped each student PT-SP interaction and the clip was placed on the Blackboard course Web site for all faculty and students to view. The 3-course faculty debriefed twice with all 17 students about the SP interactions. The first debriefing served as a coaching session during which the course instructor provided her expert perspective and a summary of her observations regarding student treatment approaches, safety concerns, and dealing with the unexpected.³³ At the conclusion of the SP-CoP pilot, a second debriefing session enabled both faculty and students to reflect together on the learning and experience with the model.

Assessment Rubrics

The 360-degree assessment loop relied on the use of assessment rubrics. Our rubrics covered 3 components: Practical Examination, Professional Behaviors, and the SP-Student Reflection Paper. We created 2 instruments with integrated grading rubrics to explicitly evaluate student acquisition of clinical excellence and professional behaviors during the student PT-SP interaction.³⁵ The instruments enabled the SPs, faculty, and peers to assess student clinical and professional behavior acquisition, provide feedback, and make recommendations for change. A third instrument required students to reflect on their learning.

The first instrument, Practical Examination, was designed to assess student acquisition of the criteria that define the skills required in the clinical evaluation process. Six sections were designed for assessment:

1. Patient interview process.

2. Screening, examination, evaluation.
3. Special tests.
4. Clinical decision making.
5. Home exercise.
6. Education.

Each section was graded using a 3-point scale: satisfactory (S), needs improvement (N), or unsatisfactory (U), with 5 points awarded for S, 3 for N, and 0 for U. Each section was described using 5-7 measurable criteria. Each criterion was clearly defined to reflect the behavior expected of a student at the S, U, and N levels. Safety precautions were a theme common to all 6 sections (see Appendix 1).

A second instrument, Professional Behaviors, enabled the SP to provide written feedback to a student PT on patient handling and affective behavior skills. The 5 sections were:

1. Accountability.
2. Compassion/caring (communication and respect).
3. Professional duty.
4. Social responsibility.
5. Integrity.

Each section was graded using a 3-point scale: satisfactory (S), needs improvement (N), or unsatisfactory (U) with 5 points awarded for S, 3 for N and 0 for U. Each section was described using 1-7 measurable criteria. Each criterion was clearly defined to reflect the behavior expected of a student at the S, U, and N levels (see Appendix 2).

A SP-Student Reflection Paper provided an opportunity for student PTs to reflect on their learning during an SP interaction. Three open-ended questions asked the student to: (1) describe what they learned, (2) explain why it was important, and (3) discuss how their learning might impact their future behavior as a clinician.

A faculty member and 2 peers in each triad completed the Practical Examination instrument during a student PT–SP interaction. The SP completed the Professional Behaviors instrument after the interaction. The student involved in the student PT–SP interaction used both instruments and the SP–Student Reflection Paper for self-assessment purposes. All feedback from the SP, faculty, and peers was given to the student PTs for their review.

DISCUSSION

The following sections will present the data we collected and analyzed as they relate to evaluation of the project purposes. The project had 3 purposes. One purpose was to develop a SP–CoP pedagogical model. The second purpose was to devise a method for evaluating student interactions with patients. A third purpose was to examine the logistics and feasibility of fully integrating our model into a capstone professional course, and to determine if our model had wider application in a physical therapist education program curriculum. Data collected included written CoP discussion thread comments, peer evaluations, SP evaluations, instructor evaluations, student reflection papers, videotape of student–SP interactions, student surveys, and debriefing meetings. We analyzed data using a qualitative methodology to identify, code, and categorize the principle patterns within the data.⁴⁷

SP–CoP Pedagogical Model

One purpose of our project was to develop an SP–CoP pedagogical model to teach and reward student development of core professional values. The model we created was informed by the literature^{25,41} and systematically implemented during the Spring 2005 semester in a “Clinical Integration II” course (Figure 1). A 360-degree feedback mechanism was created to provide data about the teaching–learning process resulting from the model.⁴⁶ Data collected from course faculty, student participants, and SPs was gathered via CoP discussion threads, student surveys, anecdotal discussion, and 2 formal debriefing sessions. Excerpts from these data sources are provided to illustrate student experiences with the SP–CoP portions of the model.

Analysis of the discussion thread comments among 4 students and a faculty mentor in one CoP revealed a dialogue that focused on the core professional values. To stimulate discussion, questions about the home care case were posted on the course Web site. In the following example, the patient fell earlier in the day. The patient asked the student PT not to tell her daughter, who is her caretaker, about the incident. The following is a series

of discussion thread comments in response to the question: “Would you call her daughter concerning this situation? Provide your rationale for your decision.”

I would not call the patient's daughter because the patient has already expressed her wishes to not tell her daughter based on the fear of going to a nursing home. I would encourage the patient to talk to her daughter about the situation though, because in the future it could be a matter of life or death. This patient has sound mind now, and the daughter does not have power of attorney, so it is not ethical for me as the PT to go behind the patient's back and betray her trust. On the other hand, if the patient talked to her daughter, maybe the daughter would realize that there are steps to take for her mother before placing her in a nursing home. I would definitely report the situation to the patient's doctor and maybe he/she can persuade the patient to speak with her family. [Student 1]

I definitely agree with what [Student 1] had to say on this question. It would not be ethical for us as medical professionals to ignore the wishes of our patient and tell her daughter about her situation. It would, however, be beneficial to encourage the patient to have some social support around her. [Student 2]

I agree with not contacting the daughter. It really depends on what the daughter's role is in her mother's care. If she is simply a support then we do not have the right to tell her. If the daughter has the role of making important decisions for her mother and it gets to the point where I believe the mother is unsafe, then I would tell the daughter. The first thing I would try to do is make the environment safer for the mother and see if that fixes the problem. I would also encourage the mother to tell her daughter herself. [Student 3]

If the daughter called you and asked you to call her back would you? What would you need to do first before sharing information? How do you connect with the daughter if she is only able to be reached after 4:00 pm and you are no longer on the clock? Is it appropriate to call a patient at night after the work day is completed? [Faculty mentor]

I would request a meeting with the daughter and the patient as soon as possible. If the patient opened up during that meeting to the daughter, or gave consent for me to speak with the

daughter, then I would share information, but only if the patient's daughter was present. The patient's daughter could keep a written journal of what she sees happening to the patient when there are no medical professionals present. I'm not sure about the phone calls with the daughter, it all depends on the consent of the patient and if the calls are necessary. I think that it would be appropriate if the circumstances allowed. If there is no benefit to calling the patient after hours then it would be inappropriate. [Student 1]

As supported by the literature, this CoP dialogue illustrated a discussion that built on itself and lent different perspectives on a complex issue of interest.^{39,40} Faculty member examination of the dialogue content revealed student discussion of core professional values. For example, the concept of integrity, which includes trustworthiness, resolving dilemmas, and ethical standards,⁶ was evident in students' desires to maintain patient trust through honoring her wish for confidentiality.

Following the SP interactions, students were asked to reflect on their learning via the SP–Student Reflection Paper. Data from the student reflection papers revealed that the SP experience provided opportunities for students to integrate the parts of their education into a holistic view of the PT.

The courses that we have taken here teach us many valuable parts of an evaluation at various times. Putting it all together like this is important in preparation for clinical education and the clinic. [Student 1 Reflection Paper]

I was the peer observer. From the SP experience, I saw how important it is to be able to integrate clinical skills and social interactions together. [Student 2 Reflection Paper]

Students also self identified areas of weakness related to preparation, efficiency, and organization during an evaluation.

It is important to have the ability to think on your feet, be prepared to have options and ready for change. How to be efficient. [Student 3 Reflection Paper]

I need to work on my sequencing of tests. I felt discombobulated in the real situation. [–Student 4 Reflection Paper]

One implication for educators is that the SP–CoP process provides students with an authentic method for integrating their educational experiences. However, while the students talked about professional values in the abstract, analysis of the discussion threads revealed that students did not articulate the

core values explicitly. As a result, instructors may need to develop structured activities that require the student to explicitly identify and think more deeply about the Core Values.^{1,4,35}

Assessment Instruments

The second purpose of this study was to assess student interactions with realistic patients. To do so, we designed the Practical Examination and Professional Behaviors instruments (Appendixes 1 and 2). Both forms included integrated grading rubrics. Course instructors and faculty experts within our department developed the instruments, which underwent both face and content validity checks.⁴⁸ We also designed the SP–Student Reflection Paper to promote self-assessment of clinical skills and professional behaviors. All of the instruments were pilot tested by the students, SPs, and faculty involved in the project. Changes were made based on suggestions related to ease of use and potential overlap of assessment categories.

Implications for educators are that the development of instruments with integrated grading rubrics, although challenging, must occur to explicitly draw attention to the behaviors and skills we want to assess. Research supports that a “well-trained SP and appropriately designed evaluation instruments can be used to evaluate the clinical performance of physical therapists and students in a standardized way.”^{34(p35)} The inclusion of reflection on experience is critical for self-directed professional development.^{27,30,31}

Feasibility for Inclusion in Our DPT Curriculum

The third purpose of our project was to examine the educational logistics and feasibility of providing this innovative pedagogy for nearly 600 students in our program. To examine the educational logistics, we asked student participants to provide written feedback on the entire process by responding to 6 questions. We also held an end-of-course debriefing with participating faculty and students to gather additional collective information about the SP–CoP model and suggestions for improvement. All 17 participants strongly recommended that the SP–CoP process be integrated into the fifth year of the DPT curriculum. As supported by the literature, participants applauded the authentic nature³³ of the experience, which built student confidence in the role of PT in preparation for clinical education experiences.³⁵

I do think that the SP–student PT interaction should be incorporated in the DPT curricula. . . . I feel it is a much more realistic than a practical [exam] situation and I also think that completing such an interaction will give the

students better confidence with their skills. I think it should be placed somewhere in the senior [fifth] year before the students begin their clinical [education] portion of the program. [Student 1 Reflection Paper]

However, students also expressed some concerns regarding the process, including stress³³ and the value of peer feedback if grades had been at stake.³⁵

During the project, not only is a camera on the student, but also multiple people standing behind a hidden window evaluating them. That would make anyone uneasy. [Student 2 Reflection Paper]

I think having a peer evaluate you is nice feedback. I know I was honest and not concerned about her grade. I think people are nicer than they should be when grades are involved. [Student 3 Reflection Paper]

Typically, every student in a class participated in an SP interaction. Initially, we were concerned about adapting the model to a class of 90 students. Resource and time constraints necessitated that we place students into triads. All students in a triad were responsible for case preparation, but only one student experienced a SP interaction while the other 2 were peers assessors. Some students who were not the PT expressed disappointment. However, all peer assessors indicated that they valued the experience and learned about patient–provider interactions.

Based on the pilot study results, the department’s curriculum committee met and determined how to best integrate the standardized patient model into the curriculum. As a result, the faculty agreed to formally incorporate the model into “Clinical Integration II.” To fully incorporate the model, we will adapt it for a larger class of students by using the triad approach.

During implementation of the model, we will collect data on issues related to additional faculty effort for case-study development, CoP facilitation and monitoring, and assessment of student–SP interactions. In addition, treatment room availability for the SP interactions and the costs associated with SP recruitment, training, and time must be considered.³⁴

A limitation of our pilot is that it reflects the experience of a single course within one DPT program. Additionally, our observation of the reflections and discussion thread comments indicated that 17 students involved in the pilot were focused primarily on clinical skill development. Thus, in addition to the SP–CoP experience, further group discussion about core professional values is re-

quired to underscore their importance in clinical practice.

Future Research

We recently won an \$11,000 grant from the Kenneth B Schwartz Center at the Massachusetts General Hospital in Boston, Massachusetts, to apply our SP–CoP model to promote the development of compassionate physical therapist caregivers. The funding will enable us to refine our rubrics, assess student learning outcomes, and test the feasibility of implementing our SP–CoP model with a larger sample of students. We are also working to develop a partnership with physical therapy faculty at another institution to address the issue of generalizability.

CONCLUSIONS

In the fast pace of today’s health care system, health care providers have little time to consider their interactions with patients. Our project was designed to provide opportunities for students to experience timed interactions with realistically complex patients, followed by reflection to revise their future actions. We also created a method for assessing professional behaviors explicitly. The SP–CoP process took abstract, static, paper-based case studies and brought them to life in an authentic manner that included the unexpected and unpredictable. Personal reflection on the experience increased student awareness of the need for incorporating professionalism into clinical practice. Increasing self-awareness of personal behaviors through practice and thoughtful reflection fostered assimilation of these traits possessed by expert practitioners.

A goal of the project was to promote student development of compassion, empathy, effective communication, and interpersonal skills. We maintain that pedagogy must be explicitly designed to challenge and assess student integration and refinement of core professional skills. This in turn may facilitate the development of mature DPT professionals who value the importance of integrating professionalism with accurate and efficient clinical skills while considering the impact on patient care.

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REFERENCES

1. May WM, Morgan B, Lemke JC, et al. Model for ability-based assessment in physical therapy assessment. *J Phys Ther Educ.* 1995;9(1):3-6.
2. Hayward LM, Noonan AC, Shain D. Qualitative case study of physical therapist students' attitudes, motivations, and affective behaviors. *JAH.* 1999;28(3):155-164.
3. Shepard KF, Jensen GM. *Handbook of Teaching for Physical Therapists.* 2nd ed. Boston, Mass: Butterworth-Heinemann; 2002.
4. Masin H. Education in the affective domain: a method/model for teaching professional behaviors in the classroom and during advisory sessions. *J Phys Ther Educ.* 2002;16(1):37-45.
5. APTA Vision Sentence for Physical Therapy 2020 and APTA Vision Statement for Physical Therapy 2020 (HOD P06-00-24-35). House of Delegates policy. American Physical Therapy Association Web site. Alexandria, Va: American Physical Therapy Association; 2000. Available at: [http://www.apta.org/rt.cfm/About/apta_missiongoals/visionstatement?object=siteprint\[\]&http://www.apta.org/AM/Template.cfm?Section=Vision_20201&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=285&ContentID=32061](http://www.apta.org/rt.cfm/About/apta_missiongoals/visionstatement?object=siteprint[]&http://www.apta.org/AM/Template.cfm?Section=Vision_20201&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=285&ContentID=32061). Accessed September 17, 2004.
6. APTA Professionalism in Physical Therapy: Core Values. American Physical Therapy Association Web site. Available at: <http://www.apta.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=21299>. Accessed September 17, 2004.
7. Commission on Accreditation of Physical Therapy Education. *Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapists.* Alexandria, Va: American Physical Therapy Association; 1996.
8. Gandy J. Preparation for teaching in clinical setting. In: Shepard K, Jensen G, eds. *Handbook of Teaching for Physical Therapists.* Boston, Mass: Butterworth-Heinemann; 1997: 119-167.
9. US Bureau of the Census. Resident Population Estimates of the United States by Sex, Race, and Hispanic Origin: April 1, 1990 to July 1, 1999, With Short-Term Projection to November 1, 2000. Available at: <http://www.census.gov/population/estimates/nation/intfile3-1.txt>. Accessed January 2, 2001.
10. Jensen GM, Gwyer J, Shepard KF, Hack LM. Expert practice in physical therapy. *Phys Ther.* 2000;80(1):28-43.
11. Kaufman RR, Portney LG, Jette DU. Clinical performance of physical therapy students in traditional and problem-based curricula. *J Phys Ther Educ.* 1997;11(1):26-31.
12. Hayward LM, Cairns MA. Physical therapist students' perceptions of and strategic approaches to case-based instruction: suggestions for curriculum design. *J Phys Ther Educ.* 1998;12(2):33-42.
13. Day J. Beyond lecture and laboratory in the physical therapy classroom. *Phys Ther.* 1985; 65(8):1214-1216.
14. Graham C. Conceptual learning processes in physical therapy students. *Phys Ther.* 1996; 76(8):856-865.
15. Jones MA. Clinical reasoning in manual therapy. *Phys Ther.* 1992;72(12):875-884.
16. Leighton RD, Sheldon MR. Model for teaching clinical decision making in physical therapy professional curriculum. *J Phys Ther Educ.* 1997;11(2):23-30.
17. Seymour CJ, Dybel GJ. Developing skillful clinical decision making: evaluation of two classroom teaching strategies. *J Phys Ther Educ.* 1996;10:77-81.
18. Tichenor CJ, Davidson J, Jensen GM. Cases as shared inquiry: model for clinical reasoning. *J Phys Ther Educ.* 1995;9(2):57-62.
19. Stith JS, Sahrman SA, Dixon KK, Norton BJ. Curriculum to prepare diagnosticians in physical therapy. *J Phys Ther Educ.* 1995; 9:46-53.
20. Umphred D. Physical therapy differential diagnosis in the clinical setting. *J Phys Ther Educ.* 1995;9(2):39-45.
21. MacDonald C, Cox P, Bartlett D, Houghton P. Consensus on methods to foster physical therapy professional behaviors. *J Phys Ther Educ.* 2002;16(1):27-36.
22. American Physical Therapy Association. *Doctor of Physical Therapy (DPT) Degree Frequently Asked Questions.* Available at: <http://www.apta.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=23597>. Accessed August 19, 2004.
23. Mostrum E. Reconsidering scholarship in physical therapy education [editorial]. *J Phys Ther Educ.* 2003;17(2):2-3.
24. Boyer EL. *Scholarship Reconsidered: Priorities of the Professoriate.* Princeton, NJ: Carnegie Foundation for the Advancement of Teaching; 1990.
25. Dewey J. *How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process.* Chicago, Ill: DC Heath and Co; 1933.
26. Kolb D. *Experiential Learning: Experience as the Source of Learning and Development.* Englewood Cliffs, NJ: Prentice-Hall; 1984.
27. Schon DA. *The Reflective Practitioner: How Professionals Think in Action.* New York, NY: Basic Books Inc; 1983.
28. American Physical Therapy Association. *A Normative Model of Physical Therapy Professional Education: Version 04.* Alexandria, Va: American Physical Therapy Association; 2004: 112.
29. Hayward L. Becoming a self-reflective teacher: a meaningful research approach. *J Phys Ther Educ.* 2000;14(10): 21-30.
30. Shepard KF, Jensen GM. Physical therapist curricula for the 1990s: educating the reflective practitioner. *Phys Ther.* 1990;70(9):566-577.
31. Jensen G, Denton B. Teaching physical therapy students to reflect: a suggestion for clinical education. *J Phys Ther Educ.* 1991;5(1):33-38.
32. Barrows H. An overview of the uses of standardized patients for teaching and evaluating clinical skills. *Acad Med.* 1993;68(6):443-451.
33. Black B, Marcoux BC. Feasibility of using standardized patients in a physical therapist education program: a pilot study. *J Phys Ther Educ.* 2002;16(2):49-56.
34. Ladyshevsky R, Jones M, Baker R, Nelson L. Evaluating clinical performance in physical therapy with simulated patients. *J Phys Ther Educ.* 2000;14(1):31-37.
35. Ladyshevsky R, Gotjamanos E. Communication skill development in health professional education: the use of standardized patients in combination with a peer assessment strategy. *J Allied Health.* 1997;26(4):177-186.
36. Oakes J, Lipton M. *Teaching to Change the World.* New York, NY: McGraw Hill; 1999.
37. Howard A, Kennedy-England ES. Transgressing boundaries through learning communities. *J Cooperative Educ.* 2001;36(1):76-82.
38. Doty EA. Organizing to learn: recognizing and cultivating learning communities. *Semin Nurse Managers.* 2002;10(3):196-205.
39. Hayward LM, DiMarco R, Blackmer B, Canali A, Wong K, O'Brien M. Curriculum-based electronic peer mentoring: an instructional strategy for integrative learning. *J Phys Ther Educ.* 2001;15(4):14-25.
40. Lave J, Wenger E. *Situated Learning: Legitimate Peripheral Participation.* Cambridge, UK: Cambridge University Press; 1991.
41. Cope P, Cuthbertson P, Stoddart B. Situated learning in the practice placement. *J Adv Nurs.* 2000;31(4):850-856.
42. Hayward LM. Integrating Web-enhanced instruction into a research methods course: examination of student experiences and perceived learning. *J Phys Ther Educ.* 2004; 18(2):54-65.
43. Hiltz SR. *The "virtual classroom": using computer-mediated communication for university teaching.* *J Commun.* 1986;36(2):95-104.
44. Rossman MH. Successful online teaching using an asynchronous learner discussion forum. *Journal of Asynchronous Learning Networks.* 1999;3(2):41-53.
45. Arbaugh JB. Virtual classroom versus physical classroom: an exploratory study of class discussion patterns and student learning in an asynchronous Internet-based MBA course. *J Manage Educ.* 2000;24(2):213-233.
46. Antonioni D. Designing an effective 360-degree appraisal feedback process. *Organ Dynamics.* 1996;25(2):24-38.
47. Miles MB, Huberman AM. *Qualitative Data Analysis.* Thousand Oaks, Calif: Sage Publications; 1994.
48. Portney LG, Watkins MP. *Foundations of Clinical Research: Applications to Practice.* 2nd ed. Upper Saddle River, NJ: Prentice-Hall Inc; 2000.

Appendix 1. Practical Examination—Example

**PTH U527
Clinical Integration 2
Practical Examination
SP–Student PT**

Name of PT Student _____

Date: _____

Peer or Instructor (circle one)

Time begin:

Time end:

Patient Interview (Process)

S = 5, N = 3, U = 0

Measurable Criteria	S	N	U	Comments
1. Obtains key information	Concise & organized	Disorganized	Verbose/ disorganized	
2. Prioritizes key finding most important to the case	Appropriate	Somewhat appropriate	Inappropriate	
3. Explains why key finding is critical to this case	Excellent & complete explanation	Good & partial explanation	Unclear & incomplete explanation	
4. Communicates effectively	Avoids use of medical jargon	Inconsistent use of medical jargon	Uses medical jargon	
5. Responsiveness to patient questions	Answers completely & checks for understanding	Answers, doesn't check for understanding	Doesn't answer questions or check for understanding	
6. Salutations	Introduces self and brings session to a close.	Does not introduce self or bring session to a close.	Does not introduce self /abruptly ends session.	

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