ARTICLES

Understanding the Professional Socialization of Canadian Physical Therapy Students: A Qualitative Investigation

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ABSTRACT

Purpose: To understand the professional socialization of physical therapy (PT) students.

Method: Forty-two students enrolled in our newly developed master's degree programme wrote three-page reflective journals on a critical learning incident after each of three selected clinical experiences. The journals were coded and analyzed, and major themes were identified and described. A separate cohort of 44 students participated in focus groups after the same three clinical experiences to check the trustworthiness of the results.

Results: Following the first placement, the main themes coded were emotions, self-confidence, professionalism in the real world, communication, and learning by doing. After the intermediate placement, major themes were idealism versus realism, depth of communication with clients, and breadth of communication with family members and colleagues. Aspects of clinical learning were variable, and self-confidence remained an issue. After the final placement, most students were deeply engaged with their clients and self-confidence had developed to the point of self-efficacy. Tensions increased between the concept of ideal practice and the pragmatics of actual practice, and the concept of self as protégé (rather than as object of the supervisor's evaluation) emerged. The themes were subsequently assembled in a booklet with representative quotations.

Conclusion: These results contribute to foundational knowledge required by PT educators, including clinical instructors, by explicitly describing the professional socialization of PT students.

Key Words: physical therapy students, professional socialization, qualitative investigation

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RÉSUMÉ

Objectif : Comprendre la socialisation professionnelle des étudiants en physiothérapie.

Méthodologie : Quarante-deux étudiants inscrits à notre nouveau programme de maîtrise ont écrit un journal de réflexion de trois pages sur un incident d'apprentissage critique après chacune de trois expériences cliniques choisies. Les journaux ont été codés et analysés et des thèmes principaux ont été identifiés et décrits. Afin de vérifier la fiabilité des résultats, une cohorte distincte de 44 étudiants a participé à des groupes de discussion après les trois mêmes expériences cliniques.

Résultats : Après le premier stage, les thèmes principaux portaient sur les émotions, confiance en soi, le professionnalisme dans le monde réel, la communication et l'apprentissage par la pratique. Après le stage intermédiaire, les thèmes principaux étaient l'idéalisme par rapport au réalisme, la profondeur de la communication avec les clients et l'étendue de la communication avec les membres de la famille et les collègues. Les aspects de l'apprentissage clinique étaient variables et la confiance en soi demeurait un problème. Après le stage final, la plupart des étudiants avaient développé un engagement profond avec leurs clients et leur confiance en soi s'est vue développé au point d'auto-efficacité. Des tensions ont augmenté entre le concept d'exercice idéal et les détails pratiques d'exercice réel, et le concept de soi comme protégée (plutôt qu'objet d'évaluation du superviseur) est ressorti. Les thèmes ont par la suite été réunis dans un livret et accompagnés de citations représentatives.

Conclusion : Ces résultats contribuent aux connaissances fondamentales requises par les éducateurs en physiothérapie, dont les instructeurs cliniques, parce qu'ils décrivent explicitement la socialisation professionnelle des étudiants en physiothérapie.

Mots clés : étudiants en physiothérapie, investigation qualitative, socialisation professionnelle

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INTRODUCTION

Preparation to enter professional physical therapy (PT) practice requires more than the acquisition of discipline-specific content knowledge and therapeutic skills. Today's graduates require highly developed professional behaviours, as well as critical thinking and clinical reasoning skills, to deal with the rapidly changing health care environment. They also require professional knowledge that goes beyond technical rationality and traditional "hard" science as a basis for practice.[1] Dahlgren, Richardson, and Kalman[2] emphasized the need for all health care professionals to recognize, articulate, and value knowledge that is generated in clinical experiences. A major challenge for trainees in health care, they argued, is to develop the skills to adapt and change their approach to the management of individual clients and patients through collaborative processes by attending to the specific and critical variables that are important for individuals in their unique environments.[2] Students need to develop flexible and adaptable clinical decision-making skills in order to take into account scientific knowledge in the variable contexts presented by individual clients over time. With the transition from 3- or 4-year baccalaureate programmes to 2-year master's-level entry programmes, facilitating well-rounded professional development has become a major challenge for Canadian PT educators. This challenge has been compounded by the context of our rapidly changing and increasingly complex practice environments.

In our transition from a 3-year baccalaureate programme (with one prerequisite year at university) to the 2-year master's programme, we believed that incorporating collaborative learning experiences in a case-based format would facilitate the development of higher-level critical thinking and clinical reasoning abilities. We also had an explicit desire to integrate our on-site (academic) and off-site (clinical experiences) curricular components in a more meaningful way. These prior beliefs and values are consistent with Dahlgren et al.'s view that faculty and students need to collaborate more across the continuum of academic and clinical experiences, through a variety of social experiences, to explicitly recognize the value of both scientific and practice-generated sources of professional knowledge in supporting clinical practice.[2] Without this kind of sharing, both students and faculty have an incomplete (and dissimilar) view of knowledge to support clinical decision making in real situations (i.e., the use of knowledge in action).

We concur with others who believe that one way to facilitate professional development is to have students engage in reflection.[1,3] We align ourselves with Donaghy and Morss's definition of reflection as engagement in critical analysis and evaluation of experience using higher-order intellectual and affective processes to lead to new understandings of optimal ways to think about clinical situations.[4] As part of our formal Master of Physical Therapy (MPT) Program Evaluation, students wrote three-page reflective journals on a critical learning incident[5] after their second junior (end of the first academic year, 5 weeks), intermediate (November/December of the second academic year, 6 weeks), and final senior (May/June of the second academic year, 6 weeks) clinical experiences. Other components of the programme evaluation included longitudinal examination of critical thinking abilities, attitudes about research, and self-evaluations of professional behaviours; these aspects are beyond the scope of this paper. Although the programme evaluation was designed primarily to provide formative feedback on our new programme, we also recognized its value in fostering individual students' professional development. Accordingly, students were given confidential feedback on their critical thinking profiles and their self-evaluation and action plans for the development of professional behaviours to assist them in their professional development; however, neither their perceptions about research nor their "grade" on the reflective journals was returned to them initially.

At the beginning of our programme evaluation, we appraised students' reflective journals, using Williams et al.'s[6] strategy, at each of the three time points, evaluating whether or not students had completed the assignment as instructed. Over 3 consecutive years, we found no significant differences in average faculty evaluations of the reflective journal task. We concluded that the process students used in completing the reflective journals was not changing, but we did sense a definite change in the content and depth of their reflections, both within and between student cohorts. We wanted to give our students feedback that would not merely help them to complete the task as assigned but also facilitate those who were not advancing, relative to their peers, in terms of the content and depth of what they chose to reflect. We were encouraged to conduct this qualitative study of our students' reflective journals by the dissonance between the quantitative results of evaluation of their reflective pieces and our growing realization that the students were changing.

Guided reflection has become increasingly popular in health care education over the past decade,[4,7–9] based on the assumptions that overt reflection speeds the development of clinical expertise and that guidance from another person is required for deep learning to occur.[10] Johns[10] has developed a model of structured reflection that poses a series of questions to assist practitioners in accessing both the depth and breadth of clinical experiences necessary for learning to take place. Through this process, learners become skilled at doing such things as attending to key salient points in a situation, understanding why situations often evoke powerful feelings, making decisions that are consistent with personal theories and values, understanding

situations from different perspectives, and continually expanding and reorganizing knowledge to support effective practice.

To fulfil our role as guides in supporting students' professional development, we realized that we needed to better understand the process of professional socialization. We started with Vollmer and Mills's[11] definition, cited by Richardson: "professional socialization is the process through which individuals learn the attitudes, values, and beliefs of their chosen profession and develop a commitment to a professional career."[12(p. 463)] Appreciating that this definition has its origins in the mid-1960s, we added "the inclinations for students to demonstrate systematic critical inquiry, making tacit knowledge explicit, and articulating their clinical reasoning,"[4] in order to be more consistent with current thinking of the attributes required of professionals in the current practice environment. We recognized that a portion of our MPT Program Evaluation—namely, the reflective journals—potentially provided the data we needed to better understand how students develop the attitudes, values, and beliefs of physical therapists and how they develop their professional knowledge base and clinical reasoning skills. The purpose of this study was to describe and understand the early professional socialization of PT students by qualitatively analyzing themes from students' reflections of learning experiences in their junior, intermediate, and senior clinical placements.

METHODS

The data for this study were initially collected for a programme evaluation. Participation in the programme evaluation was a requirement of our programme, and ethics approval was not initially required. We subsequently received approval from the University of Western Ontario Research Ethics Board for Health Sciences Research Involving Human Subjects to do a retrospective qualitative analysis of existing reflective pieces and to engage a separate cohort of students in checking the trustworthiness of the results across groups of students. Participating in this checking process was a part of our formal programme evaluation for that year; our ethics board advised us, therefore, that we were required to have students sign an acknowledgement form, detailing all aspects of the programme evaluation, but were not required to have them sign a consent form.

Our rationale for undertaking this research was pragmatic. Although we had found no statistically significant differences across cohorts in longitudinal evaluations of students' reflective pieces , we perceived that the content of students' reflections was changing. We therefore decided to use a generic qualitative approach.[13] A generic approach is useful in cases where research is guided not by an explicit set of philosophical assumptions but, rather, by a practical need. According to Caelli et al.,[13] specific actions can be taken to enhance the quality of generic qualitative research. In addition to addressing a practical problem, we aimed for rigour through reflexivity (iterative peer-debriefing process among team members with multiple perspectives) and conducting a cohort check. Although a philosophical position was not considered *a priori*, our research was guided by post-positivist assumptions (i.e., we had preconceived notions of what would be in the journals, and we intentionally looked for those elements).

Data Collection

All 42 MPT students enrolled in the 2004 graduating class—32 women and 10 men, with an average admission age of 24.0 years (SD = 1.6)—participated in our data collection by providing data in the form of reflective journals on critical learning incidents as part of our formal program evaluation. A critical learning incident is defined as a clinical experience that teaches students something new about practice, so that subsequent practice is transformed.[5] Such incidents can vary considerably, but include the following possibilities: (1) an incident in which students felt that they made a significant difference to a client's outcome; (2) an incident that did not go as planned; (3) an incident that was very ordinary and typical but led to an "aha!" moment; or (4) an incident that was extraordinary and thought provoking. In the reflective piece, we offered students guidelines prepared by Williams et al., advising them to describe the incident in detail, discuss immediate and longer-term thoughts and feelings, identify what was the most valuable learning in the incident and why it was important, and, finally, reflect on how the new learning would influence their future practice.[6] All students were asked to select one incident, but occasionally they chose to reflect on several related incidents in the same reflective piece.

Analytic Framework

A coding scheme was developed iteratively and collaboratively, similar to an approach used by Hackett[14] and following guidelines for coding and analysis outlined by Taylor and Bodkin,[15] to code the reflective journals. A research associate (RC, an outsider with training in library and information sciences and experience in doctoral research on the topic of becoming a patient) read the transcripts and selected meaningful segments of text. These were organized into codes, and a preliminary coding manual was developed. The research associate applied the coding manual to the transcripts, refined the manual in discussion with the core team (DJB, SDL, and LB, all physical therapy insiders), and repeated these steps until everyone was satisfied that all meaningful segments of the students' reflections were "captured" by the

Reflective Domains

Communicative	Cognitive	Professional	Affective
Rapport	Procedural	Collegiality	Self-Confidence
Encouragement	Knowledge/Learning	Ethics	Assertiveness
Teaching	Sources	Acculturation	Independence
Collaboration	Reflection	Reflection	Emotion
Negotiation			
Feedback			

Figure 1 Coding scheme

coding manual. This point was reached with the fifth iteration of the coding manual. An overview of this coding scheme is shown in Figure 1; the detailed coding manual is available on request.

One of the authors (ACB, an outsider with a background in sociology) coded all the journals, using the final coding scheme, in QSR NVivo 2.0 (QSR International Pty. Ltd., Cambridge, MA), a qualitative software programme. We then printed out the coded text for each of the three placements. Subsequently, all authors independently reviewed the coded text. Collectively and iteratively, in peer-debriefing sessions (three meetings for each time point), the authoring team identified and described the key themes using a content-analysis approach, collapsing like themes within codes and developing overarching themes. We selected illustrative quotations and developed three separate profiles (junior, intermediate, and senior). These profiles were collated separately in preparation for the focus groups that were arranged with a separate cohort of students to check the resonance of the profiles with their own clinical experiences.

Cohort Checking

All 44 students—33 women and 11 men, with an average admission age of 24.0 years (SD = 3.0)—enrolled in the 2006 graduating class participated in a cohort-checking process to evaluate the authenticity of the coding work. We were not able to review the results of our preliminary analyses with the initial cohort (the 2004 graduating class) using standard member-checking approaches because these students had graduated by the time we finished analyzing their final reflective journals. We believed it was necessary to assess students at similar points in their professional journeys, because the developmental changes are so rapid. Therefore, we opted for a "cohort-checking approach" with a separate incoming class of students as a better option than not checking at all. The cohort-checking used a modified nominal group technique,[16] which we have found in previous work to be a useful strategy to ensure equitable involvement by all participants. All students participated in one of four focus groups held immediately after their second junior, intermediate, and final senior placements. All focus groups were facilitated by ACB. We considered it important that the facilitator be someone other than a faculty member; we suspected that if the students perceived a power differential between themselves and the facilitator, they would be likely to provide input based on a "desirability bias," rather than expressing their true beliefs. The students who participated in the cohort-checking process had also prepared reflective journals during similar placements, so they were familiar with the context of the work. Prior to each session, students received a copy of our draft junior, intermediate, or senior profiles, as appropriate. They were asked to review the material prior to the focus group and to identify (1) aspects of the profile that resonated with their experiences during their most recent placement and (2) aspects they believed were missing, based on their experiences. Responses to both prompts were recorded on a flip chart, and the aspects participants perceived to be missing were collectively ranked from most to least important. Students' contributions were synthesized across the four groups at each of the three time points. We added these lists of aspects that resonated and aspects that were missing to the profiles and collated the three profiles into one booklet.

RESULTS

In organizing the themes at the junior, intermediate, and senior stages, we used the metaphor of a jigsaw puzzle (see Figures 2–4) to depict the developmental changes over the period of a year. From the beginning of our analysis of the reflective journals at the junior stage, we regarded our major themes as reflecting pieces of the puzzle of becoming a physical therapist; the theme of emotions was central. We liked the idea of a puzzle because, to date, the process (or, indeed, the mystery) of professional socialization of PT students had not been explicitly described. Our alignment with this metaphor was strengthened after our analysis at the intermediate stage, because the additional puzzle pieces fit so nicely into the corners of the picture that had emerged at the junior stage. Finally, at the senior stage, we perceived the additional themes as building on a solid base of the picture established after the intermediate stage. These additional themes, each emerging

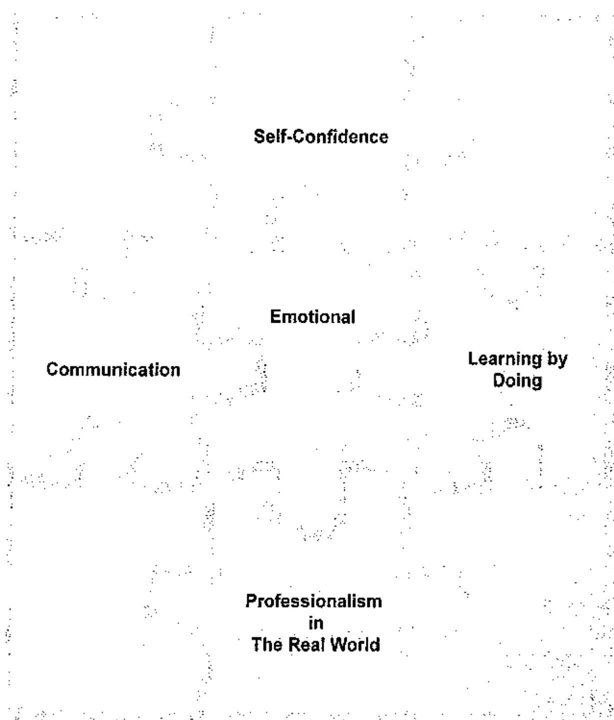

Figure 2 Junior journals: Pieces of the puzzle in becoming a physical therapist

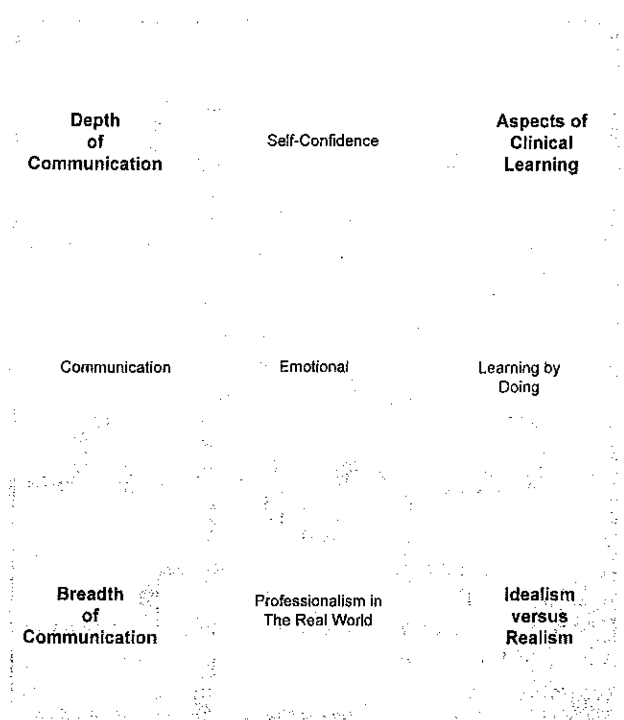

Figure 3 Intermediate journals: More puzzle pieces toward autonomous physical therapy practice

out of the interaction of previous themes, moved the puzzle from two to three dimensions. The main themes and corresponding brief descriptions are shown in Table 1. The following sections elaborate on this brief

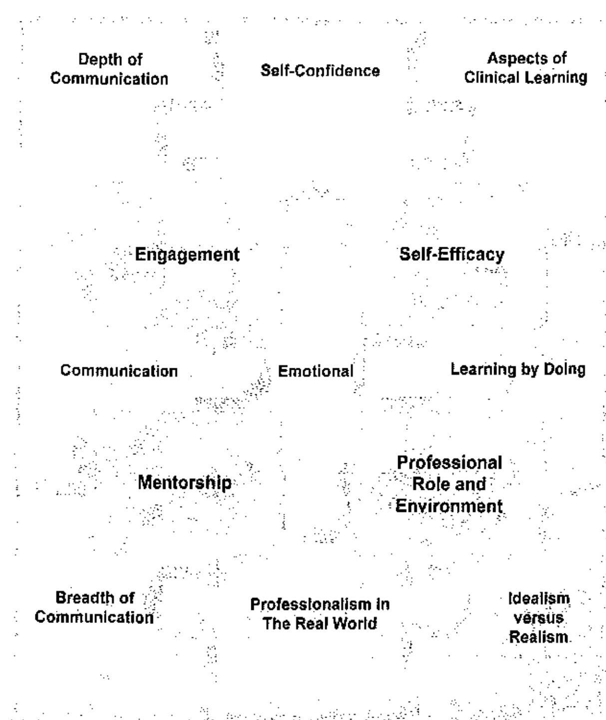

Figure 4 Senior journals: Adding another dimension to the puzzle

summary by quoting directly from students' reflections at each stage.

Junior Stage

At the junior stage, *emotion* was the predominant theme. Several students described initial clinical experiences as being like an emotional roller coaster; they indicated that it would have been helpful to know this before undertaking their early placements so that they could better prepare themselves. Students described conflicting emotions that included feeling awestruck, compassionate, empathetic, elated, fortunate, gratified, proud, and relieved as well as feeling angry, awful, embarrassed, frustrated, helpless, indifferent, nervous, sad, shaken up, shocked, and overwhelmed:

> At this point I had a sinking feeling in my stomach and my cheeks were hot with embarrassment and guilt at the thought of having inflicted unnecessary pain on poor [client]. Not to mention the fact that I looked like the biggest idiot in front of [clinician].

> I was feeling like I was sitting on the top of the world. I was so proud and happy that my treatment had made such a difference for a patient.

These emotions were coupled with threats to self-confidence, although some students experienced a growth in this attribute at this early stage:

> Part way through the assessment, she began to get teary-eyed, and I found myself not knowing what to do.

Table 1 Summary of Key Themes at the Junior, Intermediate, and Senior Stages of Professional Socialization

Key Themes	*Descriptions*
Junior	
Emotion	Experiencing the first placements is clearly emotional, with descriptions of conflicting emotions (from the most positive to the most negative).
Self-confidence	Expressions of varying degrees of confidence in themselves and their clinical decisions
Professionalism in the real world	Reality sets in; practice involves learning beyond the books; professional behaviours are essential
Communication	Recognition of the importance of establishing good communication with clients
Learning by doing	Importance of hands-on experience and learning in a clinical setting
Intermediate	
Idealism vs. realism	Recognize greater challenges in the less protected environment with higher complexity, demands, and expectations for autonomy, including dealing with conflict and contradiction among personal and professional beliefs and values, between ideal practice and what actually happens in practice
Depth of communication	Strong communication skills needed for client-centred practice, dealing with professional boundaries, and individualizing communication strategies
Breadth of communication	Must also communicate with family members, health care professionals
Aspects of clinical learning	Diverse learning experiences: focus varies from professional behaviours to psychomotor skills, from specific conditions and/or body parts to the whole person.
Self-confidence	Growing realization that self-confidence is linked to clinical reasoning and flexible, adaptive behaviours
Senior	
Engagement	Deep level of rapport, enjoyment, caring, advocacy
Self-efficacy	Self-confidence supported by skill level truly possessed, balanced with a tolerance for not knowing
Professional role and environment	Full recognition of tensions between ideal and actual practice
Mentorship	Recognition of clinical instructor as mentor, not evaluator or authority

> This was the first time a patient had cried in my presence. I was very overwhelmed, and I really wasn't certain what to do.

Cohort checking confirmed our initial finding that students perceived the application of knowledge, skill, and behaviours as being more difficult in the clinical setting (the "real world") than in the university setting:

> During these attempts, all that was going through my mind was our course on Ethics and Practical Standards. I realized that I had received consent from the patient at the beginning of the visit, but I also remembered that patients have the right to change their mind as well. We were forcing this patient to do something that they did not want to do and that the patient had removed his consent originally given.

At the junior stage, students recognized the importance of developing trust and rapport with clients through good communication:

> I realized that listening to her during that first assessment was one of the best things I could have done. In fact, listening to her was just as important as the actual therapy I was providing her with.

Students also indicated that hands-on experiences facilitated their learning:

> This experience enabled me to feel what an adhesion is and what it is like to break one. The majority of my learning up to this point had been from lectures, labs and textbooks, but these forms of learning can never truly prepare a person for what it is like to be working with a real patient.

With the exception of the communication theme, a strong sense of egocentrism permeated the junior journals—the focus was on the students rather than on their clients.

Intermediate Stage

At the intermediate stage, the primary finding was an expansion of the themes at the junior level. The major theme was the discrepancy between ideal and actual practice, for a variety of reasons:

> By the end of the third day, I discovered that applying the assessment skills I learned in school to actual patient situations was very difficult and required experience, hands on knowledge, and lots of practice, which I of course did not have.

Communication was a much stronger theme at this stage, and students expressed a greater appreciation for the depth of communication skills that successful clinical work requires. Students also recognized that developing communication skills requires hard work:

> The most valuable lesson that came out of this situation was that we often take communication for granted. There is a tendency to assume that all forms of communication are alike, and that the skill of effective communication is innately found within all of us. This of course is clearly not the case. The ability to communicate clearly and effectively is not instinctive but rather a skill ... This skill requires constant practice.

Students at the intermediate stage began to realize that communication extends beyond the client; in addition to communicating with clients and patients, effort needs to be expended on communicating with family members and clinical colleagues as well. This theme was clearly linked with a shift away from the egocentric position noted after the junior placements:

> With so many health professionals involved in the care of [client], there were conflicting opinions on what should be told to the family, what should be done for the patient and how the communication should be handled.

At the intermediate stage, the specific aspects of learning that students reflected on varied considerably; students progressed to higher-level learning at different rates:

> They [the clients with cystic fibrosis] had previously had lots of experience with physical therapy treatments such as percussions, vibrations and rib springing. I truly could not have had a better start to these techniques because I got lots of feedback ... and suggestions on how to improve.

> I learned to look past the disability and value the individual's input. I also discovered the importance of treating the whole person to consider not only the client's physiotherapy needs but also the many psychosocial factors affecting the client's everyday life.

Increasingly, students realized that they needed to take a more active role in managing their emotions to build self-confidence:

> This particular experience made me realize that my ability to clinically reason is better than what I previously believed, and that I should feel more confident in my abilities. I realized there is more information in my head than I had previously believed, and that it is not necessary to get so nervous when dealing with novel situations.

Senior Stage

By the end of the second senior placement, many students described incidents in which they were deeply engaged with their clients, showing a strong appreciation of the value of having a sound therapeutic relationship and advocating for their clients in contributing to positive outcomes:

> The communication strategies I have learned during my last clinical placement are only the beginning of my journey to make my patients comfortable and well attended to. I hope to make my practice a comfortable experience where patients will feel well respected and well understood. I would also like to be more proactive in preparing my patients for what they may encounter in the community.

The variable self-confidence themes of the earlier stages were replaced by self-efficacy; students now realized that they did have skills to practise competently:

> In the end I feel that I have made a huge transformation over my five clinical placements. I am now more confident in my abilities to embark on a career as a physical therapist.

They were aware of the discrepancies between ideal practice and practical realities with respect to time, financial resources, patients' desires and wishes, and personal values:

> I realize now, after 2 weeks of independently treating her, that a physical therapist does not have the time or energy to treat each patient as comprehensively as she/he would always like, and that prioritizing ... and treating them effectively and efficiently is all one can do in an allotted time frame. I found this hard to accept.

> The cornerstone of physical therapy is client-centred care. Thus, as difficult as it may be at times to accept a client's decision (i.e., to refuse therapy), as professionals, we are obligated to separate our personal beliefs, and values from our professional responsibility to respect the wishes of our clients, even if it is incongruent with our own.

Finally, their reflections suggested a changing perception of their relationships with their clinical instructors, whom they now viewed as mentors rather than as supervisors:

> Placements are definitely a great way for a student to find out what area they may or may not want to practice in but best of all, I think that placements allow you to see what kind of a therapist you want to become.... I have picked up some techniques, phrases, mannerisms and styles that I will keep and use during my career. I have chosen them carefully by watching and listening to all of my supervisors and noticing the reaction of their patients.

At this point, many students had clearly shifted from a focus on themselves to a focus on others, most notably their clients. One final passage captures well the rather remarkable changes over the period of a year:

> During this final placement, students from the first-year class came to [facility] for their pre-clinicals. Seeing them made me think back to one year ago when I was in the same situation. I can vividly remember how nervous, confused and totally overwhelmed I felt (and probably acted). I frequently still feel overwhelmed by how much I still have to learn about physio but it was a fantastic feeling to reminisce and realize how much I have actually learned and changed in just one year. I remember how scared I was to be in a hospital room, but now I am familiar with lines and tubes and patients so it is no big deal.

> I remember not knowing where to start an assessment, but now it seems like second nature just to follow a standard format. I remember feeling awkward around patients but now interacting with all types of people is more natural. All of these subtle changes happened so gradually that I wasn't able to really appreciate them until the first years sparked the memory of myself in their shoes. Now I appreciate it more when I feel helpful, effective and confident as a therapist because that took a lot of hard work.

A full report of our results is contained in a booklet titled *Physical Therapy Students' Reflections on Professional Socialization.*[17] We invite readers to go to our school's Web site to download the full report (http://www.uwo.ca/fhs/pt/PDFs/PT_Reflections_Final_Oct12_2006.pdf).

DISCUSSION

We believe that the results of our study, compiled into a booklet and readily available online, contribute to the foundational knowledge required by PT educators, including clinical instructors, by explicitly describing the early professional socialization of PT students. Academic faculty and clinical instructors can use this knowledge to guide students in their professional development. Students can also reflect on the profiles described to monitor their own development.

Physical therapy has a small but growing body of literature relating to professional socialization. Our results are consistent with the findings of others in the United Kingdom, Sweden, and the United Arab Emirates who, using different qualitative methods, also identified themes of self-confidence,[18,19] communication,[18–20] client-centred practice,[18,19,21] engagement with clients,[18] caring,[18] and multiple aspects of clinical learning[18] specific to PT, including the importance of hands-on experiences.[18,20,21] Wessel and Larin[19] obtained similar results in terms of an early focus on communication with clients and a later realization that communication involves individualizing approaches with different clients and extends to family members and other members of the health care team. Over time, students in Wessel and Larin's study became more comfortable when communicating with their preceptors, a finding that is also reflected in our study. Consistent with their findings, we identified that inter-professional communication can be either positive or negative and that both provide learning opportunities.

In our analysis of the students' reflective pieces, and in other aspects of our MPT programme evaluation, we observed the greatest variation in the middle data collection period. Students were similar to one another when they started our programme and when they finished it, but their individual trajectories through the programme varied considerably. This observation is consistent with the finding of a joint British and Swedish investigative team (Lindquist et al.) that students experience different developmental pathways as they move through the entry-to-practice curriculum.[20] Our finding of a shift from an egocentric approach to a stronger focus on the client has also been observed by others.[19]

There are conflicting reports in the literature as to students' tolerance for not having some propositional knowledge. We found that students increasingly felt comfortable not knowing all possible factual information. Others have reported that "knowing the facts" and "know[ing] everything" were important sub-themes collected from a student sample.[18] Conversely, and consistently with our findings, Wessel and Larin[19] found that students realized as they progressed through their student learning experiences that they needed to become lifelong learners if they were to provide best practice in the context of new knowledge available over time.

Our results differ from others' findings in that emotion was a major theme of our students' reflections after their junior clinical placements. This did not emerge as a prominent theme at the other two time points, however. Although other authors[19] mentioned that students most frequently commented on their emotions in reflections on their first placement, they did not identify it as a major theme. Miller et al.[22] determined that emotional suffering was a key theme among new PT graduates making the transition to practise in an acute-care setting. Clearly, the transition to independent practice involves taking on much greater responsibilities than students experience during supervised practice in clinical placements, which likely contributes to the emotional stresses that new graduates experience.[22]

Although others[19–21] have identified the issues of being constrained by time, needing to prioritize within an intervention session, struggling with ethical dilemmas, and lack of access to services, no one has articulated so clearly the tensions that were evident in our analysis. Beginning at the intermediate level, students were identifying conflicts and contradictions among personal and professional beliefs and values and discrepancies between ideal and actual practice. This theme was stronger at the senior level, and included struggles with personal–professional balance and being able to manage the stresses of both professional practice and life effectively.

A final difference that we observed between our study and the existing literature was the shift in students' perceptions of their clinical instructors, from evaluator/preceptor to mentor. This theme was apparent in Miller's work[22] with new graduates, who recognized all members of interdisciplinary health care teams as mentors. Mentorship clearly becomes more important as one continues to develop professionally and to attain higher levels of expertise.[23]

FUTURE WORK AND RECOMMENDATIONS

We plan to continue to have students write reflective pieces during their clinical placements. We have adapted the form developed by Williams et al.[6] to a self-appraisal of the process of reflection. In our view, this approach is an appropriate structure to help organize students' reflections so as to optimize learning from experiences. With knowledge of the process of early professional socialization, faculty members can give content feedback to students, in addition to engaging them in discussions around the comparability of faculty and student appraisals. We agree with Boud and Walker's[24] concern that use of a "checklist" approach to reflection can lead to a process that is routine and uncritical. To avoid this outcome, we plan to provide more probes to encourage students to "dig a little deeper" in considering the learning offered through their experiences. For example, we can engage students in a SWOT analysis,[2] encouraging them to identify their *s*trengths and *w*eaknesses and *o*pportunities for and *t*hreats to development, to strengthen their reflective skills. To become successful reflective practitioners, students must develop a critical consciousness of the cognitive activities involved in reflection.[2] By incorporating both reflection on experience and this meta-cognitive process in the curriculum, we hope to ensure that students become deeply engaged in reflection. It would be helpful for faculty members to demonstrate that they place a high value on this activity and to emphasize its utility in achieving both entry-level and continuing competency, as well as in the development of clinical expertise over time. Although it is tempting to assign a grade to this learning activity in an effort to encourage students to take it seriously,[25] others have questioned whether students' reflective pieces should be evaluated at all.[26] In our programme evaluation, we did grade the journals based on guidelines provided by Williams et al.[6] As stated above, we repeatedly found no significant differences in average faculty evaluations of the reflective journal task over time, although we had the impression that the students *were* changing in their thinking. This is precisely the issue that initiated the inquiry reported here.

We have also conducted some guided reflection activities in learning teams, in which both participation and sharing of the reflections were voluntary. In addition, students were encouraged to select a reflection that they felt comfortable sharing with others in their class. Johns likened this to a "'campfire' approach to storytelling"[10(p.3)] whereby all participants reflect on wisdom gained through practice. This group approach is efficient, maximizing the exposure of the guide (faculty mentor) to the students and vice versa. Furthermore, listening to others' stories can be a powerful trigger for personal reflection.[10] Trust, comfort, safety, and support are critical to the success of group reflection activities.[8] The role of the guide is also critical in ensuring a conducive learning environment, because some students see their critical incidents as very personal. The degree of support, however, needs to be tempered with appropriate challenges in order for deep learning—that is, learning beyond the memorization–regurgitation strategy—to occur. A major benefit of exploring reflections in groups is that many ways of interpreting an incident are explicitly identified, all of which may be different, but of equal validity.[8] Finally, discovery of knowledge generated by groups of people in a common community of practice[27] is an important part of professional socialization.

We concur with Donaghy and Morss[4] in cautioning that efforts need to be made to consider how reflection, with its roots in phenomenology,[28] is best integrated with the dominant paradigm of empirical scientific inherent in most PT programmes. The scientific method, with its reliance on hypothesis testing, methodological data collection, and logical analysis, does provide evidence to support some aspects of physical therapist practice.[29] Notably, this type of research—with some limitations[30]—is useful in developing and testing measures used for the purpose of examination, understanding strategies and tools to establish a physical diagnosis, identifying risk and prognostic factors, predicting outcomes, establishing effective interventions, and evaluating outcomes for groups of people. However, difficulties are regularly encountered—by both students and practitioners—in applying this type of evidence to clinical decision making with individual clients. Schön[31] emphasized that the uncertainties of clinical practice are best dealt with using reflection and insights from personal experiences to inform a collaborative decision-making process with individuals. Educators of PT students might facilitate tolerance for diverse forms of evidence by regularly discussing multiple sources of professional knowledge from a variety of paradigms across the entry-level programme, as appropriate to physical therapy practice. Knowledge gained from a phenomenological perspective fits well with the holistic, bio-psychosocial approach advocated by the World Health Organization in the International Classification of Functioning, Disability and Health,[32] which emphasizes personal and environmental contexts as factors worthy of inclusion in decision making.

We would be remiss if we did not mention that guided reflection can go wrong if the guide does not fully appreciate the potential power differential inherent in faculty members' discussing learning incidents with students. Freshwater[33] cautioned that guides must be vigilant about not casting themselves as authorities on how the student "should" or "could" be a better reflective practitioner. She stressed that guides must be fully aware (mindful) of their own power and authority. Similarly, to minimize potential effects of the power differential, Johns[10] suggested avoiding statements such as "I believe

Table 2 Summary of Issues and Solutions Relating to Reflective Exercises in Academic Settings (adapted from Boud and Walker[24])

Issues	*Solutions*
Recipe following	• Minimize expectations about what reflection is. • Avoid expectations about learning outcomes.
Reflection without learning	• Frame reflective activity in the context in which it takes place. • Focus on conceptual frameworks. • Encourage students to make their own meanings rather than "spotting the exam question" or "appearing to satisfy the teacher."
Belief that reflection can be easily contained	• Be prepared for reflections on issues such as personal distress or oppressive features of the learning environment. • Support explorations of issues.
Not designing the process for a formal learning context	• Establish a climate conducive to reflection. • Avoid formal evaluation of reflective journals.
Intellectualizing reflection	• Encourage emotions—central to learning. • Establish trusting and secure environment.
Inappropriate disclosure	• Be aware of possibility that students may disclose matters that will lead to a need to break confidentiality. • Avoid requesting or suggesting disclosure of deeply personal matters.
Uncritical acceptance of experience	• Encourage students to analyse experience deeply by examining presuppositions and exploring multiple interpretations and perspectives.
Going beyond the expertise of the educator	• Be well prepared for the most common issues. • Give careful thought to the design of reflective activities. • Be aware of capacity to handle various situations; develop referral network as necessary.
Excessive use of educator's power	• Be mindful of this possibility and avoid it.

that...," "I think that...," and "have you read...." Further to this point, Boud and Walker[24] identified many concerns about reflective exercises and offered solutions to the issues they identified; these are summarized in Table 2. In its best form, guided reflection is a truly cooperative and collaborative venture, with all participants—whether working in dyads or in groups with the guide—learning through the process. We suggest that educators who may want to implement a guided reflection process be aware of the issues and solutions inherent in this exercise, in order to optimize the experiences and outcomes of students.

We agree with others[18,21] who have emphasized the need to focus on professional socialization at multiple points in the entry-to-practice curriculum. We believe that the skills students develop through the process of exploring and reflecting on critical learning incidents will be helpful to them as they continue to develop professionally. They will also be able to use their reflective skills in preparing documentation for their provincial or territorial licensing bodies as partial evidence of continuing competency when they build their practice-generated knowledge through reflection on practice. Although we conducted this work in the context of physical therapy, we believe that the results (with some modification for discipline-specific content) are transferable to health professionals in other fields of practice.

We close with a passage from the work of Dahlgren et al.[2] with which we heartily agree:

> An implicit and explicit curriculum to support the pivotal importance of the processes of reflection thus aims to foster recognition of the reflective aspects of both immediate clinical decision-making and long-term professional development. The epistemological assumption of the social construction of knowledge strongly supports strategies for the development of reflective abilities which can be demonstrated throughout the curriculum.[2(p.29)]

KEY MESSAGES

What Is Already Known about This Subject

We know that professional development—both in preparation for entry to practice and for continuing competency—is facilitated by reflection. One form of reflection is the preparation of written pieces on critical learning incidents experienced in practice. Guided reflection has been proposed to assist students and novice practitioners in accessing the depth and breadth of clinical experiences in order for optimal learning to take place. Specific knowledge of the nature of the early professional socialization of physical therapy students—essential as a foundation from which to provide guidance—has not been described explicitly or in detail.

What This Study Adds

We believe that the results of our qualitative analysis of students' reflective pieces on critical learning experiences in junior, intermediate, and senior placements contribute to our knowledge of the process of early professional socialization of physical therapy students. We describe the key themes arising out of students' reflections at these three points in their learning, and we propose that this knowledge is useful to physical therapy

educators and clinical instructors in guiding and facilitating their students' professional development. This knowledge is also useful to students in monitoring their own professional development. We advocate continued use of written reflections by students during clinical placements, as well as self-evaluation of these reflections, to ensure that students develop a critical consciousness of their cognitive abilities in reflection. We provide suggestions of group and individual activities to optimize students' learning through guided reflection, based on the results of this inquiry.

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