Community-based Learning to Promote Self-efficacy of Physiotherapy Students in Hong Kong to Interact Professionally with Older Adults

by

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Abstract
In Hong Kong, novel community-based learning experiences with older adults were created in response to educators’ reports that physiotherapy students lacked confidence in professional interaction. The main theoretical foundations for the learning experiences were experiential learning and Bandura’s theory of self-efficacy. The main objectives of this thesis were to evaluate the community-based learning experiences, including an assessment of students’ educational needs, and to characterise self-efficacy in professional interaction. The overall research framework was action research, however a blend of research approaches was used, including naturalistic elements (e.g. grounded theory), and quasi-experimental design (e.g. pretest-posttest). The needs assessment identified students’ limited prior experience with older adults and lower self-efficacy to interact with older adults with cognitive and emotional problems. A tendency towards an increase in surface learning strategies was noted in third year students compared to first year students, suggesting this curriculum may need to better facilitate students’ deep learning. A negative correlation was found between students’ level of self-efficacy in professional interaction and use of surface study strategy. A theoretical framework using Bigg’s 3P model for teaching and learning is presented which links self-efficacy and students’ learning approach within curriculum design. The evaluation of the community learning experiences revealed a significant increase in students’ self-efficacy in professional interaction, along with multiple learning benefits, which highlighted the importance of direct experience. The characterisation of students’ self-efficacy in professional interaction confirmed a multidimensional construct with four main dimensions: purpose of professional interaction, type of client, situation, and type of interaction. Elements within the purpose of interaction and type of interaction domains were consistent with reported dimensions of expert practice in physiotherapy. Reasons why the relatively short community-based learning experiences (12-16 hours) had a positive learning impact for beginning level Hong Kong physiotherapy students are discussed. A curriculum model for the education of professional interaction in physiotherapy is presented using the identified dimensions of self-efficacy and highlights the integration of community-based learning experiences.
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Chapter 1

Introduction

This thesis is the description and evaluation of novel community-based learning experiences implemented for beginning level physiotherapy students in Hong Kong to interact in a professional manner with older adults. The incentive for introducing these learning experiences, initially developed by my colleague Dr. Sharyn Vanden Noven, stemmed from a curriculum review process within the Department of Rehabilitation Sciences at The Hong Kong Polytechnic University. The curriculum review process highlighted two main educational issues to be addressed in the new curriculum. Firstly, educators expressed the view that the physiotherapy students appeared to be lacking in confidence to interact in a professional manner with other health professionals and clients, in particular, children and older adults. Secondly, similar to elsewhere in the world, physiotherapy education in Hong Kong needed to change in response to, changes in the delivery of health care (e.g. a shift to more care in the community) (Utsey and Graham, 2001), the change in population demographics (e.g. the aging population) and changes within the physiotherapy profession (e.g. developing the reflective practitioner) (Shepard and Jensen, 1990; Wessell, et al, 1999; Jarvis, 1999; Clouder, 2000; Kember, et al, 2001).

The overall motivation to initiate the community-based learning experiences with older adults was to provide the physiotherapy students with an experiential base in professional interaction. This experiential base could then be reflected upon at a later date and integrated into future academic and clinical learning experiences. The primary aim of the community-based learning experiences was to enhance students' confidence to interact professionally with older adults. A secondary aim was to highlight the community as a potential setting for physiotherapy.

The community learning experiences were created using three key concepts from the professional and theoretical literature. The first concept from the professional literature was that effective skills in professional interaction enhance health care intervention (e.g. Winefield and Chur-Hansen, 2000; Davis, 1998; Guccione and DeMont, 1987). Secondly, was the concept that 'experience is a central source of learning' from experiential learning theory (e.g. Kolb, 1984; Dewey, 1938). The
third concept was that ‘thought influences performance’ from Bandura’s social

The two community-based learning experiences were created in collaboration with a
community organization in Hong Kong (Aberdeen Kai-fong Welfare Association Social Service Centre). Firstly, the organization identified the need to increase the
activity level of their members in a multi-service centre for older adults, as a means of
health promotion and injury prevention. Secondly, the organization requested
assistance interviewing homebound older adults within their area. Two learning
experiences were created to address the student and community needs: (1) Exercise
Partners with Older Adults and (2) Social Visits.

In the first year of implementation of the two novel community-based learning
experiences with older adults the main question was: are these learning experiences
feasible? Feedback collected from students and community participants revealed the
experiences were feasible to implement in the first semester for beginning level
physiotherapy students. Student feedback indicated increased confidence to interact
in a professional manner with older adults. Students commented they valued the
early exposure to physiotherapy, as it helped to motivate them in their studies and to
gain a perspective into the practice of physiotherapy. Older adult participants in the
exercise class indicated they enjoyed the interaction with the students as well as
reporting continuing some of the exercises they were taught in the exercise classes.
Community social workers reported that the student interviews helped them gain
information on over 200 homebound older adults. Overall, most comments provided
by students and community participants were positive. Many students requested
additional community learning experiences with more ‘complex’ or frail older clients.
Recommendations to continue the learning experiences were high.

The first year of the community-based learning activities was considered a success,
however, reflection revealed a number of areas for continued development to better
understand these learning experiences. A deeper understanding of the following
areas was identified: (1) student needs and prior exposure to older adults, (2)
effectiveness of community-based learning experiences and their influence on student
self-efficacy in professional interaction, and (3) the construct of confidence and
self-efficacy as it relates to professional interaction with older adults in physiotherapy.
The main objectives of this study were to:

1. Examine students’ educational needs in relation to professional interaction with older adults.
2. Evaluate community-based learning experiences for physiotherapy students designed to enhance students’ self-efficacy to interact with older adults.
3. Deduce lessons for the implementation of community-based-learning experiences within a professional curriculum.
4. Characterise students’ self-efficacy to interact with older adults in a professional manner in different situations and environments.

From the pilot experiences and the above objectives, specific research questions were identified:

- Is the implementation of community-based learning experiences sustainable for beginning level physiotherapy students (n=150) in Hong Kong?
- What is the profile of Hong Kong physiotherapy students’ preferred learning style? Is there a need for experiential learning?
- What are the students’ preferred approaches to learning?
- How much interaction do entering physiotherapy students in Hong Kong have with older adults?
- What is first year students' level of self-efficacy to interact in a professional manner with older adults?
- Is there a correlation between students’ level of confidence to interact in a professional manner with older adults and preferred learning style, approach to learning, and frequency of contact with older adults?
- How does students' level of confidence in professional interaction vary over the three year curriculum?
- Are the community-based learning experiences effective in increasing student’s confidence to interact with older adults?
- What aspects of the community-based learning experiences do students find most beneficial?
• Do the community-based learning experiences benefit the community participants?
• What is the characterisation of physiotherapy students’ self-efficacy to interact in a professional manner with older adults?

This thesis consists of nine chapters, beginning with a review of the professional and theoretical foundations for the research project (Chapter 2), followed by a description of the action research paradigm, methodology and methods employed in this study (Chapter 3). Chapter four is a description of the community-based learning experiences with older adults, which is then followed by an evaluation of the initial pilot learning experiences (Chapter 5). The following three chapters present the main results of this thesis, each focusing on a different research theme: students’ education needs (Chapter 6), effectiveness of the community learning experiences (Chapter 7) and the characterisation of self-efficacy to interact with older adults in a professional manner (Chapter 8). In the final chapter (Chapter 9), contribution to the literature, limitations and recommendations are discussed.
Chapter 2

Professional and Theoretical Foundations

This chapter first highlights the support for the community-based learning experiences within the Hong Kong Polytechnic University physiotherapy curriculum document. A discussion follows of the relevant professional and theoretical foundations: (1) effective professional interaction enhances intervention (2) experience is a central source of learning (3) perceived self-efficacy influences performance.

The Physiotherapy Programme

Similar to many educational programmes in the health professions, the Department of Rehabilitation Sciences at The Hong Kong Polytechnic University has recently undergone a curriculum review. The faculty members were faced with many challenges. Changes in health care organization and delivery, for example, have resulted in changes in the education of healthcare professionals. As stated by Bligh (1999) changes in healthcare education include:

Greater use of the community as a site for learning clinical skills and the introduction of opportunities for interprofessional learning. (p.82)

Competent and effective health care professionals must then be able to adapt to a variety of settings and interact with variety of individuals.

In the past decade, the physiotherapy programme at The Hong Kong Polytechnic University has experienced many changes. Prior to 1991, graduates of the physiotherapy programme in the then Polytechnic were awarded a Professional Diploma (PD). The programme was then upgraded to a degree course and graduates of 1994 were the first to receive a Bachelor of Science in Physiotherapy (Jones et al, 1996). Also in 1994, The Hong Kong Polytechnic was awarded university status. The physiotherapy programme continued to upgrade and was successfully converted to a Bachelor of Science (Honours) degree in 1998. Amidst these significant developments of the physiotherapy programme, the intake of students was also increased. The physiotherapy student intake in 1994 at 65 students was increased to 80 students in 1995 and to 100 students in 1996
and 1997. As The Hong Kong Polytechnic University is the sole provider of education for physiotherapy and occupational therapy in Hong Kong, and the Hong Kong government identified increasing needs for physiotherapists, further expansion was initiated to increase the student intake to 150 in September 1998 (Hui-Chan, 1996). This was a major undertaking.

Student admission to university in Hong Kong is completed using a centralized system. Students rank the university and choice of programme (up to a choice of 13) and are then placed into the university programmes based solely on their academic performance. Academic grades, “based upon a series of highly competitive examinations beginning from Secondary 5 (grade 11)”, are the only deciding factor for admission to university (Tang and Biggs, 1996, p.159). This highly competitive exam-based system, in combination with the common teaching style of didactic lectures and parents’ high academic expectations for their children, give Hong Kong students the significant impression that the effort they expend studying is their most important role at this stage of their life (Tang and Biggs, 1996; Bray and Koo, 1999). Admission into physiotherapy, for most students, is directly from this learning environment. Unlike other physiotherapy programmes, in North America for example, there is no admission requirement in Hong Kong to demonstrate an understanding of the nature of physiotherapy prior to admission. Most students, therefore, entering the physiotherapy programme are young (age 18-19 years) with very little knowledge or experience about the career in which they have been placed.

In addition to the challenges referred to above, the physiotherapy educators, clinical and academic, at The Hong Kong Polytechnic University identified during curriculum development meetings, that their students were low in confidence within the area of professional interaction. Many educators reported that the students appeared ‘shy’ and ‘quiet’ when interacting with clients of different age groups (young and old). The students had difficulty adapting their communication to suit the needs of the situation e.g. communicating with an older adult, with small children or with other health care professionals. It was also reported in the meetings that in addition to the verbal communication, the body language or postures adopted by the students appeared to demonstrate a lack in confidence. Members of the physiotherapy curriculum development committee
at The Hong Kong Polytechnic University agreed that the need to enhance students’ confidence to interact with individuals of different ages in a professional manner should be addressed in the new curriculum. This task was also consistent with the mission statement of the Department of Rehabilitation Sciences:

The Department’s mission is to provide high quality education to our students in a caring manner, so that our graduates in either Physiotherapy or Occupational Therapy will become competent and humane practitioners, who are able to communicate effectively with diverse clienteles and related professionals, practise ethically in a variety of clinical settings, and function credibly as valued members of multidisciplinary research teams. Cognisant of their professional roles, our graduates will be committed to life-long learning and the education of clients, the public and the next generation of therapists.

Through vigorous training of our post-graduate students and research pursuits done in collaboration with the professional and scientific communities at local and international levels, we are further dedicated to the development of a credible scientific base that will underpin the practices of both occupational and physiotherapy. In serving the broader Hong Kong community and beyond, we shall provide competent consultancy in a cost effective and friendly manner. We aim to make a difference to the community we serve. (Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, 1997, p.2).

(underline added)

The Credit-based Conversion Curriculum document (Department of Rehabilitation Sciences, 1998) identified key areas for the development of physiotherapy professionals that the new curriculum would address:

- ‘generalist’ practitioners who engage in ‘reflective’ practice;
- evidence-based services in a variety of settings, e.g. home, schools, community centres, hospitals;
- increasing students’ opportunities to make choices and decisions;
- more active and self-directed learning. (p.13)

The theme of professional communication or interaction was evident throughout the curriculum document (Department of Rehabilitation Sciences, 1998), for example, a key objective of the Physiotherapy Programme was to enhance the student professional’s interaction “with patients, clients, family members, other health care providers and community-based organizations for the purpose of coordinating activities for optimal patient or client care” (p.14). The physiotherapist as educator and communicator was also identified as a key factor to meet the aims and objectives of the programme. A second theme, exercise, was:
highlighted as a means for health promotion, even within a disabled population. The role of inactivity as a risk factor for movement dysfunction (i.e. mobility problems) was highlighted within the normal population, as well as for special populations (e.g., people with chronic conditions) (p.20).

To meet these learning objectives, the curriculum document identified Kolb’s model of experiential learning as one of the teaching and learning approaches to be implemented. Many of the teaching faculty in the physiotherapy programme, however, expressed concern regarding students’ early exposure (i.e. first semester, first year) to potential clinical populations. Similar to the conventional or modern integrated curriculum for health professionals, (Bligh, 1999) many felt that the relevant theoretical and background information should be ‘taught’ the in the university or controlled setting prior to interaction with potential clinical populations in a community setting. As Bligh (1999) stated, “many teachers are concerned that curriculum change may have harmful effects on student learning” (p.33). Concerns expressed by the physiotherapy faculty included that students should have a sound knowledge of ‘normal movement’ before seeing variations in normal (e.g. aging, pathologies). Others expressed the importance of giving the students the theoretical or background information in a lecture format prior to practical activities. Finally, some expressed concern regarding planning non-university based activities for first year students who ‘don’t know anything’. Given that the implementation of these community-based learning experiences were novel, Kolb’s well known model of learning through experience cited in the curriculum document helped to reassure teaching faculty that students can learn with a practical experience first, followed by reflection then the integration of theoretical concepts or ideas. Other teaching and learning methods cited in the curriculum document included: interactive and independent learning, the use of problems to direct learning and reflective learning (Department of Rehabilitation Sciences, p.24-26). All of these strategies encourage a learner who is active, not a passive recipient of information.

With the Hong Kong physiotherapy educators facing the implementation of a new curriculum and a 50% increase in student intake (from 100-150), the community-based learning experiences were developed as a pilot project for students in the first semester of the first year of the physiotherapy programme.
Professional Interaction

Importance of Effective Professional Interaction

The ability to effectively interact in a professional manner is an essential skill for all health care professionals. A physiotherapist must integrate specific knowledge and skills through therapeutic communication and interpersonal skills. Therapeutic interaction facilitates the outcome of the treatment by (1) enhancing the client's motivation and compliance with the treatment programme, and (2) enhancing the client’s own belief in the recovery process and their ability to cope (Gyllensten et al, 2000; Winefield and Chur-Hansen, 2000; Davis, 1998).

In physiotherapy, therapeutic interaction skills are required throughout the entire intervention from effective gathering of information, to implementation of the treatment programme (including education of the client), to evaluation of treatment effectiveness. Studies that have examined the practice of physiotherapy support the importance of communication skills in providing optimal treatment effectiveness. Jensen, et al (1990) found five themes which described the work of a physiotherapist. Elements of professional interaction were reported within all five themes: (1) allocation of treatment time, (2) impact of therapeutic environment on the treatment session, (3) the type of information collected from the client and how it was used, (4) the degree to which the therapist is responsive (verbally and/or manually) to the client during the intervention and (5) the therapist's ability to integrate social interaction with therapeutic interaction (see Table 1). Later, Jensen, et al (1992) reported attribute dimensions that distinguished novice and expert practitioners. Again, skills in professional interaction were cited in all five of the attributes: (1) ability to control the environment (e.g. remaining focused on the client, despite frequent interruptions); (2) evaluation and use of client illness and disease data (e.g. listening to clients and linking with data from physical examination); (3) focus on verbal and nonverbal communication with the client (e.g. complete focused attention on the client); (4) importance of teaching as a clinical skill (master clinicians described teaching clients as one of the most important clinical skills) and (5) confidence in
predicting client outcomes (e.g. confidence in collecting and interpreting client’s information).

A more recent study by Jensen et al (2000) reported four core dimensions of expert practice in physiotherapy – knowledge, clinical reasoning, movement, and virtues. Remarkably, again, communication (interaction) with the client was a key component in ALL dimensions of expert practice. Within the knowledge dimension the importance of active listening and gathering information from the client was highlighted. The collaboration between the therapist and the patient was considered “central to the clinical reasoning process” (p.37) within the clinical reasoning dimension. Movement and touch were noted as important methods of communication in the movement dimension. Finally, in the virtues dimension, expert physiotherapists were able to “communicate a sense of commitment and caring about the patient” (p.39). See Table 1 for a summary of reported attributes and dimensions of physiotherapy and their related elements of professional interaction.
### Table 2.1: Attributes/Dimensions of Expert Practice in Physiotherapy and Related Professional Interaction Skills

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<tr>
<td>Therapist integration of therapeutic and social interactions.</td>
<td>Experienced clinicians appeared to have effortless integration of therapeutic and social interaction. (p.321)</td>
</tr>
<tr>
<td>Ability to control the environment.</td>
<td>Master clinicians remained focused on the client, despite frequent interruptions (p.715).</td>
</tr>
<tr>
<td>Evaluation and use of client illness and disease data in a context-rich evaluation.</td>
<td>Master clinicians listened to clients and would probe deeper to gather client-focused information. (p.716)</td>
</tr>
<tr>
<td>Focused on verbal and nonverbal connection with the client.</td>
<td>Master clinicians’ demonstrated an intense, focused connection with the client. (p.716)</td>
</tr>
<tr>
<td>Equal importance of teaching to hands-on care.</td>
<td>Master clinicians described teaching clients as one of their most important clinical skills. (p.716)</td>
</tr>
<tr>
<td>Confidence in predicting effective client outcomes based on knowledge of pathology and experience with the course of healing.</td>
<td>Master clinicians had a confidence in collecting and interpreting client’s information, linking subjective with objective data. (p.717)</td>
</tr>
<tr>
<td><strong>Jensen, et al, 2000</strong></td>
<td></td>
</tr>
<tr>
<td>Multidimensional Knowledge Base</td>
<td>Listening to the client was an essential evaluation skill (p.35)</td>
</tr>
<tr>
<td>Clinical Reasoning: Contextual Collaboration</td>
<td>Expert clinicians focused on the client first as a person. (p.37)</td>
</tr>
<tr>
<td>Movement: A Central Focus and Skill</td>
<td>All of the expert clinicians used their hands to communicate with clients (e.g. for reassurance, facilitating safety, and comfort and praising). Touch was often accompanied with verbal responses. (p.39)</td>
</tr>
<tr>
<td>Virtues: Caring and Commitment</td>
<td>Experts communicated a sense of commitment and caring to the clients. (p.39)</td>
</tr>
</tbody>
</table>


Professional Interaction with the Older Client

Interaction with the older client is typically challenging for the student physiotherapist. Older clients commonly present with complex problems (physical, social, psychological and emotional), many of which can affect communication ability e.g. Alzheimer’s disease, dementia and cerebral vascular accident. The ability to communicate may also decline with normal aging. Mackenzie (2000) reported the very old age group (age 75-88) presented with the most conversational difficulties including “ambiguous referencing, verbosity, inappropriate topic change and failure to observe accepted turn taking rules.” (p.281). Student physiotherapists often find these characteristics challenging when they are focused on their own task of taking a history, planning and implementing a treatment in an efficient and timely manner. Mackenzie (2000) recommended that all health care workers “need to exercise listener patience, use appropriate questioning to resolve ambiguities and assist the speaker to return to topic” when communicating with older adults (p.282).

Many older people also experience a loss in self-esteem (or self-concept) as they age. It has been reported, however, that positive interactions can enhance an older person’s self-concept (Mackenzie, 2000). Because a physiotherapy treatment is not simply concerned with fixing a body part, but also includes active involvement from the client (e.g. home exercises, changing lifestyle behaviours) (Mattingly, 1993), creating positive interactions that help to motivate the older client are an important part of physiotherapy intervention.

Given the current population demographics of an increase in the elderly segment of the population, the older client is predominant in many areas of physiotherapy e.g. outpatient clinics, medical wards in hospitals, rehabilitation units and community care. The ‘geriatric patient’ is no longer seen only in specific geriatric settings, therefore, the student physiotherapist must be prepared to interact with older adult clients in a variety of clinical and community settings.
Components of Professional Interaction

Therapeutic professional interaction is most commonly described in relation to verbal and nonverbal communication skills including speaking, body language, reading, writing and listening (Davies, 1998). Northouse and Northouse (1989) presented a health communication model that highlighted the inter-connections between health professional, client, other health professionals, and other individuals within a specific context (Figure 2.1). The communication variables included verbal and nonverbal communication skills. Within verbal communication the importance of the use of appropriate questions, responses and education to enhance therapeutic outcomes was identified. Recently, in particular, the importance of developing empathy in health care professionals has been supported in the literature (Burnard, 1996; Davies, 1998; Greene, 1998; Northouse and Northouse, 1998; Winefield and Chur-Hansen, 2000).

Empathy is “the ability to enter the perceptual world of the other person: to see the world as they see it. It also suggests an ability to convey this perception to the other person” (Burnard, 1996, p.49). Empathy is differentiated from sympathy in the level of understanding for another person as described by Hough (1994) in Burnard, (1996):

The word ‘empathy’ is used to describe a particular characteristic which the counsellor should possess in relation to the client. When a counsellor is empathic it means that she is capable of understanding the client in the very deepest sense, that she can, when necessary, stand in the client’s shoes and perceive things as the client perceives them, and that she can also transmit this deep understanding back to the client who will be encouraged and supported by it. ... It is quite different from sympathy because sympathy is concerned with feelings of pity, compassion or tenderness towards another person, whereas empathy requires much more effort, concentration and discipline (p. 50).
Figure 2.1: Health Communication Model. (Adapted from Northouse and Northouse, 1998, p.17)
Davies described empathy as “momentary merging with another person in a unique moment of shared meaning” (p. 90). Northouse and Northouse (1998) described empathy as “the process of observing the world from another person’s point of view” (p. 71). In all definitions, empathy is the ability to ‘put oneself in another person’s shoes’ which then ensures a non-judgemental or condescending approach by the healthcare professional.

Nonverbal communication, the exchange that occurs without words, includes a large range of behaviours such as body motion, use of space, use of sounds (e.g. grunts, screams) facial expressions and touch (Northouse and Northouse, 1989; Davies, 1989). The purposes of nonverbal communication include:

1. The expression of feelings and emotions,
2. The regulation of interaction,
3. The validation of verbal messages,
4. The maintenance of self-image, and
5. The maintenance of relationships (Northouse and Northouse, 1989, p. 130).

One of the unique characteristics of professional interaction used by physiotherapists is the integration of verbal and nonverbal communication with communication through touch and movement (Poon, 1995; Davies, 1998; Jensen et al, 1990). As stated earlier, Jensen et al (1990) commented that expert physiotherapists appeared to use their hands as “a constant source of communication to the patient as well as used for intervention.” (p. 321). Communication through movement, common to physiotherapists’ interaction with clients, includes the demonstration of motor skills, use of manual guidance, assistive and resistive exercises and the use of play with children.

Finally, the environmental setting also influences an interaction (Northouse and Northouse, 1998; Dewey, 1938; Kolb, 1984). Environmental dimensions such as formality, warmth, privacy, constraint, distance and familiarity are believed to influence a client’s level of comfort in communication (Northouse and Northouse, 1998). Therapeutic interaction in physiotherapy, therefore, is the (best) integration of verbal and nonverbal with touch and movement approaches to communication, which are sensitive to the specific situation (Figure 2.2).
Communication through Verbal & Nonverbal

ENVIRONMENT

THERAPEUTIC PRESENCE

Professional Interaction

Communication through Movement

Communication through Touch

Figure 2.2: Components of Professional Interaction in Physiotherapy
Despite the importance of professional interaction in the practice of physiotherapy, relatively little information is available on the education of these skills. Educational reforms within many health care programmes have discussed the need to develop graduates who can effectively provide care to a variety of clients within a changing health care environment (e.g. Bligh, 1999; Shepard and Jensen, 1990). The common focus in traditional physiotherapy educational approaches has been to achieve competency in physiotherapy skills related to assessment (e.g. tests and measurement) and treatment (e.g. therapeutic exercise, manual therapy) in relation to a variety of medical conditions. The teaching approach commonly used, referred to as ‘army style’, follows the format of (1) teacher explanation then demonstration, (2) student practice with supervision then without, (3) teacher examination of student performance (Shepard and Jensen, 1990, p.567). Although, clinical competence in executing specific measures and treatments continue to be an important aspect of educating a competent physiotherapist, it is recognized that the ‘new’ physiotherapy graduate, will also be “a teacher, an administrator, a consultant and a researcher” (Shepard and Jensen, 1990, p.567). Educators may feel the need to continue to add more teaching of knowledge and skills to meet the growing expectations within the profession and society, this, however, does little for the development of flexible, independent practitioners. Alternative teaching and learning approaches are required.

**Experiential Learning**

Entry-level curricula for physiotherapists must develop practitioners who are able to adapt their professional interaction skills to fulfil diverse roles within a variety of settings with people of all ages. Limited information on how to develop therapeutic communication skills, however, is available (Jensen et al, 2000; Jensen et al, 1990; Hayes et al, 1999; Winefield and Chur-Hansen, 2000).

Effective performance of any skill, communication included, involves a complex learning process that requires an integration of knowledge and skills, adaptable to a variety of environments and clients. Although, some individuals may have a ‘natural’ ability to create positive interactions with older adults, most health care professions accept communication skills as an integral part of the educational curriculum (May et al, 1995; Davis, 1998; Winefield and Chur-Hansen, 2000).
Given the 'practical' and variable nature of professional interaction skills, traditional, didactic or 'army style' approaches to teaching did not seem appropriate for facilitating learning in this area. Davis (1998) and Burnard (1996) recommended the use of experiential approaches such as, self-awareness, reflection and real or simulated experiences to learn communication skills.

Many educational innovations have moved away from the traditional didactic, teacher-centred approaches to student-centred experience-based learning (Stanton and Grant, 1999). Recent theories of learning, experiential learning (Kolb, 1984; Jarvis, 1999; Weil and McGill, 1989; Boud et al, 1993), student approaches to learning (constructivism and phenomenography) (Biggs, 1999; Marton, 1981), problem-based learning (Miflin et al, 2000) and reflective learning (Kember et al, 2001) embrace the importance of the learner’s experience and the interaction between the learner and the learning environment to bring about a “conceptual change, not just the acquisition of information.” (Biggs, 1999, p.13). Social learning theories (e.g. Jarvis, 1998; Bandura, 1977) also highlight the role of the social environment including family, teachers, and culture on the process of learning.

**Kolb’s Model**

The physiotherapy curriculum document within the Department of Rehabilitation Sciences identified key teaching and learning methods that focused on guiding the students to become active and independent learners, including experiential learning, the use of problems to direct learning and reflective learning (Department of Rehabilitation Sciences, p.24-26). The model of experiential learning cited in the curriculum document was that of Kolb’s cycle of experiential learning which was adapted from Lewin (1946) & Dewey (1938) (Kolb, 1984). In Kolb’s model of experiential learning, the importance of the learner’s direct experience is emphasized, however, the learner progresses through a cycle of activities, the experience (feeling), reflection upon the experience (watching), abstract conceptualisation (thinking) and active experimentation (doing). According to Kolb, the learner can enter the cycle at any stage, but continues through all stages for learning to occur.

The experiential learning model of Kolb (1984) was identified by the Hong Kong faculty to guide the development of active student-centred learning in community settings. Drawing upon theories developed by reputable experts: John Dewey
(educational philosopher), Kurt Lewin (social psychologist) and Jean Piaget (educational psychologist), Kolb (1984) further justified and expanded the Lewinian model of action research to include a description of the learning process and identification of personal learning styles. The stages of learning, according to Kolb, included ‘feeling’ (‘concrete experience’), ‘watching and listening’ (‘reflective observation’), ‘thinking’ (‘abstract conceptualisation’) and ‘doing’ (‘active experimentation’) (Figure 2.3).

Kolb (1984) presented that the polar dimensions, concrete experience and abstract conceptualisation, were methods of ‘grasping’ information, while reflective observation and active experimentation were methods to ‘transform’ the information. He argued that each individual has a preferred method of ‘grasping’ information and one preferred method to ‘transform’ the information. Based on this, Kolb (1985) developed the Learning Style Inventory. Each of the four preferred learning styles is a combination of one method of ‘grasping’ information and one method of ‘transforming’ information: ‘doing and feeling’ (‘accommodator’), ‘feeling and watching’ (‘diverger’), ‘watching and thinking’ (‘assimilator’) and ‘thinking and doing’ (‘converger’). Subsequent literature, using factor analysis has questioned the Kolb’s polar dimensions and four learning styles measured with Kolb’s (1985) Learning Style Inventory (Loo, 1999).

Despite mixed support, however, the LSI has been considered a useful pedagogical tool to assist students in improving their own learning in a variety of situations (Loo, 1999). Regardless of the individual’s preferred learning style, to be an effective learner according to Kolb, progression through the entire cycle is required. Kolb argued that to be an effective learner, the individual should be able to use all learning styles. An awareness of one’s preferred learning style would highlight the areas of learning that needed to be developed. For example if an individual demonstrated a preferred learning style of ‘watching and thinking’ (assimilator), participation in learning activities that promote feeling and doing would enhance the individual’s learning capacity. Kolb (1985) also presented evidence that different professionals demonstrate different preferred learning styles.
Figure 2.3: Kolb's Cycle of Learning from Experience and Learning Styles (Adapted from Kolb 1985, p.4, 5)
The identification of students’ preferred learning style has been used to guide teaching to reach all students as well as to provide a framework for continuing lifelong learning (Wessell et al, 1999). Subsequent literature has questioned the validity of assessing learning styles as fixed ‘academic personalities’ that do not change with respect to the learning environment (Biggs, 1999). I was interested to use Kolb’s Learning Style Inventory to see how many of the Hong Kong physiotherapy students preferred experienced-based (feeling/doing) activities.

Although cited extensively in the adult learning literature (e.g. Boud, Cohen and Walker, 1993; Weil and McGill, 1989; Burnard 1998) Kolb’s model of experiential learning is not without criticism (e.g. Jarvis, 1998; Miettinen, 2000). In addition to Lewin, Piaget and Dewey, Kolb continued to draw support for his theory of experiential learning from other psychologists such as Carl Jung, Erik Erikson, Carl Rogers and Abraham Maslow as well as the radical educationalist Paulo Freire (Kolb, 1984). Kolb (1984) also integrated the neurophysiology literature on the laterality of the brain functions to further support his theory of the dipoles for grasping and transforming knowledge for learning. The integration of such a wide variety of theories and individuals has been termed an ‘eclectic’ approach and Kolb’s motives have been questioned by Mietten (2000):

Kolb’s motive is not critical evaluation or interdisciplinary but an attempt to construct an ‘attractive’ collection of ideas that can be advocated as a solution to the social problems of our time and to substantiate the usefulness of his learning style inventory (p.56).

Jarvis (1998) reported that Kolb’s model was oversimplified and “omits some of the stages and aspects of the (experiential learning) process” (p.48). Jarvis then expanded Kolb’s model to represent different types of learning including non-learning, non-reflective learning and reflective learning. One path of Jarvis’s model is similar to Kolb; it follows a circular cycle of experience, reflection, evaluation and experimentation. Other pathways ending in learning or change exist however, including non-reflective learning such as memorization and reflective learning such as contemplation. Jarvis’s point was that “individuals enter a situation and construct their experience” (p.50). Regardless of the learning experience created by the educator, the learner will construct his/her own learning or non-learning experience. The variations in types of learning as presented by Jarvis will be considered when evaluating the community-based experiences for older adults.
One criticism of experiential learning theory, in general, is that an individual cannot possibly learn everything through first-hand experience; much of our learning comes from the experience of others through vicarious or observational learning. To understand, for example, the pathology of a cerebral vascular accident (stroke), one does not necessarily need to experience having a stroke or even to have seen an individual who has suffered a stroke. It is difficult, however, to understand the manifestations of a stroke, such as problems in communication, abnormal muscle tone, muscle weakness, memory and judgement problems and their impact on a person’s life, if one has never interacted with individuals who have suffered a stroke. Similarly, students can grasp principles and techniques of professional interaction through didactic teaching approaches, however, to understand their use with ‘real’ clients, first-hand experience is essential (Burnard, 1996).

**Other Contemporary Educational Approaches**

Other recent educational approaches such as, problem-based learning and reflective learning have their roots in experiential learning. Problem-based learning, now fashionable within the education of health care professionals, uses ‘real’ problems (or case studies) to structure the learning for the student. The role of the ‘teacher’ or tutor is a facilitator of learning with the student expected to be more self-directed in their individual learning needs. According to Knowles, self-directed learning and a problem-centred orientation are considered to be characteristics of adult learners (Norman, 1999). Self-directed learning, does not, however appear to be ‘inherent’ in the adult learner, but needs to be ‘learned’ (Miflin, et al, 2000; Norman, 1999). Problem-based learning was not seen as an appropriate framework for creating the learning experiences for beginning physiotherapy students to interact with older adults, as the actual interaction experience with ‘real’ clients was considered essential. A written problem or case was not considered adequate.

Reflective learning and reflection in practice were learning concepts initiated by John Dewey, also founder of experiential learning. The need for health care professionals to reflect upon their work is considered essential for professional learning and expert practice (e.g. Schon, 1983, 1987; Kember et al, 2001). Given that ‘reflection’ is included in Kolb’s experiential learning model (1984), methods to enhance reflection
were incorporated in the learning experiences with older adults (details of the learning experience follow in Chapter 4).

Lastly, contemporary theoretical perspectives to student learning, constructivism and phenomenography, focus on understanding the nature of learning activities used by the student (Biggs, 1999; Marton et al, 1984). This learning theoretical perspective stems from the philosophical and research paradigm of phenomenology which “represents an orientation to human phenomena based on observable experiences of how things appear from the perspective of the humans under study.” (Shepard, et al, 1993, p.89). Using this theoretical basis, two learning approaches have been identified: deep and surface approaches to learning (Marton et al, 1984).

According to Biggs (1999), students who use a deep approach to learning:

- focus on underlying meaning: on main ideas, themes, principles or successful applications.... When using the deep approach in handling a task, students have positive feelings: interest, a sense of importance, challenge, even exhilaration. Learning is a pleasure. (p.16).

In contrast, students who use a surface approach to learning use low cognitive levels of activity to get the task done with minimal effort. According to Biggs (1999), students focus on:

- The words used, isolated facts, items treated independently of each other... Emotionally learning becomes a drag, a task to be got out of the way. Hence the presence of negative feelings about the learning task: anxiety, cynicism, boredom. (p.15).

Effective teaching, according to Biggs (1999), then creates an environment which encourages a deep approach to learning by building on students’ knowledge base, motivating students to continue to learn, keeping the learner active and encouraging interaction with others. These principles are consistent with experiential learning theory. The Study Process Questionnaire (SPQ) (Biggs, 1987) is a student questionnaire that can be used to evaluate students’ approach to learning and the teaching environment. Use of the SPQ may help to understand the impact of the teaching environment and will be discussed under evaluation of the learning experiences (see Chapter 3 for more on the SPQ).
Community-based and Service Learning

Community-based learning, a subset of experiential learning, is becoming increasingly popular in medical and allied health education (O’Sullivan et al, 2000; Boren et al, 1982; Faller et al, 1995; Knapp et al, 2000). Expected educational outcomes from using the community as the teaching environment include:

- input from greater numbers of patients and staff;
- broadening student definitions of the scope of medical intervention;
- increased interprofessional collaboration;
- improved recruitment to community-oriented specialties and ultimately, a different practice of medicine, and altered power relationships between the profession and the society which it serves (Howe, 2000, p.762).

A branch of community-based learning is service learning. Service learning has been differentiated from community-based learning with a distinction to the provision of a public service as a key objective, in addition to student educational objectives. Cohen and Kinsey (1994) define service learning:

...Service learning has a public-service component that relates directly to and that strengthens the academic component of a specific area of study. (p.6)

Seifer (1998) defines service learning:

as a structured learning experience that combines service with explicit learning objectives, preparation, and reflection.” (p.274).

Service learning experiences have been reported to develop empathy in occupational therapy students (Greene, 1998), to increase students’ social responsibility in addition to improving academic learning (Markus et al, 1993) to improve positive attitudes towards older adults (Bringle & Kremer, 1993) and to increase pro-social decision-making process (Batchelder & Root, 1994).

Service learning has been reported as a new educational concept within health care (Seifer, 1998), however, it could be argued that many clinical educational experiences for health care students provide a ‘service’ to the clients they attend. The definition and role of service-learning (primarily an American term), remains to be further clarified, however, the distinction of combining a community service along with specific student learning objectives is made in this project. At present, this project is not labelled as a service-learning project, however, the community-based educational experiences with older adults were developed with consideration to community as
well as student needs. My project will focus primarily on educational outcomes, however, community service outcomes will also be considered.

In the previous physiotherapy curriculum, there were limited educational activities for Hong Kong physiotherapy students in a community setting. The clinical placements were held almost exclusively in the large institutional, hospital settings. This was appropriate given most of Hong Kong's medical care was provided through large hospitals. Similar to other countries, however, Hong Kong has been restructuring its medical services and provision of health care in the community setting is of greater emphasis. One of the motives was for the implementation of early community-based learning experiences was to introduce the community as a potential health care setting to the students.

**Self-Efficacy**

**Self-efficacy, Self-concept and Outcome Expectations**

The second theoretical concept identified, came from Bandura's social cognitive theory (1986) and the understanding that perception or thought influences action. The Social Cognitive Theory (Bandura, 1986; 1982) emphasises that individuals are not simply passive receptors of experiences, but, interpret and evaluate their performance through self-reflection. The self-beliefs formed, then, in turn create and alter subsequent environments and actions (Pajares, 1996). This concept of the reciprocal relationship between personal factors, the behaviour and the environment is key to Bandura's social cognitive theory and the theory of self-efficacy (Bandura, 1977). The reciprocality among the three determinants highlights the multiple interactions that occur within human functions and allows individuals the opportunity to exercise some control over their destinies (Bandura, 1986, p.xi). A person's thoughts, self-efficacy beliefs in particular, are believed to have direct influence on one's actions.

The theory of self-efficacy (Bandura, 1977) recognizes the role of self-efficacy beliefs in personal agency (intentional behaviours). Perceived self-efficacy as defined by Bandura (1997) is "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments." (p.3), thus represents the individual's
judgement of his/her capabilities to perform within a specific domain of activities. As summarized by Bandura (1997):

In short, perceived self-efficacy is concerned not with the number of skills you have, but with what you believe you can do with what you have under a variety of circumstances (p.37).

Self-efficacy theory was chosen based on the educators’ reports that students lacked ‘confidence’ to interact in a professional manner. The term ‘confidence’ is a general ‘self-belief’ term that refers to an individual’s assurance of a belief (Bandura, 1997). Various forms of ‘self-beliefs’ related to human performance, motivation and learning have received increasing attention in the literature. Confusion with regards to the definition and usage of the self-efficacy construct and its relation to other self-beliefs, however, exists in the literature. Other prominent self-belief constructs related to self-efficacy include self-concept, self-esteem and outcome expectations. Clarification of these terms and self-efficacy is required.

Self-concept along with self-efficacy are probably the two most researched constructs (Bong and Clark, 1999; Pajares, 1996; Marsh et al 1999). According to Bong and Clark (1999) the common theme throughout a variety of definitions of self-concept is that it is a perception of one’s self “continually reinforced by evaluative inferences” and it “reflects both cognitive and affective responses.” (p. 140). The affective aspects incorporate the feelings of self-worth, of self-approval or disapproval. Self-esteem is typically referred to as the feelings of self-worth or the affective aspect of self-concept. Recent literature prefers the construct of self-concept to self-esteem.

Self-efficacy differs from self-concept. The difference is that self-concept attaches a value of worthiness (how one feels about oneself), while self-efficacy beliefs focus on what the individual believes can be achieved in a given situation. Bong and Clark (1999) described the difference between self-concept and self-efficacy:

Self-concept is judged to be more inclusive, at least in its theoretical (in contrast to operational) content, because it embraces a broader range of descriptive and evaluative inferences, with ensuing affective reactions. Self-efficacy emerges as a relatively unidimensional construct that largely embodies one’s cognitive perceptions of competence in a given domain. (p.142).

Outcome expectations are an individual’s judgement of the “likely consequences that a behaviour will produce.” (Pajares, 1996, p.554). Outcome expectancy beliefs are derived from the expectancy value theory which states that:
motivation is primarily a result of individual’s beliefs about the likely outcomes of the actions and of the incentive value they place on those outcomes (Pajares, 1996, p.554).

According to Bandura (1997), outcome expectations differ from self-efficacy in that self-efficacy is the strength in belief of ability to execute a given performance, whereas outcome expectation is a judgement of the likely consequences the performance will produce. Locus of control refers to an individual’s belief in the level of personal control one has over life events (Drew and Watkins, 1998). For example, a belief that academic outcomes are directly related to the amount of effort expended (internal locus of control). Conversely, a belief that regardless what the individual does, the outcome will not change (external locus of control).

The following is an example that illustrates the difference between academic self-concept, self-efficacy and locus of control. To assess academic self-concept, researchers may ask questions pertaining to thoughts and feelings about school performance, e.g. “how do you rate your ability in English compared to your close friends?” or more globally, “on the whole, I am satisfied with myself” (Bong and Clark, 1999). The measure of self-efficacy is specific to a particular domain and questions are targeted towards judgements of ability, e.g. “how sure are you that you can solve the cognitive problems in the next session at each of the levels (10%-100% of the problems) described below” (Bandura, 2001). Locus of control refers to what the individual believes will happen with a given behaviour. For example, academic performance reflects an aspect of oneself, is manageable by oneself (internal locus of control) or is under the power of others (external locus of control) (McAuley et al, 1992). In figure 2.4 (adapted from Bandura, 1997), the relationship between self-concept, self-efficacy and causality is illustrated.
The construct of self-efficacy has "enjoyed relatively more consistent operational definitions than self-concept" (Bong and Clark, 1999, p.146). When comparing the self-efficacy with self-concept literature, Bong and Clark (1999) reported, "self-efficacy predicts academic attainment better than does self-concept" (p.150). This is supported by a meta-analysis study conducted by Multon et al (1991) which examined the relationship of self-efficacy to academic outcomes. Multon et al (1991) concluded:

In summary, our findings suggest that self-efficacy beliefs are generally related to academic behaviours in ways that support Bandura’s (1977, 1982, 1986) theory and its extension to educational-vocational behaviour (p.36).

**Self-efficacy Causality Link**

Support for the causality link of self-efficacy and human performance was originally investigated with the treatment of phobic behaviour (Bandura, 1977, 1982). More recently, support for the theory has been reported in a variety of disciplines including academic achievement (e.g. Shunk, 1984; Holden et al, 1990; Multon et al, 1991; Pajares, 1996; Bong and Clark, 1999), psychology (e.g. Bandura, 1997), health care (e.g. Clark, 1996; Seeman et al, 1999; Petrella et al, 2000), athletics (e.g. Moritz et al, 2000) and organizational management (Bandura, 1997).

Within the area of academic achievement and career choice, self-efficacy beliefs have been reported to influence the range of perceived academic and career options as well as the persistence and success within the chosen options (Multon et al, 1991). Self-efficacy beliefs have also been found to better predict academic performance among college students than other theoretical approaches (Multon et al, 1991).
Perceived self-efficacy has been reported to enhance the performance of a skill directly, as well as indirectly by increasing persistence with the task (Figure 2.5) (Zimmerman, 1995). Thus individuals with high self-efficacy will participate in more challenging tasks, will work harder to achieve the task and will persist longer when difficulties are encountered. Bandura (2001) extrapolated further describing how self-efficacy beliefs influence human functioning.

Perceived self-efficacy plays a key role in human functioning because it affects behaviour not only directly, but by its impact on other key determinants such as goals and aspirations, outcome expectations, affective proclivities, and perception of impediments and opportunities in the social environment. Efficacy beliefs influence whether people think self-enhancingly or self-debilitatingly, optimistically or pessimistically; what course of action they choose to pursue; the challenges and goals they set for themselves and their commitment to them; how much effort they put forth in given endeavours; the outcomes they expect their efforts to produce; how long they persevere in the face of obstacles; their resilience to adversity; how much stress and depression they experience in coping with taxing environmental demands; and the accomplishments they realize. (p.2)

Given that an important learning objective most universities strive to achieve is to prepare their students for changing situations (e.g. lifelong learning) (Bowden and Marton, 1998), enhancing students’ self-efficacy in relevant areas seems an appropriate goal.

![Figure 2.5: Effects of Education on Self-efficacy, Persistence and Subsequent Performance. (Adapted from Shunk (1984) In Bandura (1995), p. 205.)](image-url)
Enhancing Self-efficacy

The sources of information that an individual uses to build or increase self-efficacy in a particular domain is explained by Bandura (1997):

self-efficacy beliefs are constructed from four principle sources of information: (1) enactive mastery experiences that serve as an indicator of capability; (2) vicarious experiences that alter efficacy beliefs through transmission of competencies and comparison with the attainments of others; (3) verbal persuasion and allied types of social influences that one possesses certain capabilities; and (4) physiological and affective states from which people partly judge their capableness, strength, and vulnerability to dysfunction (p. 79).

Enactive mastery, which is a successful experience, has been reported to be the most effective method of increasing an individual’s perceived efficacy to perform at a certain level in specified situations (Bandura, 1982; 1997).

The community-based learning experiences, (described in the next chapter) were designed to enhance physiotherapy students’ perceived efficacy to professionally interact with older adults using three of the above sources: enactive mastery (a positive experience), vicarious experiences and verbal persuasion. Students experienced interactions with older adults, students were able to watch other students and educators performing similar activities, and encouraging feedback was provided by the educator, fellow students and/or community members.

How an individual cognitively processes the information from a given situation occurs through two separate functions: (1) the type of information an individual attends to and uses and an indicator of personal efficacy, and (2) how the individual weighs the information from different sources to create the beliefs about their personal efficacy (Bandura, 1997). This highlights that each student has an individual development of efficacious beliefs.

Measuring Self-efficacy

In his guide to constructing scales to measure self-efficacy, Bandura (2001), emphasized the importance of measuring perceived capability by using the term ‘can do’. The strength of ability is usually measured using a scale of 0-100% or 0-10. Bandura (2001) also emphasized the domain specificity and multidimensionality of self-efficacy. An individual’s performance is better predicted with specific than global measures of self-efficacy. One’s academic ability, for example, may differ in
mathematics, social sciences, English, computer studies, science, etc. The multidimensionality of self-efficacy refers to the varying levels of performance required within a specific domain of activities. The example of driving a car can illustrate this, driving on a familiar road with little traffic is a much less challenging task than driving on an unfamiliar, narrow mountain road.

Bandura (1997) cautions against the value of generalized self-efficacy measures and emphasizes its multidimensionality:

In coming up with a global judgment, respondents must not only weigh and average self-referent information but also delimit the scope of activities and conjure up levels of challenges (p. 40).

In social cognitive theory, an efficacious personality disposition is a dynamic, multifaceted belief system that operates selectively across different activity domains and under different situational demands, rather than being a decontextualized conglomerate. (p. 40)

The domain of self-efficacy evaluated in this project is physiotherapy students’ efficacy to interact with older adults in a professional manner. The questionnaire used to measure students’ self-efficacy to interact in a professional manner with older adults will be discussed further in the following chapter.

**Summary**

In summary, this chapter has examined the need for the development of community-based learning experiences to enhance students’ self-efficacy to interact professionally with older adults. Support provided within the Department of Rehabilitation Sciences curriculum document was presented. Professional and theoretical foundations from the literature were then discussed including the importance of effective professional interaction skills and the lack of evidence regarding the education of these skills. Experiential and community-based learning were justified as approaches to enhance learning of professional interaction skills. Based upon educators’ reports that students were lacking in confidence in professional interaction, self-efficacy was a chosen construct to measure following the learning experiences. The nature of self-efficacy and its link with performance was discussed. Specific aims and objectives of the learning experiences are discussed in a later chapter (Chapter 4). The following chapter (Chapter 3) discusses the research paradigm, methodology and methods for this study.
Chapter 3

Research Paradigm, Methodology and Methods

Introduction

The overall research framework used in this thesis was action research. The action research approach, which alternates between reflection and action, was used to create a series of research cycles to evaluate the community-based learning experiences with older adults and to characterise students’ self-efficacy to interact with older adults in a professional manner (Figure 3.1). Within each research cycle a main research theme was identified as well as appropriate research methodologies and methods to ensure systematic and rigorous procedures. Action research was the chosen research orientation for three main reasons. The first two were methodological considerations. The cyclical or spiral approach of action research encourages change during the research process based upon reflection of key observations and findings within each cycle. This responsiveness to the needs of students and community members was considered essential for the development of the community learning experiences. Secondly, in action research, the practitioner (educator) as well as the ‘subjects’ (students and clients) are an integral part of the research process. In this study, I participated as both educator/practitioner and evaluator, while students and clients provided valuable feedback. The third reason for choosing this paradigm was based upon the desired outcome of the research. As the name implies, the fundamental aim of action research is to stimulate action to improve practice, eliminating the theory-practice gap (Elliot, 1991). One of the overall aims of this project was to introduce community-based learning experiences as a new curricular development as well as to introduce students to older adults in community setting early-on in the physiotherapy programme.
Figure 3.1: Research Plan (Diagram adapted from Bligh, 1999)
Although the overall research orientation chosen was action research, few studies in educational research use purely one research paradigm. Candy (1989) provided a framework dealing with hybrid or eclectic research approaches. He described the three research paradigms of positivistic, interpretive (naturalistic) and critical (action research, AR) as related rather than discrete or mutually exclusive. The interaction between the three research paradigms is viewed as a triangle (Figure 3.2), where each axis represents a common element between two paradigms (Candy, 1989). For example, interpretive and critical (action research) approaches share a rejection of the positivistic view that human behaviour is determined by universal truths. Positivistic and interpretive paradigms, commonly viewed to be at opposite ends of the research spectrum, share an attempt to be objective in relation to the data (e.g. do not endorse the practitioner-researcher). Finally, the critical (AR) approach and positivism share an acknowledgement of a wider context to be understood beyond the experiences of those being studied (Candy, 1989).

![Figure 3.2: Research Approaches (adapted from Candy, 1989, p.8)](image)

In many research projects, a hybrid approach can be identified along any axis or within the triangle, based upon the blend of principles implemented. As identified by the black circle in the interior of the triangle (Figure 3.2), this research study is closest to the action research paradigm, however, at times has utilized a naturalistic

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Figure 3.2: Research Approaches (adapted from Candy, 1989, p.8)
approach (e.g. grounded theory), while at other times has implemented an experimental approach (e.g. pretest-posttest design). At points within cycles of this project, the research has shifted away from action research to gain a greater understanding of the research questions. For example, in cycle 4 of this study, an in-depth understanding of the nature and construct of self-efficacy was required. To achieve this, the study has deviated from action research to a combination of naturalistic (e.g. grounded theory) and positivism (e.g. factor analysis) (see Cycle 4, Figure 3.2). Similarly, to provide a greater understanding of the influences of the community-based learning experiences on students’ self-efficacy to interact professionally with older adults, a pretest-posttest design was used, shifting the approach closer to positivism (Cycle 3, Figure 3.2). The triangle will, therefore, be used to identify the specific research approach implemented within each research cycle of this study.

This chapter begins with an overview of Action Research, its challenges, and research methodologies. A description of the methodologies and methods used in each cycle of this study follows.

**Action Research**

Action research has been used in a variety of social settings including, industrial, health, education and the community with the main aim to understand and resolve the day-to-day problems faced by practitioners (McKernan, 1996). Action research is used by practitioners who wish to improve their understanding of specific situations, with the goal to increase the effectiveness of their practice. “The fundamental aim of action research is to improve practice...” (Elliott, 1991, p.49). A broadly accepted definition of action research from Carr and Kemmis (1986) states:

It can be argued that three conditions are individually necessary and jointly sufficient for action research to be said to exist: firstly, a project takes as its subject-matter a social practice, regarding it as a form of strategic action susceptible of improvement; secondly, the project proceeds through a spiral of cycles of planning, acting, observing and reflecting, with each of these activities being systematically and self-critically implemented and interrelated; thirdly, the project involves those responsible for the practice in each of the moments of the activity, widening participation in the project gradually to include others affected by the practice, and maintaining collaborative control of the process (p.165-166) (underline added).
As noted in the underlined text above, the three main elements of action research are: (1) the subject matter is a social practice; (2) the project progresses through a series of cycles of planning, acting, observing and reflecting; (3) the participants in the project are involved in the research process.

The unique aspects of the action research paradigm include its spiral or cyclical nature in addition to the inclusion of the researcher and participants in the research process (Jarvis, 1999). Both of these factors are contrary to scientific (positivism) and interpretive views of research, where the research methods are consistent, external variables are controlled for as much as possible, and the researcher is an unbiased external observer (Carr and Kemmis, 1986). Fulfilling traditional research criteria in education is often unfeasible and provides limited insight into the educational situations studied, as described by Carr and Kemmis (1986):

Of course the actual achievements of the positivists’ search for these laws are not very impressive and theories that could be used to predict and control educational situations are almost non-existent. In accounting for this state of affairs, some researchers have pointed to the practical difficulties caused by immense complexity of the variables involved in educational situations… (p.79)

Action research was first implemented by Lewin (1946), as a research approach used to address inter-group relations in Connecticut, USA. Dissatisfied with “superficial (research) methods” and the “growing realization that mere diagnosis … does not suffice” (p.37), Lewin (1946) endeavoured to find a deeper approach to “give insight into the motivations behind the sentiments expressed” (p.37), a “research leading to a social action” (p.35). Lewin is well known for his statements reflecting action research:

Nothing is as practical as a good theory.
The best way to understand something is to try to change it.

The cyclical nature of action research, as described by Lewin (1946), started with a general idea, then continued through the following steps: (1) Examine the idea and create a plan to reach objectives and first step of action; (2) Execute the first step; (3) Analyse the first step through fact-finding by: (a) evaluating action, (b) gathering new general insight, (c) planning the next step and (d) modifying the overall plan; (4) Continue the cycle of planning, acting and evaluating for the second step, preparing the rational for the third step, and modify the overall plan as required (Figure 3.3).
A simplified version of this reflective model is often currently used: Reflect, Plan, Act, Observe (Kember and Kelly, 1994).

Figure 3.3: Lewin's model of Action Research, Adapted from Lewin (1946) and Elliot (1991).
Although, Lewin is most cited as the founder of action research, some have noted an earlier link of the educational philosopher, John Dewey (1910), with the foundations of action research (McKernan, 1996; Greenwood and Levin, 1996). Dewey’s epistemological view was that knowledge is produced through cycles of action and reflection, which result in the best possible solutions within a specific context. Dewey’s understandings of the connections between knowledge, action, community and democracy, were similar to the tenants of action research (Greenwood and Levin, 1996). The cyclical nature of both experiential learning (Founder: Dewey, 1910) and action research (Founder: Lewin, 1946) include similar stages of: acting or experience, reflecting and thinking and planning or experimenting (Figure 3.4).

![Figure 3.4: Cycles of Action Research (Carr and Kemmis, 1986) and Experiential Learning (Kolb, 1984)](image-url)
Action research in education was popular during the post-war era (1946 to late 1950s). In the 1960s, however, the focus shifted towards a scientific model, which separated practice and research and contributed to the theory-practice gap (McKernan, 1996). The teacher-researcher movement in the 1970s (e.g. Stenhouse, 1975) and 1980s, promoted a resurgence of action research as a method to improve teaching practice through an improved understanding of one's own teaching methods (McKernan, 1996). As the research knowledge was acquired by the practitioner, action research claimed to have a greater potential for implementing change than research conducted by those external to the practice (Burchell, 2000). In the current economic climate along with increased consumer advocacy, demands for evidence-based educational practices are increasing, from the individual teacher, to curriculum evaluation, to strategic educational planning (Davis, 2002). With this increasing focus on best practice within education, the action research paradigm may shift from one used for the ‘development of practitioners’ (e.g. Carr and Kemis, 1986) to the “contribution to the ‘production of knowledge’” (Burchell, 2000, p.264). Although conflicts may exist (see next section), in this thesis I support the use of an action research paradigm to enhance practitioner understanding as well as contribute to knowledge, given the use of appropriate methodological approaches.

**Challenges of Action Research**

The cyclical nature of action research, which allows for and encourages modifications to the research plan, may present a challenge in justifying the rigour of the research. Lewin and others (e.g. Kemmis and Carr, 1986; Elliot, 1991; Winter, 1996; Jarvis, 1999), however, assert that through critical review and the application to real life situations a greater purpose can be achieved than by non-applied theoretical accounts.

A second challenge in implementing action research is the potential lack of generalisability of the results. Traditional research approaches strive to achieve results that can be generalized to wider populations through strict controls and objectivity. Results from action research projects, however, because of their responsive nature and specificity to a particular situation, often do not lead to global generalisable conclusions, which must be carefully considered when interpreting and discussing the results of a project. This does not imply that lessons learned in one project cannot be applied to another. Knowledge gained from one project can be
used in a new context provided a critical assessment links the two contexts (Greenwood and Levin, 1996).

Finally, challenges in implementing an action research project are also related to issues of the practitioner-researcher. As stated above, Lewin (1946) felt the participation of the community members in the research process was essential to bring about a change in inter-group relations. Jarvis (1999) presented some of the difficulties related to practitioner-researcher, for example in my project, ethical issues related to educating the students, assisting the older clients, as well as conducting research. The practitioner-researcher must keep the best interest of the students and clients at the forefront at all times.

**Methodologies**

Within action research there are several methodologies cited across disciplines, although a consistent classification of these methodologies is lacking. Dick (1993) a psychologist, presented four methodologies: participatory action research, action science, soft systems and evaluation. McKernan (1996) an educational researcher presented historical, philosophical classifications: scientific-technical, practical-deliberative, critical-emancipatory and time process model, within the educational field. Schmuck (1997) an educational psychologist, proposed three practical methodologies of action research; two are based upon the study’s starting situation (either proactive or reactive) and a third, cooperative action research, focuses on establishing good working relationships between groups (e.g. administrators, parents, teachers, specialists, students, community groups). Finally Greenwood and Levin (1996), social researchers, described six types of action research: pragmatic, participatory, action science, human inquiry, educational and participatory evaluation. Greenwood and Levin introduced their model – pragmatic action research - which uses democratic rules to guide a change, in equal partnership with the participants of the change process (see Table 3.1).

Based on these varied and inconsistent classifications of action research, determining a methodological approach is challenging. According to Dick (1993), my project would be classified as participatory action research with elements of evaluation (evaluation is discussed below). Participatory action research is a common approach in education (e.g. Carr and Kemmis, 1986; Elliott, 1991; Zuber-Skerritt, 1992).
this methodological approach the purpose of the research is ‘emancipation’ of participants, including those being researched. The framework for the research consists of four steps identified earlier: plan, act, observe, reflect. According to Schmuck (1997) this is a proactive study and according to Greenwood and Levin (1996) it is educational action research. Similar to McKernan’s (1996) time process model, my project draws upon elements of practical-deliberative, scientific-technical, and critical-emancipatory models.

Clearly, strict research methodologies within action research do not exist. In fact, this would be contradictory to the aims of action research, which attempt to understand a specific situation. Despite the confusing methodological approaches, the basic tenants of action research remain: (1) research of a social process, (2) progression through cycles (3) involvement of researcher and participants. McKernan (1996) provided ten characteristics of the action research process:

1. It examines problems which are deemed problematic by practitioners.
2. These problems are deemed solvable.
3. Such problems require a practical response.
4. Action research suspends a full definition of the situation until exploratory research is undertaken.
5. The goal is to deepen the researcher’s understanding of the problem.
6. Action research uses case study methodology in an attempt to ‘tell a story’ about what is going on and how events hang together.
7. The case study is reported in terms of the perceptions and beliefs of those in the setting – teachers, children, etc.
8. Action research uses the language of everyday discourse employed by the participants.
9. Action research can only be validated in unconstrained dialogue by the participants.
10. There must be a free flow of information within support groups and between actors in the project. (p.31)

Depending on the type of methods or data collection and analysis utilized, procedures to ensure rigour of the data are required.
### Table 3.1 Action Research (AR) Methodological Approaches

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<tbody>
<tr>
<td>Participatory* (e.g. Whyte, 1991)</td>
<td>Scientific-technical (e.g. Lewin, 1946; Dewey, 1938)</td>
<td>Proactive*</td>
<td>Educational AR*</td>
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</table>

(*indicates possible classification of Action Research in this thesis)

### Evaluation

This study includes an evaluation of the community-based learning experiences (cycles 1 to 3, see Figure 3.1). According to Dick (1993), evaluation in action research includes a variety of methodologies implemented with the purpose of evaluating a system. The system is evaluated using process evaluation to understand how resources and activities have an effect on targets and ideas. Information from the process evaluation is used to set performance indicators which estimate the
effectiveness of the system. Evaluation in this context is analogous with ‘total quality management’. This study is not using evaluation in such a large scale.

Evaluation research is commonly used within educational and clinical programs “to determine if a program should be implemented, if it is fully or partially successful, and if it should be continued or modified.” (Portney and Watkins, 1993, p.302).

Using this definition of evaluation research, the first three cycles of this study are similar to evaluation research. In the first and second cycles, the feasibility of implementing the community-based learning experiences and the educational needs were addressed. In cycle three, the effectiveness of the learning experiences was assessed, including future recommendations.

Evaluation research can be classified as formative or summative. Formative evaluation focuses on the process of program planning and/or implementation, while a summative evaluation examines the outcomes of a program. This study has elements of both formative and summative evaluation. For example, assessment of students’ self-efficacy in professional interaction with older adults before and after the community-based learning experiences is an outcome measure, therefore, a summative evaluation. Collection of students’ feedback regarding the value of the learning experiences and assessing the feasibility (cycle 1) are aspects of formative evaluation.

Designs and methods of evaluation research may be experimental, quasi-experimental or descriptive, depending upon the type of programs to be evaluated, the objectives of the research, and the desired outcomes. Research methods used within each cycle of this study are discussed later in this chapter.

Limitations of evaluation research include biases present within a social context, such as examiner biases and subject biases. Complex evaluations examining multiple program goals make the assessment of success more difficult, e.g. which goals are the most important? Long term goals are often difficult to evaluate, as most evaluations do under-take long term studies. Lastly, the results obtained from an evaluation may not be later used or applied within the area evaluated (Portney and Watkins, 1993). This problem should be less of an issue in action research where the practitioner is conducting the research.
Methods

Methods of data collection commonly employed in action research include both quantitative and qualitative methods. Common sources of data collection include: keeping a diary, minutes of meetings, written questionnaires, observations using checklists, interviews (individual and group), and tape or video-recordings (Winter, 1996).

In addition to the use of appropriate methods within action research, at times within the research cycles, this study has shifted away from the action research apex to gain a more in-depth understanding into the research questions. Methods associated with the other research paradigms, naturalistic and positivism (see Figure 3.2), have therefore been utilized.

Grounded theory and Qualitative analysis

Within naturalistic studies, grounded theory is an increasing popular research method. Grounded theory first presented by Glaser and Strauss (1967), was developed in reaction to positivist research which seemed to be veering further away from the social practices it was meant to be explaining (Kinach, 1995). In a grounded-theory approach, qualitative data (e.g. observation, interviews) are used to understand a specific situation and participants. An essential aspect of a grounded-theory approach is that the researcher approaches the data with an ‘open mind’, which allows the research themes or theory to emerge from the data. Pandit (1996) outlined nine steps to the grounded theory method:

1. search the literature to define research questions
2. select sample based upon theoretically use, not random sampling
3. develop rigorous data collection procedures, triangulation of data
4. analyse data as collecting, identifying themes
5. order data
6. analyse data, coding and developing themes, concepts and categories
7. theoretical sampling or re-sample
8. saturation of themes
9. comparison of emergent theory with literature.

Ensuring the credibility or validity of data is of issue in any study. The use of qualitative data collection methods are increasingly common in a variety of disciplines including education, health care, psychology, sociology and business
studies (Miles and Huberman, 1994), but are subject to criticism within the research community. The analysis of qualitative data must be conducted completely and thoroughly. Miles and Huberman (1994) reported that the analysis consists of the following activities: (1) data reduction, (2) data display, (3) conclusion drawing and verification.

To test and confirm findings of qualitative data analysis, Miles and Huberman (1994) cited thirteen steps to address the four Rs: representativeness, reactivity, reliability and replicability. The steps begin with assessing the quality of the data, progress to verifying patterns within the data, then end by critically assessing interpretations and conclusions. The steps include:

1. checking for representativeness
2. checking of researcher effects
3. triangulating
4. weighting the evidence
5. checking the meaning of outliers
6. using extreme cases
7. following up surprises
8. looking for negative evidence
9. making if-then tests
10. ruling out spurious relations
11. replicating findings
12. checking out rival explanations
13. getting feedback from informants (p.263).

**Triangulation of Data**

Of special note within the analysis and interpretation of qualitative data is the concept of triangulation. Triangulation refers to the process used to verify information collected using qualitative methods, in particular. To substantiate interpretations, multiple sources of information are collected using different modes of collection. As described by Miles and Huberman (1994), triangulation can be achieved by using a variety of: data sources (e.g. persons, times, places, etc.), methods of data collection (e.g. observation, interview, written questionnaires), data type (e.g. qualitative, quantitative); input from various researchers (investigator A, B, etc.); and substantiation from theoretical sources.
Quantitative Methods

One Group Pretest-posttest Design

Elements of a positivistic research approach were utilized as appropriate, in particular the one pretest-posttest design in cycle 3. The one-group pretest-posttest design is a quasi-experimental design which uses one set of measures taken on one group of subjects before and after the intervention or innovation (Portney and Watkins, 1993). The effect of the innovation is assessed through a comparison of pretest and posttest scores. Within experimental research, this design is considered weak because it is lacking a control group, implying measured changes could have occurred as a result of temporal or maturational factors. As Kember (2003), points out however, using a control group within educational research often has practical difficulties, e.g. separating groups, student protests, contamination between groups, and comparability between the groups. The Hawthorn or halo effect is also often problematic as the educator is often more enthusiastic implementing the innovative approach. Lastly, using a control group implies that research variables can be identified and controlled. In educational settings complex and unforeseeable variables are common. Using a control group, therefore, was not considered appropriate for this study.

Characterisation of Self-efficacy: Factor Analysis

The characterisation of self-efficacy to interact professionally with older adults included both qualitative analysis as well as factor analysis. The purpose of factor analysis is to examine the structure of a construct within a large group of variables, with the purpose to describe the relationship among identified groups of variables (Portney and Watkins, 1993). The factor analysis examines inter-correlations among the variables, then groups the variables into statistically related factors. Each factor is comprised of a number of variables, which are somehow related to each other. Once the computer sorts the variables into factors, the researcher must then examine the variables within each factor to identify the common construct or theme. Naming the factors is a subjective task, which often becomes the basis of criticism for the analysis. In cycle 4 of this thesis, themes identified in the factor analysis were compared with themes identified in qualitative analysis to characterise students’ self-efficacy in professional interaction. Further description of methods is each cycle follows.
Research Approach within this Study

An action research approach was chosen as the most appropriate framework for this study for three main reasons. The first two reasons were methodological considerations. The cyclical or spiral approach of action research encourages change during the research process based upon reflection of key observations and findings within each cycle. This responsiveness to the needs of students and community members was considered essential for the development of the community learning experiences. Secondly, in action research, the practitioner (educator) as well as the ‘subjects’ (students and clients) are an integral part of the research process. In this study, I participated as both educator/practitioner and evaluator, while students and clients provided valuable feedback. The third reason for choosing the action research paradigm was based upon the desired outcome of the research. As the name implies, the fundamental aim of action research is to stimulate action to improve practice, eliminating the theory-practice gap (Elliot, 1991). One of the overall aims of this project was to introduce community-based learning experiences as a new curricular development as well as to introduce students to older adults in community setting early-on in the physiotherapy programme.

As illustrated in Figure 3.5, this study spirals through four yearly cycles based upon implementation of the community–based learning experiences. Within each yearly cycle the modifications and developments have a research theme, although not all developments within the cycle were limited to this theme. The first cycle represents the first year of implementation, the pilot study, which addressed the question of feasibility of the community learning experiences with 150 first year physiotherapy students. The evaluation of these data, presented in Chapter 5, provided the base for my further study. My research questions that emerged from the initial feasibility cycle are presented in Table 3.2.
Students experience multi-faceted professional interaction with older adults

Figure 3.5: Research Plan: Methods and data sources (Diagram adapted from Bligh, 1999)
<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Research Methods</th>
<th>Analysis of Data</th>
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<tbody>
<tr>
<td><strong>Feasibility (Chapter 5)</strong></td>
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<tr>
<td>Is the implementation of community-based learning experiences sustainable for</td>
<td>Written questionnaire: student feedback</td>
<td>Descriptive statistics</td>
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<tr>
<td>beginning level physiotherapy students (n=150) in Hong Kong?</td>
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<td><strong>Student Needs (Chapter 6)</strong></td>
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<tr>
<td>What is the profile of Hong Kong physiotherapy students’ preferred learning</td>
<td>Learning Style Inventory questionnaire (LSI)</td>
<td>Descriptive statistics</td>
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<td>style? Is there a need for experiential learning?</td>
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<tr>
<td>What are the students’ preferred approaches to learning?</td>
<td>Revised Study Process Questionnaire</td>
<td>Descriptive statistics</td>
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<tr>
<td>How much interaction do entering physiotherapy students in Hong Kong have with</td>
<td>Written questionnaire</td>
<td>Descriptive statistics</td>
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<td>older adults?</td>
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<td>What is beginning first year students’ level of confidence to interact in a</td>
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<td>professional manner with older adults?</td>
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<td>Is there a correlation between students’ level of confidence to interact in a</td>
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<td>professional manner with older adults and preferred learning style, approach to</td>
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<td>learning, and frequency of contact with older adults?</td>
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<td>How does students’ level of confidence in professional interaction across the</td>
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<td>lifespan vary over the three year curriculum?</td>
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<tr>
<td><strong>Effectiveness of Community-based Learning Experiences (Chapter 7)</strong></td>
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<tr>
<td>Does students’ self-efficacy in professional interaction with older adults</td>
<td>Written questionnaire: close and open ended questions</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>increase following the community-based learning experiences?</td>
<td>Focus Group Interviews: Student written reflections from integrated project</td>
<td>Comparison of means pre and post</td>
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<tr>
<td>What aspects of the community-based learning experiences to students find most</td>
<td>Questionnaire / Interview: older adult participants</td>
<td>learning experiences using t-test</td>
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<td>beneficial?</td>
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<td>Grounded-theory approach to</td>
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<td>Do the community-based learning experiences benefit the community</td>
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<td>analyse &quot;themes&quot;</td>
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<tr>
<td>participants?</td>
<td></td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>**Characterisation of Self-efficacy to Interact Professionally with Older Adults</td>
<td>Focus Group Interviews: first, second and third year students</td>
<td>Qualitative Analysis</td>
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<tr>
<td>(Chapter 8)**</td>
<td>New Long Questionnaire</td>
<td>Factor Analysis</td>
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<td>What is the characterisation of Self-Efficacy to interact in a professional</td>
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<td>manner with older adults?</td>
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During the second cycle, the theme was understanding students' educational needs (Chapter 6). The theme for the third cycle was a deeper understanding of the learning experiences and how they benefited student learning (Chapter 7). Based on student feedback requesting more community-based learning experiences with frail older adults, the third cycle also included the initiation of a new community-based learning experience - Walking and Talking with Frail Older Adults. The ‘theme’ for the fourth cycle was the characterisation of self-efficacy to interact with older adults in a professional manner (Chapter 8).

In this study, the methods of data collection included written questionnaires for student and faculty feedback with both closed-ended and open-ended questions, focus group interviews with students and short interviews of older adult participants. The specific methods and data sources employed during each cycle are presented in Table 3.3.

**Focus Group Interviews**

Two sets of focus group interviews were conducted one year apart, the first set of interviews focused on the value of the community-based learning experiences, while the second set focused on the characterisation of self-efficacy to interact professional with older adults. Questions drafted as a framework for the first focus groups interviews followed the format recommended by Kreuger (1998), opening question, transition question, key questions and ending questions (see Appendix 7a). These questions were used as a framework to facilitate discussion during the focus group interviews. Most questions were covered within a one to one-and-a-half hour session with three to seven students. After four focus group sessions, I added two more questions to the framework: What difficulties or challenges do you encounter in the clinical setting when interacting with older people? and What are some of the characteristics of the most difficult type of older ‘patients’ to interact with in the clinical setting?. These questions were added to collect information regarding difficulties students face when interacting with older adults in the clinical setting. The responses to these questions were used to develop an understanding of students’ self-efficacy to interact with older adults in a professional interaction.

In the second set of focus group interviews, the main theme was the characterisation of self-efficacy to interact professionally with older adults. Key questions in these interviews focused on students’ reflections on how their level of confidence to interact
with older adults had changed within their three year programme and what learning experiences best helped to improve their confidence (see Appendix 7b).

Sampling and Procedures
For the first set of focus group interviews (n=11 groups), students in their first and second year of the physiotherapy programme were interviewed. Third year students at this time were not interviewed as they were the final cohort of students studying the 'old' curriculum, thus had not participated in the community-based learning experiences. A year after the first set of focus group interviews, a second set (n=6), was conducted with third (final) year students (cohort 1 of the new curriculum). Final year students were chosen as they could reflect upon the development of their self-efficacy to interact professionally with older adults throughout the programme.

Focus group interviews were conducted with physiotherapy students during the latter half of their clinical placement. The list of clinical education units was reviewed to determine which centres had a large percentage of older adult clients, as this would provide the students with recent clinical experience with older adults. Permission was obtained from the Clinical Educator to interview the students during their free time, e.g. lunch hour, or at the end of the day. For most focus groups, I travelled to the clinical setting to conduct the interviews, however, two groups were conducted on a Saturday at the university. All groups were conducted in a private room and were tape-recorded. Informed consent to participate in the focus group interviews and to permit audiotape recording was requested and obtained from students prior to commencing the session (see Appendix 11 for consent form). Students were instructed on general procedures of a focus group prior to initiating questions (e.g. students did not have to take turns to answer, responses should be open and honest, there were no 'wrong' answers).
Table 3.3: Summary of Action Research Cycles and Research Methods

<table>
<thead>
<tr>
<th>Cycle One: Feasibility of Community-based Learning Experiences with Older Adults</th>
<th>Cycle Two: Assessment of Educational Needs</th>
<th>Cycle Three: Outcomes of the Community-based Learning Experiences with Older Adults</th>
<th>Cycle Four: Characterisation of Self-efficacy to Interact with Older Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort 1</td>
<td>Cohorts 1, 2, 3</td>
<td>Cohorts 2, 3</td>
<td>Cohorts 1, 2, 3, 4</td>
</tr>
<tr>
<td><strong>Educational Experiences</strong></td>
<td><strong>Data Sources</strong></td>
<td><strong>Baseline Data</strong></td>
<td><strong>Data Sources</strong></td>
</tr>
<tr>
<td>I. Exercise partners with older adults</td>
<td>1. Exposure to Older Adults (Appendix 3)</td>
<td>1. Exposure to older adults (Appendix 3)</td>
<td>1. Focus group interviews</td>
</tr>
<tr>
<td>II. Social Visits</td>
<td>2. Self-efficacy to interact professionally with Older Adults (Appendix 4)</td>
<td>2. Self-efficacy to Interact Professionally with Older Adults (Appendix 4)</td>
<td>2. Self-efficacy to Interact Professionally with Older Adults (Short: Appendix 4; Long: Appendix 10)</td>
</tr>
<tr>
<td><strong>Data Sources</strong></td>
<td>3. Revised Study Process Questionnaire (Appendix 5)</td>
<td><strong>Educational Experiences</strong></td>
<td></td>
</tr>
<tr>
<td>1. Exposure to older adults</td>
<td>4. Kolb's Learning Style Inventory (Appendix 6)</td>
<td>I. Exercise partners with older adults</td>
<td></td>
</tr>
<tr>
<td>2. Student Written Feedback (Appendix 1)</td>
<td>5. Focus group interviews (Appendix 7)</td>
<td>II. Social Visits</td>
<td></td>
</tr>
<tr>
<td>3. Students' Written Individual Reflections</td>
<td></td>
<td>III. Walking and Talking with Frail Older Adults (New experience)</td>
<td></td>
</tr>
<tr>
<td>4. Self-efficacy in Professional Interaction Across the Lifespan: Pre &amp; Post Clinical Education (Appendix 2)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

52
Focus group discussions were conducted in English, as I do not speak or understand Cantonese, the Chinese dialect spoken by most Hong Kong students. Students were encouraged to voice their opinions in Cantonese if they were unsure of how to express themselves in English. Other students in the group could then help to translate their opinions into English. None of the students objected to speaking English and they appeared comfortable with the English discussion. I recognize that more free flow discussion may have occurred in Cantonese, however, students’ comments appeared to be open and honest.

Analysis
All tape-recorded interviews were transcribed by myself within one week of the focus group interview. Ideas expressed by students were noted, when ideas became repetitive, further groups were not conducted. A grounded-theory approach was implemented to identify themes that emerged from the focus group interviews. Transcribed notes from all focus groups were analysed and grouped into categories according to the content of the discussion. Comments relating to categories were combined, then themes were identified. For example, comments relating to value of the community-based learning experiences, those relating to challenges encountered in the clinical setting when interacting with older adults, or recommendations for future learning experiences were combined. Themes within each category were then identified and categorized (see Chapters 6, 7, and 8 for presentation of themes and data). Quotations provided in this thesis were chosen as they were typical of students’ responses. Quotations were identified according to the cohort of the student (1, 2, or 3); the year of student (year 1, 2 or 3); the assigned number during data entry, and the learning experience questionnaire (e.g. wch= the learning experience at Wong Chuk Hang Multiservice Centre for the Elderly Exercise Partners with Older Adults, sv= Social Visits; wk= the learning experience at Wah Kwai, Walking and Talking with Older Adults) or focus group. For example, the notation: coh2yr1wch#86 indicates the student was in the second cohort of the new curriculum, was in first year of their programme, written feedback from the questionnaire following the Exercise with Older Adults (at Wong Chuk Hang) learning experience and their data entry number was 86.
Instrumentation / Questionnaires

This study has used written questionnaires to collect student feedback following the community-based learning experiences and to measure students' self-efficacy to interact with older adults in a professional manner. The written feedback questionnaire used in the first cycle was modified for the second and subsequent cycles (see Cycle Two, p. 41) (Table 3.3). This one page questionnaire was designed to collect students' feedback regarding a change in self-efficacy to interact professionally with older adults, their rating of the learning experience, their recommendation to continue the learning experience and open comments.

As no published questionnaire was available to measure self-efficacy to interact with older adults in a professional manner in physiotherapy, a pilot questionnaire was designed to collect this information (see Appendix 4). This questionnaire was written with age (e.g. 60-74 years and 75+ years of age) and type of problem (e.g. physical, emotional or cognitive problems) as the main factors that would affect students' efficacy in professional interaction. These were chosen by the teaching team, based upon preliminary feedback from the students and the team's clinical judgement.

Published questionnaires were used in cycle two (Chapter 6), Kolb's Learning Style Inventory (Kolb, 1985) and the Revised Study Process Questionnaire (Biggs et al, 2001), to assess students learning styles and approach to learning, respectively. Kolb's Learning Style Inventory was chosen as the curriculum document identified Kolb's model of experiential learning as an approach to enhance active learning. Secondly, the questionnaire has also been used to assess learning styles of physiotherapy students in Canada (Wessell et al, 1999), thus comparison with Hong Kong students may be useful. Thirdly, given the exam-based educational approach traditionally used in Hong Kong secondary schools, students may be lacking in active, experiential types of learning, resulting in fewer students preferring active learning styles (e.g. active experimentation). This would support a need for more learning opportunities in this area (see Cycle 2, for more information).

The revised Study Process Questionnaire (R-SPQ-2F) (Biggs et al, 2001) is a shortened version of the original Study Process Questionnaire (SPQ) (Biggs, 1987a,
1987b) developed from the ‘student approaches to learning theory’ (SAL) (Biggs, 1993; Entwistle and Waterston, 1988) to assess how students approach their learning tasks. The strategies to learning measured by the original SPQ were deep, surface, or achieving (Biggs et al, 2001), however, the achieving-related scales have not been as useful as the deep and surface scales (Biggs et al, 2001). Students who use a deep approach to learning are intrinsically interested, while students who adopt a surface approach are often afraid of failure and use the minimal amount of time to pass the subject. Confirmatory factor analysis of the R-SPQ-2F supported the two factors (deep and surface) and acceptable reliability was demonstrated (Cronbach alpha 0.57-0.72) (Biggs et al, 2001).

Uses for the SPQ, as stated in Biggs, et al (2001) include:

1. Teachers monitoring their teaching from class to class, or following some innovation in teaching or assessment in an action research design.
2. An outcome measure of teaching in a more formally structured research.
3. Suggesting to staff developers where teachers or departments may need help.
4. Diagnosis of students with study problems, by comparing individuals’ deep and surface scores and comparing individuals to others in the same cohort.
5. Examining the relationship of approaches to learning with other curriculum variables with a view to fine-tuning curricula based on the insights obtained.
6. Quality assurance exercises in much the same way as the Course Experience Questionnaire is used in Australia to monitor students’ perceptions of courses. In this last case institutions would keep their own norms but they would be used on a class or departmental basis, not on the basis of an individual student.

(p.140)

**Methods for Each Research Cycle**

**Cycle One: Feasibility** (Chapter 5)

The predominant approach in this cycle was action research using questionnaire data (quantitative and qualitative) to determine the feasibility of continuing the community-based learning experiences (Figure 3.6).
Reflect
A review of the curriculum identified that physiotherapy students were lacking in confidence to interact in a professional manner with older adults.

Plan
The main purpose of this cycle was to determine the feasibility of implementing two novel community-based learning experiences with older adults for 150 first year physiotherapy students. The first learning experience was Exercise Partners with Older Adults, the second was Social Visits, both are described in detail in the following chapter (Chapter 4).

Act
The community-based learning experiences were implemented by one faculty member, with assistance from community partners, in the first semester of the first year of the physiotherapy curriculum. Feedback was collected both from students and from exercise participants.

Student feedback was collected anonymously in the form of a written questionnaire, (Appendix 1), at the end of each community-based learning experience. The questionnaire was designed by the faculty member who implemented the community learning experiences. Students were given the feedback questionnaire at the end of each community learning experience. The questionnaires following Exercise Partners with Older Adults were collected the following day in class. Feedback questionnaires regarding the Social Visits were submitted along with the Class Action Project assignment, one week after the learning experience. The
questionnaire measured students’ confidence to interact in a professional manner with older adults, students’ rating of the quality of the learning experience and students’ recommendation to continue the learning experiences.

Verbal feedback was collected from the exercise participants. Clients were asked the following questions: (1) Today, how do you rate your health?; (2) Did you notice any improvement in your health status after the exercise programme? (3) Have you had any dizziness in the past month? (4) Have you had any falls since the exercise programme (in the past 6 months)? (5) How would you describe your pace of walking? (6) Did you benefit from the exercise programme? If yes, how did you benefit: emotionally (I felt better), socially (I enjoyed the people), physically (I can do more)? (7) Have you continued to perform exercises from the class? (8) Did you enjoy talking with the students? (9) Did your student exercise partner increase the benefit of the exercises? (10) In future, would you participate in more exercise classes of this type?

Observe

Data from the questionnaires were analysed using Microsoft Excel. Details of the analysis of the results from this cycle are described in Chapter 5.

Cycle Two: Understanding Student Needs (Chapter 6)

The predominant approach in this cycle was also action research, with the use of questionnaires to examine students’ educational needs in this area (Figure 3.7). The correlation of findings was also used. This cycle had less of a naturalistic approach.

![Figure 3.7: Research Approach in Cycle 2](image)

Reflect

The need to better understand students’ educational needs in interaction with older adults on entering the physiotherapy programme was identified. Two main areas to
be assessed were students' prior experience with older adults and students' level of confidence to interact with older adults. In addition, students' learning styles and approaches to learning were assessed.

**Plan / Act**

The Personal Experiences with Older Adults questionnaire was drafted to determine students' frequency of contact with older adults. In the first cycle, students were asked if they had contact with older adults over the age of 60 years. In the second cycle, older adults were divided into two age categories (60-74 and 75+ years) (see Appendix 3).

A second questionnaire was drafted to measure students' level of confidence to interact with older adults age 60-74 years and 75 years and older, with and without problems (i.e. physical, cognitive and emotional) (see Appendix 4). To determine which response scale (0-10 or 0-100) was more appropriate to use, both scales were provided for each question. Students were instructed to choose the scale they preferred to use (0-10 or 0-100) to respond to the questions. This questionnaire was given to all first year students in class prior to the community-based learning experiences.

Considering the project began with Kolb's model of experiential learning as a theoretical background, I felt it would be useful to profile the students' preferred learning style using Kolb’s Learning Style Inventory (see Appendix 6). Given that Hong Kong students are often considered to use more passive (less experiential) learning styles (Watkins and Biggs, 1996), I was interested to assess their learning styles. First and second year students (cohorts 1 and 2) completed the inventory at the end of the academic year.

Given the questionable educational foundation for using learning styles to design learning activities (Biggs, 1999; see Chapter 2, p. 13), I also included the Revised Study Process Questionnaire (see Appendix 5) in the profile of the physiotherapy students as this was being used in other programmes in The Hong Kong Polytechnic University.
Similar to Cycle One, student feedback was collected following the community learning experiences. On review of this questionnaire in the first year, modification to the first question was required. The original questionnaire consisted of three questions. The first question was: Based on this experience, how confident are you that you can interact with older adults, as a Physiotherapy student, in upcoming Physiotherapy assessment and exercise procedures? The response categories were: Very Confident, More Confident, No Change in Confidence and Not Confident. We recognized that students could respond ‘no change in confidence’ if they were already high in confidence or if the experience was not adequate to change a low level of confidence. This response category was, therefore, divided into two responses: No Change (Already Confident) and No Change (Still not Confident). The other questions and responses were not modified.

A post-clinical education questionnaire (Appendix 2), was used by my colleague to provide information regarding students’ clinical education experiences. One question on this questionnaire was relevant for my study – Professional Interaction Across the Lifespan. This question asked students to rate their level of confidence to interact in a professional manner with a variety of individuals that they may encounter during their clinical placements, including: educators (university-based and clinic-based), staff within the physiotherapy department (professional and non-professional), hospital based staff (e.g. doctors, nurses, occupational therapists), hospital administration staff, a small group of classmates (not necessarily personal friends), students of other health professionals, infants, children (with and without disabilities), parents of children receiving treatment, adults (with and without disabilities) and older adults. Students wrote a number from 0 to 10 (0=Not at all confident and 10=completely confident) in a space beside each item (16 in total) to reflect their level of confidence.

Post-clinical education questionnaires were to be given to students following each of their clinical placements [one at the end of year 1 (2 weeks for cohort 1, then 4 weeks after that); two placements in year two (6 weeks and 7 weeks), and three placements in year three (7 weeks, 7 weeks and 3 weeks)]. Information collected during these intervals was used to track the students’ changes in level of confidence as they progressed through the programme. Data were collected for cohort 1.
throughout the three years of the physiotherapy programme. Unfortunately, when cohort 1 was finishing third year, I was no longer a staff member in the Department of Rehabilitation Sciences and experienced difficulty in accessing the students, therefore the number of third year students who completed the questionnaire was a smaller sample (n=25).

Observe
Analysis and results of data are presented in Chapter 6.

**Cycle 3: Effectiveness of Community-based Learning Experiences**
(Chapter 7)
The predominant approach in this cycle combined elements of qualitative and experimental research methods to evaluate the effectiveness of the community-based learning experiences (Figure 3.8).

![Figure 3.8: Research Approach in Cycle 3](image)

Reflect
Towards the end of the second cycle, my research questions were becoming more specific, requiring a more in-depth understanding of the learning experiences. It was apparent that a more rigorous method of measuring students' change in confidence could be obtained by measuring students' level of confidence before and after the community learning experiences. In addition to students' written feedback, deeper information from students would assist in understanding the benefits of the learning experiences.

Based on student feedback, the need for a new community-based learning experience, which would expose students to older adults with more complex problems, was identified.
As discussed earlier in this chapter, focus group interviews with first and second year students were identified as a means to collect qualitative data to understand the benefits of the community learning experiences from the students' viewpoint. Students (n=3 to 8) were interviewed during the latter half of their clinical placement to ensure exposure to older adult clients. The focus groups were continued until saturation of the ideas was identified. A total of eleven groups were conducted during this time (summer 2000), six groups with year two students, and five groups with year one students.

A further modification to the students’ feedback form was required. It was noted that the responses to the first question were measuring two constructs, level of confidence and change in confidence. For comparison purposes between cohorts of students (years of implementation), the first question measuring change in confidence was not altered. For the third implementation of the community-based learning experiences, however, an additional question was added to measure actual level of confidence: *What is your current level of confidence to interact with older adults, as a Physiotherapy student, in upcoming Physiotherapy assessment and exercise procedures?* The response provided was 0-10 visual analogue scale, with 0=not at all confident and 10=complete confidence. This type of scale is consistent with other instruments that measure self-efficacy (e.g. Bandura, 1997). (See Appendix 8 for modified feedback questionnaire). Student feedback obtained after each of the learning experiences was confidential.

For the third cycle, therefore, measures of self-efficacy were obtained when students first entered the programme, after each community learning experience and at the end of the first semester. Baseline measures included: (1) Personal Experiences with Older Adults, (2) Confidence in Working with Older Adults, and (3) Interaction / Communication Skills Across the Lifespan. The ‘Confidence in Working with Older Adults’ questionnaire was re-administered at the end of the semester. Students used their student identification numbers to identify themselves, to allow for comparison.
Based on student feedback requesting more community experiences with older adults with problems, a third community-based experience was developed – Walking and Talking with Older Adults (described in the following chapter).

Verbal feedback was collected from the exercise participants (see cycle 1).

Observe

Data from the written questionnaires were entered into Microsoft Excel for descriptive analysis. Students’ open-ended written comments and focus group discussion were analysed qualitatively, using a grounded-theory approach discussed earlier. Results for this cycle are presented in Chapter 7.

Cycle 4: Characterisation of Self-efficacy (Chapter 8)

Similar to cycle 3, this cycle veered away from action research, towards the positivist and naturalistic poles, combining qualitative analysis with factor analysis to characterise self-efficacy (Figure 3.9).

Figure 3.9: Research Approach in Cycle 4

Reflect

The nature and structure of self-efficacy within the domain of professional interaction with older adults required deeper understanding.

Plan / Act

Focus group interviews were conducted with first, second and third year students to identify themes regarding the characterisation of self-efficacy to interact professionally with older adults.

Themes were identified using a qualitative analysis approach. Miles and Huberman (1994) present the following sequence of analysis:
1. Assigning codes to a set of field notes drawn from observations, interviews.
2. Noting inflections or other remarks.
3. Sorting and sifting through data to identify similar phrases, relationships between variables, patterns, themes, ...
4. Isolating these patterns, ... commonalities and differences, and taking them back into the field for the next wave of data collection.
5. Gradually elaborating a small set of generalizations that cover consistencies identified in the database.
6. Comparing generalizations with existing theoretical constructs and properties. (in Bailey, 1997, p.158)

In this analysis, two main areas were addressed:

I. The multidimensionality of self-efficacy within the domain of professional interaction with older adults.

II. Sources of self-efficacy: How the students perceive they build their self-efficacy in this domain.

A grounded-theory approach was implemented to analyse the multidimensionality of self-efficacy. Grounded-theory was not utilized to identify sources of self-efficacy, as Bandura’s sources of self-efficacy (see Chapter 2): (1) mastery experience; (2) vicarious observation; (3) verbal persuasion; (4) physiological and affective states, were used as a beginning template. Other themes reflected in students’ comments were also identified.

Based on students’ comments during the focus group interviews regarding difficulties in professional interaction with older adults faced in the clinical setting were identified and a pilot questionnaire was developed. Factor analysis was used to reduce the data and confirm identified themes.

Observe

Analysis and results are presented in Chapter 8.

Summary

This chapter has discussed the research approach, methodologies and methods relevant to this thesis. A description of the community-based learning experiences with older adults is provided in the next chapter (Chapter 4), which is then followed by a presentation of the results within each research cycle (Chapters 5,6,7,8).
Chapter 4

Description of the Learning Experiences

Aims and Objectives of Community-based Learning Experiences

The overall educational objective for the community-based learning experiences with older adults was to provide students with an experiential base in professional interaction with older adults from which they, and educators could subsequently draw upon. The overall aim of the community-based learning experiences was to increase students' confidence to interact with older adults in a professional manner. The community-based experiences were integrated into three first semester subjects: *Principles of Physiotherapy Practice*, *Professional Seminars* and *Development of Motor Behaviour*. The hours for the experiences and some of the content related information were within the *Principles of Physiotherapy Practice* subject. In *Professional Seminars*, students wrote entries in their reflective journals about what these experiences meant to them. The experiences with older adults were integrated into lectures of lifespan motor development in *Development of Motor Behaviour*, and students submitted a group project in which they analysed and reflected upon their experiences and data they collected from visits with older adults and children. The integration of these experiences in three concurrent subjects was considered important to assist the students to participate in all parts of the experiential learning cycle: experience, reflection, abstract conceptualisation and active experimentation. An integration of the community-based learning experiences with the characteristics of Kolb’s Learning Cycle (1985) is shown in Table 4.1. The use of Kolb’s learning cycle was adopted from the curriculum document and the teaching team.

Secondary educational objectives for the community-based classroom were to provide students with an exposure to community settings (the people and the environment), an introduction to group exercise with community dwelling older adults, and an opportunity to give service to the community. In addition to direct interaction with older adults, students acquired an appreciation for exercise abilities of community-dwelling older adults as well as some of the social challenges facing older adults in Hong Kong.
Table 4.1: Kolb’s (1984) Learning Cycle and Community-based Learning Experiences with Older Adults.

<table>
<thead>
<tr>
<th>Learning Cycle</th>
<th>Characteristics (Kolb 1985)</th>
<th>Multi-service Centre for Elderly 4 hours n=150 students</th>
<th>Home Visits 8 hours n=100 students</th>
<th>Day Camp 8 hours n=50 students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Experience (feeling) (problem finding)</td>
<td>Personal involvement Rely on FEELINGS Open-minded, adaptable</td>
<td>Interaction as an exercise partner with older adults in a community centre.</td>
<td>Interaction with older adults in their homes.</td>
<td>Interaction with an older adult at a Day Camp</td>
</tr>
<tr>
<td>Reflective Observation (watching/listening) (question asking)</td>
<td>Careful observation to make a JUDGEMENT View from different perspectives Rely on thoughts and feelings. Looking for the meaning.</td>
<td>Observation of the movement and interactions of older participants. (WE)* Share reactions and feelings with classmates and faculty member. (WE) Written reflections: Journal Entries (AE) and Integrated Project (AE)</td>
<td>Discussion of experiences and feelings with social workers following the interviews. (WE) Written reflections: Journal Entries (AE) and Integrated Project (AE)</td>
<td>Observation of the movement and interactions of older participants. (WE) Written reflections: Journal Entries (AE) and Integrated Project (AE)</td>
</tr>
<tr>
<td>Active Experimentation (doing/testing) portrayal of knowledge</td>
<td>Experimenting with changing situations. Practical approach Get things done Influencing through action.</td>
<td>Try different methods to interact with older adults and teach exercises. (WE) Written assignment: Integrated Project (AE)</td>
<td>Try different methods of interviewing with older adults to obtain specific information. (WE) Written assignment: Integrated Project (AE)</td>
<td>Try different methods of communicating and assisting older adults. (WE) Written assignment: Integrated Project (AE)</td>
</tr>
</tbody>
</table>

*WE = within the learning experience; #AE = after the learning experience
The unique features of the new educational experiences developed to enhance physiotherapy students' confidence to interact with older adults in a professional manner included:

1. Each student had first-hand experience in interacting with older adults.
2. The experience occurred in first semester of the first year of the programme.
3. The community was chosen as the setting for the interactions.
4. Students' self-confidence to interact in a professional manner with older adults was chosen as a construct to enhance and evaluate.

**Specific Learning Experiences**

Two levels of experiences with older adults were implemented: *Exercise Partners with Older Adults* and *Social Visits*. Both of these learning experiences were developed in collaboration with the Aberdeen Kai-fong Welfare Association Social Service Centre and were based upon their expressed needs: (1) to help their older clients to be more active and (2) to assist them to collect information from identified homebound older adults. For the first level of experience, exercise partners with older adults, students accompanied a faculty member to a community centre for older adults. For the second experience, students functioned more independently, and interacted with community workers (e.g. social workers) to conduct interviews in older clients' homes or to escort an older client to attend a Day Camp.

**Exercise Partners with Older Adults**

In the first learning experience, *Exercise Partners with Older Adults*, students interacted one-on-one with the older clients with the guidance of a faculty member. The total number of first year physiotherapy students (n=150) were divided into six practical groups comprising 25 or 26 students in each group. The Wong Chuk Hang Multi-service Centre for the Elderly did not have a room that would accommodate this number of students and an equal number of older adults, so each practical group was divided in half, comprising 12 or 13 students. To ensure that all students participated in one exercise class, twelve exercise classes were scheduled for the first semester (October and November). Older adult volunteers were recruited by the staff at the multi-service centre. The response was very positive and of those who
expressed interest, 45 older adults were confirmed to attend the exercise classes. Participants were divided into three exercise groups with approximately 15 older adults in each group, thus each older adult attended four sessions. A faculty member was present at all classes.

Students participated in the following tasks, teaching specific movements to older adults, leading exercise/activity demonstrations, collecting information, and sharing findings and impressions in a small group discussion. The specific learning objectives, as provided to the students, were:

To observe a specific community-based service setting for older adults, a Multi-service Centre for the Elderly (e.g., environment, professionals, staff and clients).
To interact with older adults, using words or demonstrations appropriate to their level of understanding [you act as the therapeutic agent; this concept is discussed in Professional Seminar I].
To administer objective tests, including measures of perceived ability and actual physical performance.
To promote effective exercise for an older adult in a group exercise setting by functioning as an ‘exercise partner’.
To teach or guide movements, using either assistance or resistance.
To evaluate the performance of a specific client, in particular his/her posture and balance ability, in comparison to the other participants or to individuals of different age [e.g., Berg Balance Scale Item Checklist for your project in Development of Motor Behaviour].
To write an entry in your Reflective Journal [Professional Seminar I] with regards to your thoughts and feelings about this ‘exercise partner’ community-based experience (replaces University-based ‘laboratory’).

The specific flow of activities during the class, Exercise Partners with Older Adults, was as follows. Students met with the faculty member in one of the laboratory teaching classrooms in the university where the students were given an overview of the class. Students practiced techniques they would be teaching the older adults on themselves, pulse rate and a diaphragmatic breathing. The faculty member ensured that all students had a watch with a second hand or stop watch for measuring pulse rate, a name tag, a written report form to be completed after the class (see Appendix 12) and two 5*7 index cards (one white and one coloured). Students were informed about the information to be collected from the clients and recorded on the index cards; the student kept the white copy and gave the colour copy to the instructor. Students and the faculty member travelled together on the bus (approximately 20 minutes) to the community centre. On arrival to the community centre, students were shown how
to set-up the room for the exercise class and a slogan such as “exercise improves function” was written in Chinese on a white board for the clients. As the clients began arriving, one student would introduce him/herself to a client and commence the interaction. Information collected and recorded included: date, student’s class number and name, client’s name, sex, and age. The student measured the client’s pulse rate, then taught the client to measure his/her own pulse rate. This sequence was repeated three times and values recorded on the index cards. After the students collected the relevant information from the clients, the instructor started to lead the exercise class which lasted approximately one hour. Students participated with their older partner, teaching, assisting or resisting exercises and providing encouragement as required. At the end of the exercise class, students said their good-byes to the clients. A discussion was then held between the instructor and the students which focused on students’ observations of posture and balance of the older adults as well as their impressions of their communication with the older adult participants. Finally, the room was put back into order (see Table 4.2 for a summary of activities).

Students completed the ‘Exercise Partners Lab Report’ (Appendix 12), which was collected by the instructor the following day. In the lab report students summarized and reflected on experiences during the class. Feedback regarding students’ level of confidence to interact in a professional manner was also collected anonymously (see below for evaluation of learning experiences).
### Table 4.2: Flow of Activities for, Exercise Partners with Older Adults

<table>
<thead>
<tr>
<th>Time</th>
<th>Student Activity</th>
</tr>
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</table>
| 1:30-2:00  | Teacher provides an overview of the specific community setting (professionals, staff, clients), the role of a physiotherapist in this setting and what the students will be doing during this class. Students practice taking a pulse, diaphragmatic breathing. Students are given a written report form: *Aberdeen ‘Community Classroom’ – Laboratory Experience with Older Adults* (Appendix 12) All students need a watch with second hand or stopwatch. If necessary, a stopwatch was provided on-site. All students need a name tag (write Chinese name w/ large characters in black marker) or PolyU ID Name Tags Two 5*7 INDEX CARDS are given to each student.  
- White (for student to keep)  
- Colour (copy for the instructor)  
  The same information is to be recorded on each card:  
- DATE; Class number and name;  
- Client’s name; male or female; age;  
- Pulse rate  
  FIRST, student takes client’s pulse rate (sPR) THEN teach client to take his/her own pulse (cPR). Perform this sequence 3 times and record the six numbers in two columns.  
- How many times the client can stand up and sit down in 10 seconds (# times/10s) |
| 2:00-2:30  | Travel to Community Centre                                                                 |
| 2:30-3:00  | Set-up the Exercise Room                                                                |
| 3:00-3:30  | Clients arrive. Each student pairs-up with an older adult.  
Student introduces him/herself.  
Students interact and asks questions. |
| 3:30-4:30  | Exercise Class starts and is lead by faculty member.  
Students participate one-on-one helping older adult perform the exercises.  
One or two students translate the English instructions given by the faculty member into Cantonese for the participants. |
| 4:30-5:30  | Good-bye to clients.  
Discussion with faculty member on student observations focusing on posture and balance of clients and communication.  
Room left neat and tidy. |
| NEXT DAY   | Exercise Partners Lab Report collected from students.                                      |
Social Visits

During the second level experience, Social Visits, the students interacted directly with community workers to prepare for the home visit (n=100) or escorts to the Day Camp (n=50). An introductory preparation session conducted by the community social workers in a community setting explained to the students their role during the home visits and day camp. The session in preparation for the home visits provided students with relevant information on interviewing skills, and students safety (e.g. mobile telephone numbers were distributed). The community organization (Aberdeen Kai-fong Welfare Association Social Service Centre) provided students with name badges to show their identity to the clients.

For the home visits, prospective homebound older adults to be interviewed were chosen by the community organization. Students were divided into 10 groups (10 students per group), each had a group leader who carried a mobile telephone. Each group travelled with a community social worker to a government housing estate within the area of Aberdeen in Hong Kong. A housing estate consists of 10 blocks of apartment buildings, each around 20 storeys high. The size of the apartments varied from 100-300 square feet. Students were given the names and addresses of prospective clients, then travelled in pairs, to the client’s apartment and conducted the interview. If the client was not at home students were instructed to go to the next client on their list or to telephone the community representative for another address. It was planned that each student would conduct two interviews during the morning and two interviews in the afternoon. Information collected during the interview would help the Wong Chuk Hang Multi-service Centre for the Elderly plan their home-help services. Following the morning interviews, students re-grouped to discuss any difficult situations encountered, for example, clients were not at home, clients were arguing with neighbours, clients who refused to allow students to enter the apartment, difficulties asking sensitive questions relating to income, clients who were upset and cried, etc. A similar debriefing was held at the end of the day.

For the Day Camp activity older adults requiring assistance to attend were identified by the community organization. The briefing session, conducted by the community workers, prepared students (n=50) to assist clients who were physically disabled (e.g. in a wheelchair, using a walking aid) to attend a Day Camp. Persons of all ages and
from various regions in Hong Kong attended the Day Camp. Activities held during the Day Camp included entertainment (e.g. the lion dance), singing, participation in games, and arts and crafts. The student helpers met their older clients early in the morning, assisted them onto the bus, and stayed with them throughout the day. Students assisted clients in all aspects from helping the client go to the washroom, to participation in the games, to just social interaction.

One week following their social visits, students submitted a Class Action Project report (Appendix 13) The report asked the students to identify their clients (1-4) in terms of age, gender and health status. In part one, students were asked to select two clients to describe and compare in terms of mental, social, physical and emotional functioning and to describe the environment that the client lives in. Other questions asked were what services the client was currently using (e.g. medications, social services), did the student provide any service to the client and what recommendations could the student provide that would help improve the client’s condition. In part two, students were asked to select five (5) objectives from the subjects of Development of Motor Behaviour (RS264), Principles of Physiotherapy Practice (RS263) and Professional Seminar (RS261) which this community-based experience has allowed the student to achieve.

**Walking and Talking with Frail Older Adults**

This ‘new’ community-based learning experience, implemented in Cycle 3 of this project (see Figure 3.3), was developed in response to students’ feedback requesting more interaction with older adults who have problems (physical, cognitive and/or emotional). A community centre within the Aberdeen Kai-fong Welfare Association Social Service Center, the Wah Kwai Day Care Centre for the Elderly, was chosen as the venue. Older adults attending this centre have physical, cognitive or emotional problems, which restrict their ability to function independently during the day.

Similar to Exercise Partners with Older Adults, this learning experience was designed to replace teaching previously conducted in the university. Students attended this community-based activity in their tutorial groups (n=26 students). An information booklet describing location of the centre, objectives and learning activities was given to the students one week prior to the visit. The objectives of this community-based learning experience were to provide students with the opportunity to:
• Interact with frail older adults, asking questions and teaching skills.
• Interact with care-workers within the centre.
• Observe the functional level of older adults in a day-care centre, allowing for comparison with those attending a multi-service center (exercise partners).
• Assess ambulation and adjust height of walking aids.
• Implement selected functional outcome measures.

Learning activities during the three hour learning experience included:

1. An initial briefing session to prepare students for the activities. Students were reminded of the importance of attending to the client at all times.
2. Interaction with older adults using selected questionnaires (e.g. General Health Status, Abbreviated Mini-mental Test, Vitality Plus Scale, Activity needs and falls checklist).
3. Interaction with care-workers (e.g. discussing good body mechanics and safe transfers, principles of exercise and home exercises for older adults)
4. Assisted ambulation clinic (e.g. adjustment of height of walking aids, 6-minute Walk Test, obstacle course, quadriceps strength)
5. Demonstration of exercise equipment in the centre (e.g. the Cybex Kinetron, IL)
6. On site discussion lead by the instructor regarding the learning activities.

Following the learning experience students completed a report and provided feedback similar to the two previous community learning experiences (see Appendix 14).
Chapter 5

Cycle 1: Evaluation of Pilot Learning Experiences

This chapter is a summary of the results from the first implementation of the community-based learning experiences with older adults. Based on the results, conclusions are discussed and further research questions are developed.

Educational Outcomes from Pilot Community-based Experiences

Many of the first year physiotherapy students (64%: n=89) reported limited (monthly or less) interaction with older adults with almost half (46%: n=64) of the students reporting seldom interaction with older adults. A smaller portion of students (18%: n=25) reported more regular (monthly) interaction with older adults.

The response rate for the feedback questionnaire provided following each of the community learning experiences was 92% (n=134) for exercise partners, and 83% (n=121) for social visits. Most students reported to be very confident or an increased confidence to interact with older adults (exercise partners: 74%, n=99; and social visits: 85%, n=103) (Figure 5.1).

In response to the overall assessment of the learning experience, most students rated the quality of the learning opportunities with older adults as good or above (97%: exercise partners; 94%: social visits). Through written comments provided on the feedback forms, many students expressed that they valued the learning experience [e.g. 74%: exercise partners (n=99/133)]. More specifically students expressed that this learning experience (exercise partners with older adults) helped to improve their communication/interaction skills and confidence with older adults (42%), was meaningful and/or enjoyable (40%), provided valuable practical experience which helped them to link theory with practice (35%), was valuable for their future career (15%), and highlighted the needs of older adults in their community (12%). Comments from the social visits experience reflected similar themes.
Figure 5.1: Students' Reported Level of Confidence to Interact in a Professional Manner with Older Adults following Community-based Experiences
Overwhelmingly, students recommended the continuation of the community-based learning experiences (*Exercise Partners with Older Adults*: 95%(n=7); *Social Visits* 93%(n=8). Of the few students who did not recommend continuing the learning experiences (n=7 and n=15, respectively), the predominant reason was that they felt their university-based timetable was too busy to allow them the time to participate in the community-based activities. Students expressed they found the class interesting and/or useful, however they felt that they had inadequate time in their schedule.

...Although this kind of lesson can allow us to be more familiar with the elderly, our PT lessons are so packed and tough that we cannot use too much time to participate in this kind of community classroom (coh1yr1wch #86).

Although this small number of students did not recommend continuing the learning experiences, some suggested the experiences be conducted during a time when they were not so busy (e.g. during the summer holidays).

...It is good to the physiotherapy student but the curriculum is so tight it (social visits) should be held in spare time or optional choice (coh1yr1sv#63).

This activity gives me an opportunity to talk with one elderly person at a time face-to-face, which is very rare in daily life. After this activity, I am of course more confident in interaction with older people. It is a valuable experience. However, it is too time-demanding. The workload of a PT student is already high, it is no good to FORCE all PT year 1 students to participate in an activity which eats up a whole day. The activity is best arranged to hold in another time such as day after the examinations or in a long vacation (coh1yr1sv#61).

One student commented that the two learning experiences did not provide the students with enough experience, and preferred to have more ongoing opportunities with a variety of older adults.

It is not a very new thing for me to deal with elderly so I think I can manage the skill to communicate with them, though not very good. The experience obtained in this session is very limited, since every student could only deal with one or two elderly, this can't reflect the real situation since humans are so different between each other. It would be better if we could have continuous chances to deal with different elderly / children with various background (coh1yr1wch#108).

Other students (n=11) suggested improvements including, more community-based activities with older adults (n=6), a larger venue for the exercise class (n=4), a prior briefing session to clarify objectives of *Exercise Partners with Older Adults* (n=1), and increasing the variety of exercises during the class because the client had become too familiar with the exercises, thus the student did not gain practice teaching the client (n=1).
Further insight into students’ perceptions of the community-based learning experiences was gained from their individual reflections written as a component of the Integrated Project assignment under the subject Development of Motor Behaviour. Students were asked to reflect upon their own reactions/feelings towards interacting with children and elderly during the community experiences. On review of the students reflections (n=145) the common themes regarding the community-based visits that emerged included: improved communication skills with older adults (at least 68%; n=99), the relevance for professional development and their future career (at least 29%; n=42), the promotion of a more positive attitude towards the ability of older adults (at least 28%; n=41), helped to link university-based teaching with practical skills (theory-practice link) (at least 26%; n=37), and enjoyment working with older adults (at least 23%; n=23).

Feedback collected from the older clients who participated in Exercise Partners with Older Adults indicated they benefited and enjoyed the classes. All (n=15) clients reported they benefited from the classes, more specifically, emotionally (93%; n=14), socially (80%; n=12) and physically (60%; n=5). Sixty per cent (60%) reported continuing their exercises from the class. All (n=15) of the clients enjoyed talking with the students and reported they appreciated the assistance given by them. All but one of the clients (n=14/15) stated they would participate in more exercise classes of this type.

**Summary**

The first outcome noted from the initial pilot experiences was that the Hong Kong physiotherapy students had limited (monthly or less) interaction with older adults. This limited experience may contribute to ageist stereotyping and communication problems often seen in young health care practitioners (Bethea and Balazs, 1997). Limited experience can also contribute to lower levels of confidence as evident in Bandura’s (1997) description of enactive mastery as one of the sources of efficacy. Voluntary written comments provided by some students following the community-based experiences reflected this possibility:

... I feel that the elderly is not as troublesome as I expected. Some of them are very nice... (cohlyr1wch #33).
Questions that arise from this: How much interaction with older adults do entering physiotherapy students have? Is exposure to older adults related to confidence in interacting in a professional manner? (Chapter 6)

Secondly, these community-based experiences appeared feasible to implement with a large group of physiotherapy students in Hong Kong; in fact, overwhelming support to continue was received from both the students and community participants. This strong support may be a reflection of the students’ appreciation for the theory-practice linkage provided in the community-based learning experiences. The importance of integrating theory (or university learning) with practice (or practical training) is well documented in the literature for educational of health care practitioners (for example see Kember et al., 2001; Jarvis, 1999; Argyris and Schon, 1985). As most of our students were relatively young (age 17-18 years), with limited life experiences to draw-upon, the community-based learning experiences may have given them the opportunity to experience/feel issues related to theoretical concepts students commonly find difficult to understand such as lifespan theories of motor development and professional interaction. Evidence that the community-based learning experiences helped to link theory with practice was provided in the students’ comments.

...To learn from actual experience and reality makes the abstract theory of DMB (Development of Motor Behaviour) more comprehensible (coh1yr1wch#37).

... I treasure this experience very much as it helps me quite a lot in my future career. Through education or training in a class setting, though I can learn theories and techniques which are very important for me to be a good physiotherapist, I cannot have a direct interaction with my clients and apply my knowledge to help them. This experience helps me to have a face-to-face interaction with the elderly (coh1yr1sv#44).

The research question that arose from this was: What aspects of the community-based classroom learning experiences do students find most beneficial? (Chapter 7)

Thirdly, these preliminary data suggested that direct experience with older adults increased the self-efficacy of students to interact with this prospective clinical population. The richness of the learning environment including the interaction with ‘real clients’, as well as observations of role models interacting with the clients, gave
the student a positive experience on which to build upon. The community-based classroom provided a learning experience which could influence the students' efficacy beliefs through three of the four sources described by Bandura (1997): enactive mastery - students reported a successful, enjoyable experience; vicarious experiences - students learn from observation of classmates successes as well as role modelling from the instructor; and verbal persuasion - students received positive feedback from the clients/participants/instructor. As confirmed by students' comments these sources contributed to building students' self-efficacy in professional interaction.

It makes me more confident as I haven't interacted with some unknown older adults before. It's a good chance for students to practice the skills of interacting with clients laugh (coh1yr1sv#95).

I became more confident because my client is rather friendly and talkative... (coh1yr1wch#97).

Considering the complexity of self-efficacy and of professional interaction, it is questionable whether one or two learning experiences are sufficient to increase students' efficacy in professional interact. Many students' feedback, however, indicated that one or two experiences can help to strengthen their perceived efficacy. Other studies cited in Bandura (1997) showed that through self-monitoring of performance, and through vicarious experience (feedback or comparison to others) an individual's self-efficacy can be strengthened or weakened with one experience (pages 85-87).

With regards to the measurement of students' confidence, it is possible that although a student reported to be 'more confident', the actual level is not known and may require further improvement. Similarly, students who reported to be 'very confident' following the community experiences, may feel different in a hospital setting with more impaired clients. As most of these first year students have not had any prior experience in a clinical setting, they may not be aware of potential difficulties, thus may have an artificially high perceived self-efficacy.

Questions that arise from this: What is the characterization of self-efficacy to interact with older adults in a professional manner? (Chapter 8)

**Limitations**

Given the overall positive comments for these learning experiences, the question of a positive bias in the student feedback needs to be addressed. In my experience in
teaching physiotherapy in the Caribbean, Singapore and Hong Kong, although many of these students may be reluctant to question or challenge the educator in a large group setting, in an individual or small group settings, students provide honest and frank feedback. Using a Hong Kong example, students in the health professions provided both positive and negative feedback regarding new teaching methods to promote reflective learning (Kember, et al, 2001). In these studies, students reflected feelings of anxiety and discomfort with new teaching and assessment methods (p.141). Students also reflected that they were freer to discuss potentially conflicting issues when their feedback was not a part of the formal assessment (e.g. a grade was assigned to it) (p.61-62). The student feedback collected in this study was not assigned a grade and was kept anonymous. The negative feedback received was most commonly related to the students' heavy university-based workload.

On interpretation of the data and review of the measurement scale it was recognized that the scale rating level of confidence (very confident, more confident, no change in confidence, not confident) may be measuring two constructs (1) level of confidence (i.e. very confident and not confident) and (2) change in confidence (i.e. more confidence, no change in confidence). Interestingly, the majority of students reported to be 'more confident' following each community-based experience, thus minimizing this measurement problem.

Likewise, the use of "a unique experience for me" to rate the quality of educational experience may not be interpreted as consistent with the other qualifiers in this scale (above average, average (good), below average, no educational benefit for me). It is possible that the experience was a unique learning experience, but the student may not necessarily view it as beneficial. Most students, however, who chose this item, "a unique experience for me" also reported to be 'more confident', thus indicating they found the experience beneficial. Students who chose this item, provided positive comments about the learning experience:

This visit allowed me to learn the characteristics of how the elderly interact and now I am more confident towards approaching them. I really did enjoy my visit, I found it interesting, a new experience and informative. I think it is essential for future PT (physical therapy) students to have interactions with the elderly (in the) Hong Kong community in order to experience what patients they may encounter and treat in the clinical (setting). (cohlyrlwch)
Because, well, I did see some ‘weak elderly’ in (the) street, however, to talk to them, to communicate with them, to show some concern to them, it’s really my first time. Great!

(cohl.yrlsv)

Given the overall positive feedback following the first implementation of the community-based learning experiences, the implementation was continued. The following chapter (Chapter 6), cycle 2 of the project, focuses on Understanding Student Needs.
Chapter 6

Cycle 2: Understanding Students’ Educational Needs

This chapter examines Hong Kong physiotherapy students’ preferred learning style, approaches to learning, prior exposure to older adults and self-efficacy to interact professionally with older adults, with the purpose of understanding educational needs in professional interaction with older adults.

The following research questions are addressed:

- What is the self-efficacy of beginning students to interact in a professional manner with older adults?
- What is the profile of Hong Kong physiotherapy students’ preferred learning style? Is there a need for experiential learning?
- What are the students’ approach to learning?
- How much interaction do entering physiotherapy students in Hong Kong have with older adults?
- Is there a correlation between students’ level of self-efficacy to interact in a professional manner with older adults and preferred learning style, approach to learning, and frequency of contact with older adults?
- How does the physiotherapy students’ self-efficacy in professional interaction vary over the three year curriculum?

Introduction

As discussed earlier, community-based learning experiences with older adults were developed for first year physiotherapy students to address needs expressed in the curriculum review process: (1) to enhance students’ confidence to interact with older adults and (2) to update physiotherapy education according to changes in service delivery (e.g. shift to more community care), changes in population demographics (e.g. the aging population) and changes within the physiotherapy profession (e.g. developing the reflective practitioner). The first year of implementation confirmed that the experiences were feasible to conduct with 150 first year physiotherapy students. Students’ feedback revealed that the learning experiences improved their confidence to interact professionally with older adults, that the learning experiences...
were of good quality or above and that many students lacked prior exposure to older adults.

In planning for the second cycle of implementation of the community-based learning experiences, a better understanding of students’ educational needs, both general and specific to the area of professional interaction with older adults, was identified (see Figure 3.1 for overview of cycles of the project). The general constructs measured were students’ preferred learning style (Learning Style Inventory: Kolb, 1985) and students’ approach to learning (Revised Study Process Questionnaire: Biggs, Kember and Leung, 2001). The specific concepts measured were students’ prior frequency of interaction with older adults and self-efficacy in professional interaction with older adults.

Given that Kolb’s model of experiential learning was a foundation for the development of the learning experiences (stemming from the curriculum document), the purpose of using Kolb’s Learning Style Inventory (1985) was to help in understanding the need for experiential learning activities. Advocates of assessing students’ preferred learning style use this information for two main purposes: (1) to improve students’ learning ability by teaching to their preferred style or (2) to provide learning experiences of a non-preferred style to enhance overall learning capabilities (Wessell, et al 1999).

A common (mis)perception of Hong Kong students is that they are passive, rote learners (Kember, 2000). The exam-based educational environment (see Chapter 2) provides few, if any, opportunities for experiential-type learning (Bray and Koo, 1999; Tang and Biggs, 1996). As the mode of instruction for our community-based learning experiences was experiential, a measurement of students’ learning styles would provide information whether the community-based learning experiences were ‘teaching to a preferred style’ or providing a new learning experience.

There is criticism of using preferred learning styles to develop teaching and learning activities which is primarily directed at teaching to students’ preferred style. Evidence suggests that a certain degree of tension in learning and providing challenging experiences is more optimal for learning than consistently teaching to the students’ preferred style (Vaughn and Baker, 2001). There is also concern of labelling and stereotyping students into a set of characteristics which ultimately may
reduce their learning experiences (Stellwagen, 2001). Using a variety of learning experiences, however, may encourage adaptability in learning (Vaughn and Baker, 2001).

As the educational usefulness of assessing preferred learning styles was questionable, I was interested to also assess the students’ approach to learning. The work of Marton et al (1984), Biggs (1999) and Kember et al (2001) supported the value of understanding students’ approach to learning as a more useful educational tool than assessing learning styles. The original work by Marton and Saljo (1976a,b) found two distinct approaches to learning that students use: a deep approach and a surface approach. The Revised Study Process Questionnaire (Biggs et al., 2001) was used to assess students’ preferred learning approach.

In addition to the general educational measures (preferred learning style and approaches to learning) more specific learning needs such as, prior contact with older adults and self-efficacy in professional interaction with older adults, were also considered important to assess. Given the specificity of this information, a tested and published questionnaire was not available, therefore, we developed our own questionnaire to collect this information, as discussed in Chapter 3.

Self-efficacy measures commonly use response scales of either 0-10 or 0-100% (0 = not at all confident and 10 or 100% = completely confident) (Bandura, 1997). Many of my Chinese colleagues reported that Hong Kong students would probably prefer the percentage scale (0-100%) over the 0-10 scale. In the initial data collection (n=144 students), both response scales were used to determine which scale the students preferred to use. Students did not demonstrate a strong preference for one scale over the other [48% chose the 0-10 scale (n=69); 30% chose the 0-100% (n=43); and 22% used both scales (n=32)].

For further information on the methods used during this cycle, refer to Chapter 3. Findings are presented in the following order: (1) Profile of the students: students’ preferred learning style, students’ approach to learning, prior exposure to older adults, self-efficacy in professional interaction, (2) correlations with self-efficacy in professional interaction and (3) self-efficacy in professional interaction across the curriculum. A discussion follows.
Profile of the Students

Students' Preferred Learning Style

Using Kolb’s Learning Style Inventory to assess preferred style of learning, the largest number of Hong Kong students in cohort 1 and 3 preferred the ‘thinking and watching’ (assimilator) learning style (42% and 40% respectively). Cohort 2, however, showed similar percentage of students in the ‘thinking and watching’ and ‘feeling and watching’ (diverger) styles (38% and 31% respectively). The style least preferred by all three cohorts was ‘feeling and doing’ (accommodator) (Figure 6.1). Using the chi-square analysis, no significant difference was found between cohorts 2 and 3 ($X^2=3.61$, df=3, p>0.20).

Based on these results, it appeared that the Hong Kong students preferred the ‘watching’ approach to transform information combined with ‘thinking’ or ‘feeling’. According to Kolb (1985) people with the ‘thinking and watching’ (assimilator) learning style are more interested in abstract ideas than interacting with people. Individuals with the ‘feeling and watching’ (diverger) learning style is best at observing situations from many different points of view and generating a wide variety of ideas, rather than taking action. Given that most Hong Kong students have experienced mainly a didactic, teacher-centred approach to learning, the most predominant in Hong Kong secondary schools, it was anticipated that most of the beginning level students would prefer the learning styles less action-based. Interestingly, however, despite the homogeneity of the Hong Kong secondary school system, a representation of students was found in all learning styles.
Figure 6.1 Learning Profile of Hong Kong Students [Kolb’s Learning Style Inventory (1985)]
Students' Approach to Learning

The Revised Study Process Questionnaire (R-SPQ-2F) (Biggs, Kember and Gow, 2001) was used with all 3 cohorts of students to classify students’ approach to learning. Cohorts 1 and 2 were assessed at the same time, cohort 1 was finishing year 2 and cohort 2 was finishing year 1. Cohort 3 was assessed at the beginning of their first year.

Results from this questionnaire were analysed to identify students’ study strategies: deep approach (DA) and surface approach (SA). In Figure 6.2, the mean deep and surface approach scores across three years of the physiotherapy programme are presented. Based on this analysis during different stages of the physiotherapy programme, the upper year students (cohort 1) showed a decline in use of a deep approach to learning, with an increase in surface learning strategies when compared to the first year students. This information indicates that students in year 3, the final year of the physiotherapy programme, were using more surface study strategies than year 1 students.
Prior Exposure to Older Adults

Information collected during the first implementation of the pilot learning experiences indicated that many of the entering level physiotherapy students (67%) had monthly or less interaction with older adults age 60 years and over. The response categories used for this first cohort of students were: daily, weekly, monthly, and seldom. For the next cohort of students, an additional response category was added, 'never', and the question was split for two age groups of older adults (60-74 years and 75+ years). The grouping of older adults was divided as the age group over the age of 75 years is more likely to present with health related challenges. The age of 60 years was identified as the lower age as this is the official retirement age in Hong Kong.

As demonstrated in Figure 6.3, all three cohorts of students reported similar low levels of exposure to older adults. Of note, is the lower reported interaction with adults over the age of 75 where the majority of students in cohorts 2 and 3 responded seldom or never [cohort 2: 72% (n=104); cohort 3: 67% (n=83)]. Reported
interaction with younger, older adults (age 60-74) was higher, however, approximately half of the students responded seldom or never to interacting with older adults in this age group [cohort 2: 51% (n=73); cohort 3: 48% (n=60)].

**Self-efficacy in Professional Interaction with Older Adults**

A profile of students’ beginning level of efficacy to interact with older adults (age 60-74 and 75+) with and without problems provided an assessment of students’ beginning levels of self-efficacy. As demonstrated in Figure 6.4, the reported levels of self-efficacy of cohorts 2 and 3 were similar. Not surprisingly, students’ efficacy levels were lower with the older age group (over 75 years) and with older adults with problems. Students were least confident to interact with older adults over the age of 75 with cognitive and emotional problems.
Figure 6.3: Frequency of Contact with Older Adults: A Comparison of Three Cohorts (Cohort 1: n=140; Cohort 2: n=144; Cohort 3: n=124)

*N.B. The category ‘never’ was not used for cohort 1.*
Figure 6.4: Self-efficacy in Professional Interaction with Older Adults at the Beginning of the Physiotherapy Course (Cohorts 2 and 3, n=267)
Correlations with Self-efficacy in Professional Interaction

Correlations between self-efficacy in professional interaction and learning style, approach to learning (surface or deep approach) and prior exposure (Figure 6.5) were examined using the Pearson correlation statistic in SPSS.

![Diagram showing relationships between Self-efficacy in professional interaction, learning style, deep approach, surface approach, and prior exposure with correlation coefficients labeled: r=0.064, r=0.085, r=-0.234*, r=0.233*]

* statistical significance p<0.05

Figure 6.5: Correlations with Self-efficacy in Professional Interaction

Learning style and Self-efficacy in Professional Interaction

No correlation was found between self-efficacy in professional interaction and preferred learning style (Kolb, 1984) (r=0.064; p=0.531). These results indicate that there is not a specific learning style (doing, thinking, feeling or watching) that links with levels of self-efficacy in professional interaction.

Approach to Learning and Self-efficacy in Professional Interaction

The level of correlation between students’ self-efficacy in professional interaction and mean scores in deep and surface study strategies were examined. A significant negative correlation was found between students’ reported level of self-efficacy in professional interaction and mean surface study approach score (r = -0.234, p=0.005, n=119). This finding indicates that students who had higher surface mean scores had lower self-efficacy in professional interaction.
No significant level of correlation was found, however, between the mean deep approach score and students’ level of self-efficacy to interact professionally with older adults ($r = .085, p = .358, n = 119$), however, a positive correlation was noted. The correlation between the change in level of confidence (pre and post learning experiences) and mean deep approach score was also examined, no correlation was found ($r = .078, p = .458, n = 93$).

The most likely reason for this lack of correlation between deep study strategies and self-efficacy is that self-efficacy is a domain-specific construct, while the measurement of students’ approach to learning is general to academic learning. Another possible reason is the link of self-efficacy levels with prior experience. Thus even if a student has a deep approach to learning, if s/he lacks prior exposure to older adults, perceived efficacy may remain low.

Students’ voluntary written comments following each of the learning experiences, however, supported the positive link between self-efficacy and a deep approach to learning in this context.

**Exercise Partners with Older Adults:**

> After that visit, I find that I can communicate with elderly well. That makes me feel better when I deal with elderly. That is my first to join such kind of visit. Firstly, I am worry about I can't communicate with them and can't take care of them. But, after that experience, I think I have get more confident to deal with elderly. Some of them can take care themselves and even the others. Some of them, although, they need aids to walk, but they're still initiative to do exercise. They all try their best to do the exercise. Although they don't do that so good, but that has already driven me to initiative to help them to improvement. (coh3yr1wch#26)

> ...I think the elderly are almost nice, not old fashion anymore. I am so impressed for it and I hope I can understand them more, to help them more in the future. (coh3yr1wch#28)

**Walking and Talking with Frail Older Adults:**

This precious opportunity stimulates me to interact with them and be more confident when approaching them. It gives me a chance to contact with some older adults who are of weaker health condition that I've not experienced before. Makes me to be prepared and reflect myself for the improvement in interacting with the elderly in future clinical placements. (coh3yr1wk#78)
**Social Visits:**

I became more keen to talk to them, knowing more about them. This made me to become more easy to plan the treatment. It give me to have a chance to know more about what is going on in the community. (coh3yr1sv#90)

**Prior Exposure and Self-efficacy in Professional Interaction**

Given that self-efficacy is frequently developed through mastery experience (Bandura 1997), the link between students’ prior exposure to older adults and reported efficacy levels in professional interaction was examined. Baseline data collected from cohorts 2 and 3 (n=267) in their first month of the physiotherapy programme, prior to any learning experiences with older adults, were used to assess the correlation. A slightly higher correlation between reported frequency of contact and level of confidence to interact with older adults was found for older adults over the age of 75 years, compared with the adults 60 to 74 years (r=.272 and r=.233, respectively). Both correlations reached the level of statistical significance (p<0.01).

Using the r values, the coefficient of determination was calculated [0.064 (r=.233) and 0.142 (r=.272)]. The variance shared between reported level of confidence and exposure to older adults is, therefore, 6.4% for older adults aged 60-74 years and 14.2% for older adults aged 75+ years. Thus exposure to older adults accounts for 6.4% and 14.2% of the variance of reported level of confidence.

It is not surprising that the correlation values are not extremely high, as this would indicate that confidence to interact with older adults was a uni-dimensional variable. Self-efficacy to interact with older adults is likely, a multidimensional variable, in which a variety of factors may influence a students’ level of confidence to interact in a professional manner (see Chapter 8). Students may have frequent interactions with normal, healthy older adults, but lack exposure to older adults with problems. With a lack of experience interacting with older adults with problems, students may not fully comprehend the potential difficulties or skills required. Students may also have experience in social interaction with older adults, however, professional physiotherapy interaction requires different communication skills.

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Evidence from the focus groups and students’ written comments support the linkage between ‘experience’ and increasing strength in self-efficacy to interact professionally with older adults.

As time goes on I think experience give me confidence. (coh1yr2group #6)

…I’ve had (very less chance with that (interaction with older adults), I think that’s why I have no confidence. (coh1yr2group#5)

Initially, I don’t have confidence to communicate with the elderly because I seldom have chance to communicate with the elderly... (coh1yr2group#3)

Additional support for the link between experience and self-efficacy was found during the focus group interviews when students were asked what learning experiences best helped them to improve their confidence to interact in a professional manner. Their responses were generally experiential in nature, they included: the community-based learning experiences (exercise partners with older adults and social visits), clinical placement, volunteer work (a service component of the Professional Seminars subject) and clients invited to practical sessions in the university classroom.

Although not supported by all students, some students even volunteered comments reflecting that they did not find lecture-style teaching approaches effective for learning communication skills, for example:

I agree with you, because we see some slides and some people talking about their experience, I don’t think my confidence will improve when I hear their story because it’s not happening to myself or the wording on the slide will not help me to be more confident. Only the conversation or interaction with different conditions to react in different ways (will help improve confidence). Sometimes the elderly will be very cheerful and happy and willing to share anything with you and sometimes they will be very depressed and negatively view all the aspects – these things are not learned from the slides or the powerpoint or other people’s knowledge. (coh1yr2group#4)

**Self-efficacy in Professional Interaction across the Curriculum**

Finally, a longitudinal profile of the first cohort of students, using the lifespan questionnaire (Appendix 2) reflected the relationship between clinical experience and self-efficacy in professional interaction with:

- classmates
- infants
- children (with and without disabilities)
- parents of children
• adults (with and without disabilities)
• older adults.

This questionnaire was given to the students following each clinical placement in year 1 and 2. The number of students that completed the questionnaire at the end of year 3 was small (n=25) as I was not able to gain access to a larger number of students. Comparison of initial scores (May 99) of the sample of year 3 students (n=18) with the whole group of students revealed similar scores. The smaller sample of students presented with lower mean scores (see Figures 6.6 and 6.7) in year 1. Final mean scores for the whole class in year 3, may, therefore, be slightly higher than the mean of this sample group.

With reference to Figure 6.7, the pattern of distribution of the mean scores shows a gradual increase in confidence with increasing experience. A slight decrease in confidence is reported after the first clinical experience, particularly with infants and children. This is not surprising, as many students report feeling somewhat ‘overwhelmed’ following their first clinical experience, particularly because these Hong Kong students have had limited prior exposure to the clinical setting. Student comments from focus interviews support the gradual increasing confidence in professional interaction with increasing clinical experience.

...After the accumulation of the knowledge and the experience we will be more confident because the knowledge on the pathology will be more comprehensive to know more about the pathology of the patient, and then with the experience we will not be so afraid to touch the patient. (coh1yr3focusgroup#3)
Figure 6.6: Confidence to Interact Professionally Across the Lifespan Over Three Years (cohort 1)
Figure 6.7: Comparison of Self-efficacy Levels in Sample of Third Year Students with Whole Class Pre-Clinical Education I (May 99)
Students also commented as to why the data reflected a drop in confidence after the first clinical experience. Students reported that they felt they didn’t know how to provide treatment to a client as they have limited knowledge from their university course and they found unfriendly clients challenging to interact with. These comments were from third year students reflecting back on their year one experiences during focus group interviews.

Because it is the first placement they will think that they don’t know anything about their clinical, so not confident in treating the patients in the next placement. Because in the first placement there is a lot they don’t know and they don’t know how to treat the patient, how to approach the patient. They lack in confidence. (coh1yr3focusgroup#2)

For me, before I go to the first clinical the chance that I have with elderly are healthy and happy elderly, they are not in hospital. At that time I think I am quite confident to communicate with them, but at after I interact with that one in the hospital, they are very ill and very sick and they will not as friendly as the one I did before, so there may be some decrease in confidence, so after that I realize that it is the true picture and I will try to, and the CE (clinical educator) will help you sort out the experiences, so there is an increase in confidence. (coh1yr3focusgroup#2)

The pattern of development of self-efficacy in professional interaction will be discussed further in Chapter 8: Characterisation of Self-efficacy.
Chapter Discussion

This chapter has provided an educational profile of Hong Kong physiotherapy students, assessing students’ preferred learning style (Learning Style Inventory, Kolb, 1985), approach to learning (R-SPQ-2F, Biggs et al, 2001), prior exposure to older adults, and self-efficacy in professional interaction with older adults. Implications are now discussed.

Learning Styles

A profile of students’ preferred learning style using the Learning Style Inventory (Kolb, 1985) revealed that Hong Kong students most frequently preferred the learning style of ‘thinking and watching’ (assimilation). This provided support for experiential learning activities based on the premise that students need exposure to a variety of learning experiences to become well-rounded learners. Assessment of learning styles, however, provided little information into the students’ learning needs.

The Hong Kong physiotherapy students presented a different profile than Canadian physiotherapy students (Wessell, 1999). The Hong Kong students showed a strong preference for ‘watching’ – ‘thinking and watching’ and to a lesser extend ‘feeling and watching’, while the Canadian students showed a preference for ‘thinking’ – either ‘thinking and doing’ or ‘thinking and watching’. The sharpest contrast between Hong Kong and Canadian students preferred learning styles was in the category of ‘thinking and doing’ (converger), which contained a higher percentage of Canadian than Hong Kong students. In this learning style, individuals are best at discovering practical uses for theoretical ideas, with a good ability to actively solve problems (Kolb, 1985). As discussed earlier (Chapter 2), it is likely that few Hong Kong students have experienced ‘active experimentation’, as an active form of learning within the Hong Kong educational system.

Both the profile of the Hong Kong and Canadian students, provided strong evidence for the need for more ‘doing and feeling’ (accommodation) type learning experiences such as the community-based learning experiences (Wessell et al, 1999). Learning experiences that provide early contact with people, prompting the student to consider another person’s feelings and values stimulate ‘feeling’ experiences. Promoting
students’ use of ‘active experimentation’ to learn, is achieved by providing students with experiences to ‘try-out’ approaches in professional interaction with older adults.

The profile of the Hong Kong physiotherapy students’ preferred learning style supported the need for experiential learning activities. The usefulness of the learning style inventory beyond this point, however, may be questioned as it provides information regarding a stable academic personality (learning style), not easily altered with short-term educational experiences (Biggs, 1999). The student may always prefer a certain style of learning, regardless of their learning experiences. In addition, one learning style is not necessarily better than another; learning occurs in all four styles, as long as the learner progresses through the four stages: feeling, watching, thinking and doing (Kolb, 1984). Jarvis (1998), however, regarded Kolb’s cycle of experiential learning as an over-simplified model of learning. If this is the case and learning occurs on different levels, e.g. non-learning, non-reflective learning and reflective learning, the assessment of learning styles provides little information into the depth of students’ learning. Therefore, to assess the learning outcomes of an educational project, the Learning Style Inventory would not be expected to demonstrate any change in students’ learning.

Kolb (1985) reported a link between an individual’s preferred learning style and career choice (e.g. ‘thinking and doing’—physician, engineers; ‘thinking and watching’—researcher, financier, teacher; ‘feeling and watching’—actor/actress, social worker, nurse, counsellor; ‘feeling and doing’—business, marketing and politician). This ‘career map’, as termed by Kolb, was developed based upon research conducted on a Western population only. The profile of Hong Kong physiotherapy students differs from that of the Canadian students, which places some question to the applicability of this career-map cross-culturally. As stated earlier, the traditional educational system in the Hong Kong secondary schools may play a role in the low percentage of students who prefer the ‘doing’ aspect of learning. Students in Hong Kong may be less aware of their chosen future career, physiotherapy, as academic performance is the sole criteria for admission, prior experience in a related field is not required. Further research into the association of learning style with careers in Hong Kong is required before applying Kolb’s ‘career map’ to this culture (Kolb, 1985).
The development of therapeutic professional interaction skills in physiotherapy is a complex learning task. As depicted in Table 2.1, communication with the client is an important aspect of expert practice in physiotherapy. As Burnard (1998) points out, purely by the nature of the task (interaction), experiential learning methods are the most appropriate. Students are required to learn through experience during their clinical placements and after graduation. These reasons provide a strong argument for experiential learning methods, in addition to the profile of students' learning styles. For example, even if a large percentage of students preferred the feeling and doing learning styles, experiential learning activities remain important for the development of professional interaction skills. Physiotherapy students need to be exposed to experiential learning activities to help prepare them for learning in the clinical setting, regardless of their preferred learning style.

In summary, the profile of students' learning style using Kolb's Learning Style Inventory provided support for experiential learning activities. Its use was limited, however, and a deeper understanding of students' educational needs was required.

**Students' Approach to Learning**

On assessment of students' approach to learning a trend was noted of increasing percentage of students that use surface learning strategies and a decreasing percentage that employ a deep learning approach across the three years of the physiotherapy programme. These data may be viewed with caution, as the collection was completed in cross-section (i.e. involves three separate student cohorts) as opposed longitudinally (i.e. following one cohort of students through the three years of the programme). This information is, however, important for curriculum development, particularly if the one of the goals of the programme is to enhance students' independent learning. Although a fall in deep learning approach in higher years of study may be a common finding (Kember, 2000), it is likely that workload and teaching practices contribute to this finding. Further discussion is provided in Chapter 9. Future study is required to follow the same cohort of students throughout the three years of the course to better comprehend this trend.

Students' deep approach to learning was not significantly correlated with self-efficacy to interact professionally with older adults, which likely reflects the domain specificity of self-efficacy. Of note, however, was the significant negative correlation
of mean surface scores and self-efficacy. Student comments supported the idea that learning experiences that increase students’ confidence, may also help students to adopt a deeper approach to learning in this context. This hypothesis needs to be further tested. The linkage between approach to learning and self-efficacy is further discussed in the Chapter 9.

**Prior Experience with Older Adults and Development of Professional Interaction**

Similar to the first cohort of students (Chapter 5), students in the second and third cohorts reported limited contact with older adults, especially those over the age of 75 years with cognitive and emotional problems. This information was somewhat surprising, as it was assumed that many students would have grandparents in their home environment, thus would have regular contact with older adults. The reason for the limited prior interaction with older adults was not investigated. As discussed in chapter 5, however, this lack of prior exposure may contribute to ageist attitudes and less effective professional communication skills with older adults.

A low exposure to older adults, particularly in the age group over 75 years, suggests that students may lack awareness of the ‘world’ of older adults. With the growth in the aging population in Hong Kong [age 60+: 14.9% (2001) to 17.4% (2021); age 75+: 4.4% (2001) to 5.6% (2021)] (Census and Statistics Department, 2000), students will encounter older adults more frequently in a variety of clinical settings. This age group is also more likely to present with complex problems related to natural aging as well as pathologies, which can impact communication abilities.

**Generation gap**

Issues of a ‘generation gap’ or stereotyped perceptions of older adults can create communication difficulties. In Hong Kong many of the older adults, originally from mainland China, came to Hong Kong during times of hardship in China (e.g. famine, the Long March, the Great Leap Forward). At this time, Hong Kong was under British rule while China was experiencing a change in leadership to the Communist government (1940s). Differences in culture between young, Hong Kong-born physiotherapy students and older adults born in China are important to recognize to optimise professional interaction. Some older adults (especially women), for
example, may not be able to read (literacy in Hong Kong for men: 96%; women: 88%) (http://www.odci.gov/cia/publications/factbook/geos/hk.html). The use of assessment scales, educational material or written home exercise programmes need to be appropriate to literacy level. Older adults may have strong beliefs in traditional medicine, which may or may not link with the Western physiotherapy approach. For example, ice treatment is rarely used in traditional Chinese medicine, whereas, cold therapy is considered very important during the acute stages of a musculoskeletal injury. An older person may believe that the cold treatment will be harmful. Lastly, older adults from Mainland China may speak a different dialect than the Cantonese spoken by young Hong Kong residents (this will be further addressed in Chapter 8).

Students expressed their stereotyped perceptions of older adults in their written feedback following the learning experiences and their written response to “Discuss your perspectives on aging”.

Physical abilities gradually decline. The elderly may have bad temper. The old & young usually have generation gap - difficult to communicate. May need more efforts in order to educate them, or to help them recover, when compared to the young. Some may be reluctant to others’ help. (coh1yr1perspsept00)

Students expressed being afraid of older adults, not knowing how to interact with them as well as assuming that all older adults were frail.

... First when I think of “I have to visit an elderly centre”, I was quite scared because I seldom meet elderly and in my mind, I think they are old fashioned, scary and some kind of annoying. (coh3yr1wch#28)

The activity of old people is weak. For example, can't walk properly, walk with pain. The activity will progressively diminish of the old people. (coh3yr1perspsept00)

Students also expressed the need to provide education to older adults, which may be more challenging than to younger adults, especially when the younger student physiotherapist prefers to use the occasional English word.

Let me talk about the elderly first. We still have the difference in age range, how do you say age gap, generation gap, we still have this. They may think that “oh you are too young to teach me something”. They may be angry about that, “why I am here and you teach me something to do”…. They have that mind, that idea. But we can solve it, since we show our caring or our concern, and the important message that we are helping them. In cognitive, most of them are quite smart, but some, for example when teach some exercise or some movement, they can’t do it. Maybe the communication or I don’t know, the wordings they don’t understand. We like to add some English in our sentence that’s the characteristic of Hong Kong. So we need to change channel. (coh1yr3focusgroup#6)
Problem areas in professional interaction

Students' limited experience with older adults may also reinforce problem areas in professional interaction including: unshared meaning, power differences, responsibility conflicts and role uncertainty (Northouse and Northouse, 1998, p.80). Difficulties reported by the physiotherapy students during focus group interviews fall into two of these areas - unshared meaning and role uncertainty.

Problems of unshared meaning, where the health care professional and client interpret words differently, are common. Two specific sources that contribute to the problem of unshared meaning between health care professionals and clients are: (1) use health care ‘jargon’ or (2) different interpretations of the same word (Northouse and Northouse, 1998). Evidence that the physiotherapy students in this study experienced these difficulties when communicating with older adults was found during the focus group interviews with first year students, as indicated in the following discussion:

Student1: In communicating with the elderly, there is the difficulty that the elderly does not have the same style as when I talk with my friends. This talking style is different between us and the older people, so that there is a difficulty in communication....

Student2: One patient suddenly speak Haka (another dialect of Chinese) to us.

Student1: And sometimes they may say some terms we don't understand or we have a term that they don't know.

Student3: When we want the elderly to describe their pain we don't know how to translate it...

Student1: We cannot understand how the pain is. They have used some term we don't know how to describe in English or in our language... (coh2yr1focusgroup#3)

Other students’ comments also support this, indicating the difference between interacting with older clients and practicing with classmates during practical sessions based in the university classroom.

...In school when we tell our classmate to turn it's very easy, 100° hip flexion for all the way he can do for you. But for the people (clients), try to think how to translate, how to make them locate what you want them to do, before you translate. (coh2yr1group#4)

But I think one difficulty is that it is very difficult to translate the jargon to explain to them why this action, why do this, why do that, but, it's very different from communicating with just the classmate, just say one jargon word and they can know that, but I need to further explain to my patient, especially the elderly, so I find the most difficulty is this. (coh2yr1group#1)

The second area, role uncertainty, involves the expectations that the client and student have regarding their responsibilities within the therapeutic relationship. When clients
are unsure of their role, they may be hesitant to initiate discussion of health concerns, and they may express only physical not emotional concerns (Northouse and Northouse, 1989). Students, especially beginning level, are uncertain of their own responsibilities as well as the client’s role. The physiotherapy students in this study felt that the clients expected them to have a similar role as a qualified therapist, which made them feel anxious. Students also reported feeling uncertain of their own role and level of knowledge. Many students felt this ‘role uncertainty’ resulted in a loss of ‘trust’ from the client, as indicated in this discussion during a focus group with year three students:

Student: I think it’s difficult. Because if you don’t have the basic knowledge when the patient is asking you questions, you cannot immediately tell them. This is the problem that the patient will lose confidence in us if our knowledge is low.

Interviewer: so the patients would expect you to answer all their questions.

Student: usually, because they sometimes treat us as staff. If they accept you to give them treatment they will expect you to know most of the things. Sometimes they ask us to give them exercise to give them at home. But to be honest in year one I don’t know too much exercises and I don’t know if my exercise will help them or not, so sometimes I will say “you are not being discharged yet, so maybe I can teach you later” to make some preparation. But sometimes patients… might say “why don’t you know my problem, I just asked you to teach me some exercise, and you say you can’t”. It relates to our knowledge and also knowledge can make it easier to develop a discussion with the patient. Sometimes with a patient with OA (osteoarthritis) knee we can clearly describe things and they will say “Oh, why you know my feeling like this”, so you can gradually build-up the confidence “oh, you know something, seems you know my problem”. But in year one I will only know about the pain is the pain, we don’t know the different nature or the disease, the pain is inside like some kind of bone, this kind of thing I will only know when I am in year two and I gradually know more and helping more patients with this kind of thing I can know that it is the typical OA change and then answer for the patient. (coh1year3focusgroup#5)

Another third year student commented on the role uncertainty experienced and the difficulty developing trust with the clients during students’ first clinical placement:

...especially in year one, if you know very little, you are afraid the patient will ask you something, Oh, why are you feeling pain here, and why I can’t do that also and most of the time you feel you can’t answer her because you don’t know the reason and you don’t want to say something wrong so you just say “oh, I’m not quite sure” and when you say this you feel that the patient will not trust on you so much. (coh1year3focusgroup#6)

Prior experience and therapeutic interaction (empathy)

The development of empathy - putting oneself in another persons’ shoes - an important component of therapeutic interaction, may also be linked with prior exposure. Empathy involves the ability to listen effectively, to hear the words and
feelings of the speaker, to put oneself in the place of another, and to suspend one’s own value judgements to really understand the client (Davis, 1998, p.99). To be able to achieve this level of communication, students must have good self-awareness as well as experience with client groups (Davis, 1998). Student comments during the focus group interviews reflected their growth in empathy and understanding of their clients:

In year one professional interaction is just telling the patient what to do. But now I think I need to listen to the patient and interact with them and take care more about their feeling. (coh1yr3focusgroup)

In year one I think that being a professional I think that patients should do what I ask them to do. Now I think maybe I am much more confident, somehow we need to understand our patient more before we ask them to do a task. Sometime we need to spend some more time to talk with them, not only ask them about things concerning their illness but also their feelings... (coh1yr3focusgroup)

**Self-efficacy in Professional Interaction**

Students reported lower levels of confidence to interact with older adults over the age of 75 years with cognitive and emotional problems. This coincided with a lower frequency of contact with the older age group of older adults and those with problems. Not surprisingly, a significant correlation was found between frequency of contact with older adults and reported self-efficacy. These findings provide additional support for the development of the experiential learning activities with older adults such as the community-based learning experiences.

No correlation, however, was found between self-efficacy in professional interaction and preferred learning style (LSI). The level of correlation between students’ approaches to learning and self-efficacy in professional interaction did not reach significance, however, a positive correlation with the deep approach and a negative correlation with the surface approach was noted.

Students’ comments (from written questionnaires and focus group interviews) supported the link between prior experience and self-efficacy in professional interaction with older adults. The difference between social interaction with known family members and professional interaction was noted. Further discussion on the self-efficacy in professional interaction follows in chapters 7,8 and 9.
Chapter Summary

This chapter examined Hong Kong physiotherapy students' preferred learning style, approaches to learning, prior exposure to older adults and self-efficacy in professional interaction with older adults, with the purpose of understanding educational needs in professional interaction with older adults. Using Kolb's Learning Style Inventory, Hong Kong students most frequently preferred the learning style of 'thinking and watching' (assimilation), providing support for experiential-based learning activities. Many first year students reported limited prior interaction with older adults and reported lower levels of self-efficacy with older adults who had problems (e.g. cognitive and emotional).

As anticipated, no correlation was found between preferred learning style and self-efficacy to interact professionally with older adults. The significant negative correlation was found between the students' mean surface study score and level of self-efficacy in professional interaction. A positive correlation with the mean deep learning score was also noted. Students' written comments supported the link between deep learning strategies and self-efficacy.

Prior experience with older adults and self-efficacy in professional interaction with older adults were strongly correlated, providing support for using experiential learning to develop self-efficacy in professional interaction. Students commented on the difference between social interaction with known family members and professional interaction.

From the viewpoint of assessing students' educational needs as discussed in this chapter, the evidence strongly supports the importance of an experiential base to develop students' self-efficacy in professional interaction with older adults. In physiotherapy programmes, especially those that do not require prior experience in a related area for admission, providing experiential learning opportunities for the students early-on in the programme may help to meet some of the students' educational needs. With this understanding, a more in-depth understanding into the effectiveness and learning benefits of the community-based learning experiences with older adults are examined in the following chapter (Chapter 7, Cycle 3).
Chapter 7

Cycle 3: Effectiveness of the Community-based Learning Experiences with Older Adults

Introduction

In the previous chapter (Chapter 6: Cycle 2) the educational needs of the physiotherapy students supported the implementation of experiential, community-based learning opportunities with older adults early-on in the curriculum. As reported in Chapter 5, the majority of students in the first cohort reported an increase in confidence in professional interaction with older adults following both community-based learning experiences (Exercise Partners with Older Adults and Social Visits). Most of the students also ranked the quality of the learning experiences as ‘good’ or above and recommended the continuation of the learning experiences.

This chapter (Cycle 3) builds upon the previous chapters with a more in-depth assessment into the effectiveness of the community-based learning experiences with older adults. The effectiveness of the community-based learning experiences was assessed using the following outcomes: students’ rating of the quality of the learning experiences, students’ self-efficacy in professional interaction, benefits to student learning and benefits to community participants. The following research questions are addressed:

- Did students’ self-efficacy in professional interaction with older adults increase following the community-based learning experiences?
- What aspects of the community-based learning experiences did students find most beneficial?
- Did the community-based learning experiences benefit the community participants?

This chapter is divided into three main sections. In Section 1, results from the student feedback questionnaires rating the quality of the learning experiences and students’ level of self-efficacy in professional interaction are shown. In Section 2, how the community-based learning experiences were beneficial is examined through the identification of themes from qualitative data obtained from students’ voluntary
written feedback on the questionnaires and from focus group interviews with first, second and third year students. Feedback from the clients and educators are presented in Section 3. A chapter discussion, recommendations and summary follows Section 3.

**Section 1: Effectiveness of the Community Learning Experiences**

As described in Chapter 3 (methods), student feedback was collected using written questionnaires following each of the community-based learning experiences. The questionnaire used with cohort 1 was modified for cohorts 2 and 3 to provide more information regarding students who responded ‘no change in confidence’. The response category for the question: “Based on this experience, how confident are you that you can interact with older adults, as a Physiotherapy student, in upcoming Physiotherapy assessment and exercise procedures?” was changed from a 4-point scale (very confident, more confident, no change in confidence, and not confident), to a 5-point scale where the response ‘no change in confidence’ was split into two categories: ‘no change (already confident)’ and ‘no change (still not confident)” (see Appendix 8 for modified questionnaire).

The percentage of feedback sheets returned (response rate) was high for most of the learning experiences. For cohort 2, the return rate for the feedback sheets following *Exercise Partners with Older Adults* was 99% (n=146/148). For cohort 3, the return rate was as follows: *Exercise Partners with Older Adults*: 99% (n=122/123); *Walking and Talking with Frail Older Adults*: 100% (n=123) and *Social Visits*: 71% (n=87/123). The return rate from cohort 3 for the *Social Visits* was lower than the others, as students were asked to hand-in the feedback sheet one week after the learning experience, along with their Class-Action Project. Return of the feedback sheet was not mandatory for grading of the project, therefore, some students forgot to include their feedback sheet. Given the lower return rate, feedback data regarding this learning experience were collected again, in class, in January. The response rate was now increased to 93% (n=114/123). The feedback collected in December (n=87) and January (n=114), were compared to ensure the feedback collected in January was valid (e.g. see Figure 7.1). All results that follow reflect a percentage of the feedback forms that were received.
Results presented in this section are from two main sources: (1) feedback questionnaires following the community learning experiences including: quality of the learning experience, recommendation to continue the classes, and change in confidence in professional interaction with older adults; (2) pre and post-test measures of students' self-efficacy in professional interaction with older adults.

Figure 7.1: Confidence Rating following Social Visits, Cohort 3, Dec. vs. Jan Feedback
Feedback Questionnaires: Quality of the Learning Experiences

Most students in cohorts 2 and 3, ranked the quality of the community learning experiences as ‘good’ or above (cohort 2: 99% good or above; cohort 3: 100% good or above) (Figure 7.2) (see Chapter 5 discussion for clarification of a ‘unique experience’). All students, but one, in cohorts 2 and 3 recommended the learning experience Exercise Partners with Older Adults be continued. All students, except two in cohort 3 (n=112) recommended that the Social Visits be continued. All students in cohort 3 (n=123) recommended continuation of Walking and Talking with Older Adults.

![Chart of students' rating of quality of learning experiences](image)

Figure 7.2: Students' Rating of the Quality of the Three Community-basea Learning Experiences (cohort 3)
Confidence to Interact Professionally with Older Adults

Students’ confidence ratings following each of the community-based learning activities: Exercise Partners with Older Adults, Walking and Talking with Frail Older Adults, and Social Visits are provided in Figure 7.3. Most students reported feeling more confident to interact with older adults in a professional manner following each of the community learning experiences.

Exercise Partners with Older Adults

Similar to the first cohort, the majority of students in cohort 2 report being ‘more confident’ to interact with older adults following the community-based learning experience Exercise Partners with Older Adults (68% were more confident). In cohort 3, however, fewer students (50%) reported an increase in confidence following this learning experience (Figure 7.3).

One possible cause for this difference may have been that students in the third cohort had higher beginning levels of confidence with older adults, thus it would be more difficult to increase their baseline levels. This, however, was not the case, as baseline confidence levels to interact with older adults were similar for cohorts 2 and 3 (see Figure 6.5). Another possible explanation for the lower proportion of students in the third cohort who reported an increase in confidence was that there was a change in faculty member who instructed this learning experience. In my observations of the learning experiences, the approach adopted by the new exercise leader included more time talking to the clients with less time in exercise activities. When the exercise leader was talking to the clients, the students tended to be passively listening. Alternatively, when the exercise leader demonstrated exercises, the students interacted more with the clients, ensuring the exercises were performed correctly. The reduction in student-client interaction noted in the third cohort may not have provided adequate experience for some of the students to feel more confident to interact professionally with older adults.
Figure 7.3: Self-efficacy to Interact with Older Adults following Exercise Partners with Older Adults Learning Experience (Cohorts 2 and 3)
Social Visits and Walking and Talking with Frail Older Adults

A higher percentage of students in cohort 3 reported an increase in confidence to interact with older adults following the Social Visits (66% more confident) and Walking and Talking with Frail Older Adults learning experiences (76% more confident) (Figure 7.4). The community-based experience Walking and Talking with Frail Older Adults was the new learning experience implemented for the first time. One reason that a higher percentage of students reported an increase in confidence following this learning experience may have been the interaction with frail older adults, a novel, more challenging experience, as reflected in a students’ written comments:

This 'community classroom' provided us special experience. We can directly face and handle some physically unfit elderly which is very different from normal classroom study and normal elderly. (coh3yr1wk#11)

Now I have more confidence to interact with different kind of elderly people, especially those have limitation in certain kind of movement. (coh3yr1wk)

For some students this learning experience, Walking and Talking with Frail Older Adults, occurred later in the semester, which allowed them to build upon the first community learning experience (Exercise Partners with Older Adults) and their knowledge, thus providing an opportunity for active experimentation as well as increasing the theory-practice link. Students written comments reflected this:

This class is really beneficial to me. Apart from applying the learnt theories, I can also learn the communication skill with the elderly. I also learn how to assist the elderly who have problem in walking. Also, I find myself very enjoying in interacting with the elderly. (coh3yr1wk)

This community visit was a good lesson to me as I could use some outcome measures to document my clients based on what I learned in PPTP (Principles of Physiotherapy Practice) laboratory class. (coh3yr1wk)

The above results, combined with those from the initial pilot learning experiences, represent three years of implementation of the community-based learning experiences, providing convincing evidence that the learning experiences helped to increase students’ confidence to interact with older adults, thus supporting their continuation. These data were collected retrospectively, however, based on students’ feedback following their participation in the community-based learning experiences.
Figure 7.4: Self-efficacy to Interact with Older Adults Following Social Visits and Walking and Talking with Older Adults (Cohort 3)
To improve the assessment of the learning experiences, pre and post measures of self-efficacy were collected with cohort 3. Students were asked to rate their level of confidence to interact with older adults using the Self-efficacy to Interact Professionally with Older Adults questionnaire (see Appendix 4). Eighty-three percent (83%, n=102) of the entire student cohort (n=123) was used for this analysis. Ten percent (10%, n=12) of the questionnaires could not be identified, the remainder of the students (7%) were not available to complete a questionnaire.

In figure 7.5, each student’s mean self-efficacy score before and after the community-based learning experiences is displayed. Using the paired samples t-test, a significant difference was found between the pre and post scores (t=-8.604; p=.000). Students with lower levels of self-efficacy (mean less than 5) showed a greater improvement than students with higher baseline levels of confidence (Figure 7.5). When students’ baseline scores are divided into three groups: (1) less than 5; (2) 5 to 7; (3) greater than 7, students’ with the lowest initial score improved the greatest (Table 7.1).

Table 7.1: Mean Self-efficacy Scores Pre and Post Community Learning Activities

<table>
<thead>
<tr>
<th>Initial Level of Self-efficacy</th>
<th>Low (&lt;5) (43% / n=44)</th>
<th>Medium (5-7) (46% / n=47)</th>
<th>High (&gt;7) (11% / n=11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD) Before</td>
<td>3.63 (0.88)</td>
<td>6.00 (0.54)</td>
<td>7.56 (0.51)</td>
</tr>
<tr>
<td>Mean (SD) After</td>
<td>6.00 (1.0)</td>
<td>6.54 (0.82)</td>
<td>7.12 (0.88)</td>
</tr>
</tbody>
</table>
Figure 7.5: Students' Mean Self-efficacy Scores Pre and Post Community-based Learning Experiences (cohort 3; n=102)
Given the significant correlation of prior exposure with level of confidence (see Chapter 6), the greater improvement in the group of students with lower efficacy scores initially, likely reflects the importance of exposure and experience in building self-efficacy. The mean efficacy score for the highest group was slightly lower after the community learning experiences and many of the students within this group reported a drop in confidence following the community-based learning experiences (n=7). This drop may reflect that students were not fully aware of the difficulties of the task - professional interaction with older adults. This drop in confidence may be similar to the drop seen following the first clinical placement, where more challenges are encountered.

The mean score for each question on the questionnaire also increased following the community-based learning experiences (Figure 7.6). All categories demonstrated a similar increase in mean score (range of increase: 0.8 to 1.4). Students’ self-efficacy increased more with older adults with problems, consistent with students’ low prior experience with this group. The greatest increase in confidence was found with older adults with cognitive and emotional problems and those over the age of 75 with physical problems (change of 1.3 and 1.4). The lowest increase in confidence was with younger, older adults (age 60-74 years), which was also the highest baseline mean. This greater increase in mean confidence scores with older adults who present with cognitive and emotional problems may reflect the benefit of the new learning experience Walking and Talking with Frail Older Adults in which students were able to interact with older adults who presented with physical and/or cognitive problems.
Figure 7.6: Self-efficacy to Interact with Different Types of Older Adults: Pre and Post Community-based Learning Experiences (Cohort 3; n=102)
Students’ comments reflected the value of interacting with frail older adults:

Safety and care are those I can observe in this visit. Really, I'm afraid of them falling. I put extra effort in explaining the exercises to them. It's a valuable chance for us to meet different health states in elderly. As we can compare those people in Wong Chuk Hang (Exercise Partners with Older Adults) with those in Wah Kwai (Walking and Talking with Frail Older Adults). We need to provide different assistance and learn how to apply our knowledge in meeting their needs of different people. (coh3yr1wk#113)

Even I found that I cannot communicate very well with these two clients who have expression problem, I think I can handle the cases, like using body language and be patient in listening their saying... (coh3yr1wk#92)

This precious opportunity stimulates me to interact with them and be more confident when approaching them. It gives me a chance to contact with some older adults who are of weaker health condition that I've not experienced before. Makes me to be prepared and reflect myself for the improvement in interacting with the elderly in future clinical placements. (coh3yr1wk#78)

These results provide strong evidence that the community-learning experiences improved students’ self-efficacy to interact professionally with older adults, especially those with lower baseline levels of confidence. The following section will examine other ways the community-based learning experiences were beneficial to student learning, as well as criticisms and recommendations.
Section 2: Learning benefits of the community-based experiences affect student learning?

The community-based learning experiences with older adults were designed to improve physiotherapy students’ confidence to interact in a professional manner with older adults. The results presented previously (Chapter 7, Section 1), provided good evidence that the learning experiences were effective in this respect. How the learning experiences affected student learning is better understood through students’ voluntary written comments on the feedback forms and from the focus group interviews.

In cycle 1 of this project, (Chapter 5: Evaluation of the Pilot Learning Experiences), students’ individual written reflections (n=145) regarding the community-based learning experiences, a component of the Development of Motor written project, were examined to identify preliminary themes. A grounded-theory approach was used (see Chapter 3), reflections were read without set expectations of benefits, but themes emerged from students’ written reflections of the community learning experiences with older adults. Themes identified in this beginning stage were: an improvement in communication and interaction skills with older adults, relevance to their future career, promotion of a more positive attitudes towards the ability of older adults, helped to link university-based teaching with practical/clinical skills (theory-practice link), and enjoyment working with older adults (see Chapter 5).

In this cycle of the project (cycle 3), themes and benefits were further examined for a deeper understanding of student learning during the community-based experiences. Two data sources were used: (1) students’ voluntary written comments on the feedback questionnaires returned following each of the three learning experiences, (Exercise Partners with Older Adults, Walking and Talking with Frail Older Adults, and Social Visits) and (2) focus group interviews with first, second and third year physiotherapy students. Again, a grounded-theory approach was used, comments were read openly to allow the themes to emerge (see Chapter 3 for methods). Major themes were identified across all three community-based learning experiences with older adults. As noted in Chapter 3, quotations were identified according to the cohort of the student (1, 2 or 3), the year of the student (year 1, 2 or 3), either focus group or the specific learning experience (wch=exercise partners with older adults, sv=social visits, and wk=walking and talking with older adults), and the assigned
number during the data entry. For example the notation: coh2yr1wch#86 indicates the student was in the second cohort, was in first year, feedback was from the questionnaire following Exercise Partners with Older Adults, and their data entry number was 86.

The structure of this section includes: (1) general observations of students' comments, (2) major themes and sub-themes, (3) criticisms and recommendations (4) summary to section 2.

**General Observations**

**Number of Written Comments**

The majority of students wrote voluntary comments on their feedback sheet following each community learning experience [Exercise Partners with Older Adults (90%; n=110), Walking and Talking with Frail Older Adults (91% n=112), Social Visits (76%, n=66). Percentages reflect a proportion of feedback forms received]. This high number of student comments is impressive given the written comments were voluntary, and that students wrote in English, their second language.

**Enjoyment**

When reading students feedback comments there was an overall sense that students enjoyed the community learning experiences with older adults. This was consistent with my general observations during the classes, students appeared to enjoy the interaction with the older adults and the novelty of being in a community setting.

It was actually more fun than I thought…. (coh3yr1wch#15)

... I feel happy to help them with their activity and I think this experience is meaningful. (coh3yr1wch#68)

... It's enjoyable to have such visit because we can meet more elderly with different health conditions. (coh3yr1wk#8)

... I enjoyed the visits very much. (coh3yr1sv#56)

... We talked with the elderly happily and they let me know many things. (coh3yr1sv#21)
Themes and Main Benefits

An outline of the major themes and main learning benefits identified from students’ written comments and from focus group interviews is presented in figure 7.7. As depicted in this figure, when analysing the students’ feedback, the value of direct, first-hand experience with older adults in the community setting contributed to all other themes. Comments relating to direct experience were also the most frequent (Figure 7.8).

The themes were identified from a number of data sources. All of the above main themes presented in Figure 7.7, were reflected in students’ written comments regarding each of the community-based learning experiences. All of the above themes, except a change in attitude towards older adults were also found in comments from upper year students (second and third year) during focus group interviews. The focus group interviews did not address student attitudes towards older adults, but primarily concentrated on the area of students’ confidence to interact in a professional manner with older adults. The identified themes are, therefore, supported from a number of data sources – written feedback following each of the three community learning experiences (3 data sources) and focus group interviews with second and third year students (11 focus groups in total).

The percentage of students that provided written comments on these themes for all three learning experiences is presented in figure 7.8. This figure is provided to demonstrate that there were a reasonable number of student comments relating to each theme. Because the comments were open-ended and voluntary, there may be more students who would support these themes, but didn’t write specific comments. Likewise there may be students who do not support these themes.
Figure 7.7: Themes of Learning Benefits from Community-based Learning Experiences with Older Adults
Figure 7.8: Emerging Themes from Students' Voluntary Written Comments following each Community-based Learning Experience
There are a few observations based upon the pattern of the data in figure 7.7. Firstly, students most commonly wrote comments regarding the value of direct experience. This provides strong support for the experiential nature of the community learning experiences. Secondly, there were more comments relating to an increased awareness of older adults, in particular their living environment after the Social Visits. This is not surprising as this learning activity occurred in the clients’ homes. Thirdly, comments relating to a positive change in attitude occurred more frequently in the first learning experience Exercise Partners with Older Adults, indicating the value of this first impression with active older adults. Finally, comments relating to theory-practice linkage and future career were most frequent following the Walking and Talking with Frail Older Adults during which students interacted with more challenging, fragile older adults, some with physical and or cognitive problems. Student comments indicated the value of interacting with older adults who were more similar to physiotherapy clients. Evidence from students’ comments for each theme is now presented.

**Direct Experience**

Students frequently wrote comments on their feedback forms following each of the community-based learning experiences that related to the value of direct (first-hand) experience in interaction with older adults.

...What I believe is we can learn in experience better, rather than studying cases. (coh3yr1wch#41)

... This kind of community classroom is more interesting and useful than just teaching some skills during the lessons. With the personal experience, I think I can remember those skills much better than just reading from books or listening to the lectures. (coh3yr1wch#60)

In school the teacher told us you need to do so, but we don’t know how to do so. Through the experience we learn. (coh1yr3focusgroup#4)

Both students with prior exposure to older adults and those without, commented on the value of direct experience to improve their communication skills, to increase confidence levels, to increase awareness of older adults, to change attitudes towards older adults, to enhance the theory-practice link, to prepare for future careers and to enjoy the class. Examples relating this include:
Improved professional interaction:

I have met many elderly through this visit and learn the communication skills in interacting with older adults. This visit is very valuable to me since I can interact with many elderly from the home visit. (coh3yr1av#5)

Increased confidence in professional interaction:

I feel more confident in interacting with older adults as I seldom interact with them in my daily life previously. Now I have some clues on how to interact and communicate with them... (coh3yr1wch#118)

Now I have more confidence to interact with different kind of elderly people, especially those have limitation in certain kind of movement. I used to think that they are easy to get hurt. It's a good experience for me that I don't have much experience to interact with those elderly people who have limitation in movement. I can learn how to communicate with them, teach them and help them to do different kinds of exercises through this activity. Now I know what I should or should not do when interacting with them in the future. (coh3yr1wk32)

Increased awareness of older adults:

As I remember that activity was our first exposure to the elderly community. They are real persons, they have emotions. It is a good experience to communicate with them.... (coh1yr3focusgroup)

Improved attitudes towards older adults:

...it is amazing that older adults could be so active and healthy.... (coh3yr1wch#22)

Theory-practice link:

I think that in the tutorials and lectures we seldom have time to interact with the elderly. The lecturers may share with us how to handle certain situations, but it is only the theoretical, but we don’t have much chance to apply, but I think through this interaction we can apply our knowledge and theory and have real contact with the elderly. We can talk to them and show some exercise to them. It can enhance our confidence. (coh1yr2focusgroup#3)

Relevance to future career:

This precious opportunity stimulates me to interact with them and be more confident when approaching them. It gives me a chance to contact with some older adults who are of weaker health condition that I've not experienced before. Makes me to be prepared and reflect myself for the improvement in interacting with the elderly in future clinical placements. (coh3yr1wk78)

Limited prior exposure

Students recognized their limited prior experience with older adults and commented on the value of direct interaction with older adults encountered during the community-based learning experiences:
We gain more experience on communicating with older adults. This activity is valuable and worthy, because in our daily life we don’t have chance talking/interacting with elderly… (coh3yr1wk#35)

This chance to interact with the elderly is quite treasureable for me as I seldomly interact with older people in my daily life… (coh3yr1wk#44)

*Could not have been experienced in the university classroom*

Students also commented that what they learned through the direct experiences with older adults during the community-based learning experiences could not have been experienced in the university classroom:

... I could learn a lot from the ‘community classroom’ and got experience to interact with older adults. This experience cannot be got in the university laboratory, therefore, is very useful. (coh3yr1wch#31)

...We can learn a lot of things that cannot get at university (coh3yr1wch#100)

*Variety of Experiences*

Students acknowledged the value of a variety or an accumulation of direct experiences in which they could build upon to further improve their communication skills and/or increase their confidence in professional interaction with older adults.

It’s a valuable chance for us to meet different health states in elderly. As we can compare those people in Wong Chuk Hang (*Exercise Partners with Older Adults*) with those in Wah Kwai (*Walking and Talking with Frail Older Adults*). We need to provide different assistance and learn how to apply our knowledge in meeting their needs of different people. (coh3yr1wks#113)

It (*Social Visits*) made me feel more confident in interacting with elderly as I can communicate with 5 different clients which let me learn some skills in talking with elderly. It is absolutely an unique experience which we can actually have a deep and detailed interview with the elderly… (coh3yr1sv#68)

*Improved Professional Interaction*

Within the broad theme of improved professional interaction, categories were identified from students’ comments:

- Introduction to professional interaction
- Therapeutic interaction
- Demonstration of empathy
Introduction to Professional Interaction

Students provided comments indicating the value of the community learning experiences in the development of their professional interaction skills with older adults, e.g. to use verbal, manual and movement (see Figure 2.2):

The exercise programme in this visit is quite useful for me because through this visit I know how to plan the exercises for the elderly safely and effectively, and how to teach the elderly, e.g. using verbal or tactile cues. Besides, body language and demonstration are very important when I meet the client who cannot speak Cantonese or can’t communicate with me. (coh3yr1wch#112)

I think it (Exercise Partners with Older Adults) was valuable for us to use simple sentence or some demonstration to teach the elderly how to do some exercise, because before that I thought it was quite difficult to teach elderly to learn new things, for example exercise. It was quite unfamiliar to her to do such exercises. So I think this function will help us a lot to practice our verbal skills or our demonstrations, how to teach the elderly to do exercise and how to correct their posture. (coh1yr3focusgroup)

Another aspect of professional interaction that students commented on was the difference in interaction with unknown as opposed to familiar older adults (social versus professional interaction):

I found it very useful because for me, before that experience I just have my grandmother. It was the first time for me to work with someone I don’t know and I need to act like an instructor, help him or her to do the exercise. Although this situation may be a bit different and it may be a good experience to act as a start to experience how to instruct a person to do exercise. (coh1yr3focusgroup#cedric)

This is a valuable experience for me, as I seldom have the chance to communicate with the elderly that I do not know.... (coh3yr1wch#6)

During the Social Visits, students interacted with older adults independently in the clients’ homes. The independent nature of this experience was a progression from the two earlier community experiences (Exercise Partners with Older Adults and Walking and Talking with Frail Older Adults), which were lead by faculty members. Students acknowledged the learning benefit of independent interaction with older adults:

I have met many elderly through this visit and learn the communication skills in interacting with older adults. This visit is very valuable to me since I can interact with many elderly from the home visit. Since there is no social worker accompany us, and therefore it provides a chance for me to communicate with elderly more independent. Besides, different life styles of elderly was shown. And I can know more about their problems in daily living and their relationship with family or neighbourhood. (coh3yr1sv#5)
Therapeutic Interaction

Students also recognized the value of good communication and listening skills to develop a therapeutic relationship with the client. According to Jensen et al (2000), listening to the client is an essential evaluation skill for expert practice in physiotherapy.

Client will talk more to those who are concerning them. So if you have a better communication skill, you will be more successful in understanding the needs of the client. (coh3yr1wk)

...Even I found that I cannot communicate very well with these two clients who have expression problem, I think I can handle the cases, like using body language and be patient in listening their saying. (coh3yr1wk#90)

I learn more to be a good listener of the elderly and ask questions more politely! (coh3yr1sv32)

Empathy

The literature in therapeutic interaction highlights the importance of empathy, ‘the ability to put one’s self in someone else’s position’ (e.g. Davis, 1998). Students’ comments that reflected an increase in empathy with older adults were difficulty to recognize as showing empathy is a complex phenomenon. Comments that reflected an ability to see things from the older adults’ perspective or a greater understanding of older adults were noted as initial steps to demonstrating empathy.

... As I listened to her, I can understand more about elderly too.... I am so impressed for it and I hope I can understand them more, to help them more in the future. (coh3yr1wch#28)

Good experience as I can learn more on how to got along with the elderly, how to instruct them with suitable words, how to help them when they have difficulties doing the exercises and experience the kind of difficulties they had through talking with them during the exercise teaching. (coh3yr1wch#83)

I found this experience a treasurable one. I never found that interacting with elderly can be so touching. What I understand most was not how to apply the knowledge acquired from my PT study, but on how to communicate with the elderly. I am sure that what the elderly needed was not materials, but was the loves and concerns from the other. They were really very happy when we visited them. Most of them were willing to share, this probably made them have a better emotional status. (coh3yr1sv#61)
Increased Confidence

General Increase in Confidence

Students provided general comments relating to improved confidence to interact professionally with older adults following each of the community learning experiences:

Exercise Partners with Older Adults

... I have more confident on talking and interacting with elderly after this experience (coh3yr1wch#2)

... It gives me valuable chance to communicate with older adults and make more confident in communicating with them. (coh3yr1wch#76)

Walking and Talking with Frail Older Adults

This is a very good chance to let us interact with the elderly, so it can increase my confidence to communicate with them, therefore, it is a great experience. (coh3yr1wk#11)

I have more confidence to interact with older adults. I know that concern and observation are important when interacting with older adults. I think this is a good experience to me. ... (coh3yr1wk#49)

Social Visits

After this experience I have more confidence in dealing with elderly. It need patience with dealing with them. It was a valuable experience, I learnt the skills of how to treat, communicate with elderly... (coh3yr1sv#1)

... Before the activity, I think I cannot learn much interaction. But now I think differently that I can interact with more confident. ... (coh3yr1sv#39)

Mastery Experience

Some students provided specific comments, describing successful or mastery experiences [the most influential of the sources to build efficacy (Bandura, 1997)], in each of the community-learning experiences, which helped to build their confidence.

Exercise Partners with Older Adults:

At the beginning I was quite afraid to talk with the elderly because I seldom chat with the elderly in my daily life. But once I contacted with this client, I was quite happy as she responded me well. So, I could go through the tasks smoothly. Because of this, I was more confident in dealing with older adults. (coh3yr1wch 53)
Walking and Talking with Older Adults:

After this visit I am more confident to interact with older adult, because in this visit the client is willing to talk with me and do the activities that I ask her to perform and I can use the knowledge I learned from school to help her.... (coh3yr1wk#17)

Social Visits:

I think most of the elderly are willing to talk with us, this make me become more confident. This is my first time to visit the elderly at their home. It is more different from visiting them in the elderly home because I should show more confidence so that they are willing to let me go into their home. And in this case, no one will help me when I visit them, so I should solve problem by myself. (coh3yr1sv#9)

Students’ comments indicated that they greatly valued the friendliness and cooperation of the older clients, which contributed to their mastery experiences in all three of the community learning experiences:

Actually many older adults are very nice and willing to following instructions, so I feel more confident in interacting with them now. (coh3yr1wch#21)

I feel the elderly are nice and less fear to interact with them... (coh3yr1wk#23)

After having this experience, I have been more confident of interacting with the elderly. For many elderly, they are nice and talkative.... (coh3yr1sv#24)

Vicarious Experience

A second source of information used to build self-efficacy is through vicarious experience or comparison with peers (Bandura, 1997). Observing successful performance of peers can enhance an individual’s self-efficacy of one’s own capabilities. Although not a frequent comment by students, it was acknowledged:

A very good chance for me to learn more how to go with older adult from both the direct experience by myself and the caregiver (through the caregiver). (coh3yr1wk21)

When I was first enrolled in PT I thought I could communicate with the elderly quite successfully, but that is not true. I remember the first time when I communicated with the elderly during our first visit to an old age home and I found it very difficult to initiate talk. It is not because they are old, because they are a stranger to me. Even with those clients that are normal adult I find it difficult to initiate talk. But then I observe other classmates to talk with them very successful, like Jonah, and I then I thought to myself to initiate talk, it’s not as difficult as I think. So with more practice now I am quite confident to communicate with them. (coh1yr2focusgroup#5)
Verbal Persuasion

Few students commented on the value of verbal persuasion or positive reinforcement received from the older adults:

... and they (older adults clients) encourage us to do better in our school. This makes me feel really good and get confidence to do this. (coh3yr1sv#25)

The elderly were very helpful in the interview session. It encouraged me a lot for further interaction with the elderly. (coh3yr1wk#26)

Increased Awareness of Needs of Older Adults in Hong Kong

With limited prior exposure to older adults, many students seemed unaware of the difficulties or challenges that an older person in Hong Kong may encounter. The following comment written with respect to the Social Visits, reflects a deeper understanding of what it means to grow older and the importance of one’s quality of life:

From the beginning of the course I have interacted with many elderly, this vital experience make me feel confident and comfortable in upcoming classes and projects. The experience from this action project is unique. This leads me have a deep consideration about the health status, wellness and quality of life among elderly in the community. I understand that growing older does not necessarily relate to wellness and fortune, but their quality of life and dignity are the most important indicators. (coh3yr1sv)

Students’ comments reflected a general increased in awareness of the living situations and needs of older adults in Hong Kong:

This programme give me a chance to contact with different kind of elderly. It give me a brief idea on older adults to me. It can help me to decide the approach and teaching method toward the older adults in the later time. (coh3yr1wch#51)

So having such visit is very valuable for us. We can have chance to communicate with elderly. That can also let us know more about elderly e.g. their needs, their living style, attitude, etc. These all are important for us to know what service we should provide in the future. (coh3yr1sv#8)

Students also acknowledged more specific issues such as older adults living alone and a deeper consideration of the health status of older adults:

In this visit I found that the one I’ve interviewed is very lovely and almost all the time he’s alone. Maybe we should recognize and understand them more, and spend more time with them, talk to them....(coh3yr1wk#125)
From the beginning of the course I have interacted with many elderly, this vital experience makes me feel confident and comfortable in upcoming classes and projects. The experience from this action project is unique. This leads me to have a deep consideration about the health status, wellness and quality of life among elderly in the community. I understand that growing older does not necessarily relate to wellness and fortune, but their quality of life and dignity are the most important indicators. (coh3yr1sv#43)

Lastly, students commented on the value of seeing the home environment of the older adult:

We do the home visits, we know more about the home environment, some of our clients are elderly, so we know more about their home environment and what they will face, so if we are to discharge a patient we will consider that. (coh1yr2focusgroup#2)

I think that the exercise class and home visits can help us to interact with the elderly, but it may not be enough. For example I think the home visits can help a lot, because in order to know the elderly holistically we need to know their living environment or if the elderly has any living difficulties b/c this difficulties is very common with lots of elderly, so if we want to interact with the elderly more confidently we need to know more background, more usual daily activities they will face in order to communicate with them. (coh1yr3focusgroup)

Change in Attitudes Towards Older Adults

In addition to showing an increase in awareness to the living situation and needs of older adults, some students provided comments indicating a positive change in attitude towards older adults. Students were surprised that older adults could be active and healthy:

I have observed the structure of elderly centre and it is amazing that older adults could be so active and healthy. (coh3yr1wch#22)

In my own experience, the elders are always slow in motion, need other people’s help and using walking aids. From this lesson, they give me another impression: they are quite independent, strong and active... (coh3yr1wch#37)

I am impressed that the older adult who has improvements and disease can also be very active and has anatomy of himself/herself. (coh3yr1wk#86)

Some students expressed disinterest or fear of interacting with older adults with impressions that older adults are boring or unfriendly:

I know some skills to deal with the elderly. It’s a marvellous experience for me. I thought it'd be boring talking with elderly, but I was wrong. They were really nice and active. (coh3yr1wk#5)
At first I couldn’t believe that elderly people are so nice that they can talk with me because I meet older people seldom. In my mind, older people almost scare me. For example, they (are) always yelling to others for no reasons. But now, I changed my mind. I think they are quite nice to talk with. Some of them even more cheerful, always wanna play with us, they will also care about others not only themselves. ... first when I think of “I have to visit an elderly centre”, I was quite scared because I seldom meet elderly and in my mind, I think they are old fashion, scary and some kind of annoying. As I once come up with my client, I totally changed my mind. She is a funny guy and talkative. As I listened to her, I can understand more about elderly too. When we once doing the exercise, I was surprised that all of the elderly there can do these things very well. Not too slow and they have power. Even when we did something wrong, they didn’t yell at us, only encourage us and comfort us. I think the elderly are almost nice, not old fashion anymore. I am so impressed for it and I hope I can understand them more, to help them more in the future. (coh3yr1wch#28)

In the past, I think all elderly’s home have so many things, they are old fashion and always think themselves poor. But after this visit, they changed my mind, they not only make jokes but clean at home, no smells and really friendly. In this visit I know more about older adults. Some of them have some illness problems but they live happy. They won't always say that they are so poor. Some of them are living with their husband or wife, they said if they can walk or do things normally, they will do all the house work by themselves. They won't need anyone to help them to live because they don't want to annoy people. This makes me have brand new mind for them. I didn't think of their thinking is like this. I thought they always need help even though they are normal to live. And they encourage us to do better in our school. This makes me feel really good and get confidence to do this. (coh3yr1sv#25)

Theory-practice Link

Within the theme of theory-practice link three categories have been identified: 1) improved understanding of theory or concepts taught in the university, 2) the application of theory / concepts learned in the university (theory to practice), 3) the application of learning in the community setting to the university classroom (practice to theory). Students’ used the word ‘theory’ quite broadly, including practical sessions, tutorials or lectures within the university setting. To the student, much of their learning in the university appeared hypothetical, or theoretical until they were able to directly apply it to a ‘real’, clinical situation.

The most frequent comments relating to the theory-practice link were the value of applying knowledge or theory acquired in the university setting to the community (real-life) setting, as depicted in the following comments:

As I had some work experience communicated with elderly before, I did not find any problem in the interaction with old people. However, I also need to improve in some
communication skills, e.g. how to encourage them to do more exercises. To be honest, PPTP (Principles of Physiotherapy Practice) subject is needed to learn more experience outside classroom, rather than teaching theory in university all the time, because in theory we cannot take special care of our classmates as they don’t have any physical or mental problem. We cannot learn how to apply the knowledge in the critical situation if we don’t have any experience. We can teach some theory during the visit. This will make us to learn much better, if we only know the theory without any actual activity, we can only do nothing during clinical placement... (coh3yr1wch#36)

Most older adults are nice and willing to share their feelings with us. I find it quite easy to communicate with them. Also I can learn things from them sometime. The visit this time gave me a very good experience in dealing with older adults. I can really apply what I have learnt in school before in real situations, which it can really facilitate my learning. (coh3yr1sv#15)

Students commented that the community learning experiences enhanced their understanding of theories or concepts taught in the university:

...In this home visit, I can practice some skill before learnt in PolyU. Such as interview skill, observational skills and some DMB (Development of Motor Behaviour). It make me more clear what I have learnt... (coh3yr1sv#35)

... also, some of the older adults who use aids for walking, I can learn more about my textbook when observing the movement. (coh3yr1wk#68)

Lastly, a few students’ comments reflected both the theory-practice and practice-theory linkage useful in the community learning experiences, and recognition of the older client as a ‘teacher’ for the student:

...They (older clients) can also teach us some theory of PPTP (Principles of Physiotherapy Practice) and DMB (Development of Motor Behaviour). I hope that we really can teach them to do some exercises. (coh3yr1wch#37)

Most older adults are nice and willing to share their feelings with us. I find it quite easy to communicate with them. Also I can learn from them sometime... (coh3yr1wk#15)

Relevance to Future Career

As stated earlier, the majority of students entering the physiotherapy programme have little or no prior knowledge or experience in the area of physiotherapy. Given this situation, early learning experiences in physiotherapy provide the students with an exposure to professional interaction with real potential clients.

It was a great experience for students to know more how PTs (physiotherapists) work and how to communicate with older people. (coh3yr1wch 56)
It is a unique experience for me as I can interact with ‘patient’ like elderly in the centre that gives me experience of how to communicate with my future patient in the clinic.

Students also commented that the community experiences helped to prepare for clinical placements as well as the relevance of interaction with older adult clients.

This experience can provide us a chance to contact with elderly. Different elderly have different characteristic and their emotional states are different. So different manners are used to initiate them. More practise will help us to have more confident. To become a physiotherapist, we will frequently keep contact with elderly. So having such visit is very valuable for us. We can have chance to communicate with elderly. That can also let us know more about elderly e.g. their needs, their living style, attitude, etc. These all are important for us to know what service we should provide in the future.

I think it is valuable although like K. says it may be totally different than what we see in the hospital, but in year one we got the chance to expose or open our minds and how exercise class and have the chance to communicate with other people other than our age, which is quite important for our profession.

Finally, within relevance to future career students remarked on the importance of communication for the treatment of clients and on the importance of students’ exposure to the community as a potential health care setting.

I think that the community PT and the hospital is very different, but what we learn about the community PT is only a few words. I have joined the voluntary work to service a self-help in the CRN [Community Rehabilitation Network]. I see that the work of the PT is totally different than the PT in the hospital, they need to organize the things for the elderly, organize the group activities, that’s totally different than a hospital PT. I think we don’t have any experience in this kinds of area and we need to explore our view we cannot only focus on the hospital.

I think more groups in the community would be useful, nowadays, b/c in the hospital settings there are not so many jobs. I think that the future of the physio is in the community, so I think that working more in the community is useful.

Criticisms and Recommendations

Criticisms

Students expressed criticisms of and provided recommendations for the community learning experiences, however, there were few [Exercise Partners with Older Adults: 11% (n=13/122); Walking and Talking with Frail Older Adults: 17% (n=21/123); Social Visits: 15% (n=13/87)] (cohort 3). Of those that were expressed for the Exercise Partners with Older Adults and Walking and Talking with Frail Older Adults
learning activities, the majority of comments related to two main areas: 1) insufficient
time with the older adult clients and 2) the community venue was too small. Students
requested more time with the clients because they found the task of communication
difficult:

I think the time of the community-visit is not enough for us. Besides the time required
for transportation and discussion, it seems we only have about 1 hour to communicate
with those elderly. Actually, it is quite difficulty for me to communicate with my
client. The most important reason is the time limit. Another reason is that I haven’t so
much experience about visiting he elderly home. (coh3yr1wch19)

I think the time for the community classroom should increase. There is too little time
for us to interact or do exercise with the elderly. (coh3yr1wk90)

Another student commented that more time with clients in the community to allow for
a deeper understanding of older adults:

A unique and valuable experience can be learnt in ‘community classroom’, but the
duration time can be extended longer. That may give us more inspiration and more
time to have a deeper look into various aspects of life of the clients. (coh3yr1wch 32)

Alternatively, this student felt there were too many activities during Walking and
Talking with Frail Older Adults community experience:

...Too many activities; but limited time. It would be better if we have more time.
(coh3yr1wk29)

Comments regarding limited space were provided for both the Exercise Partners with
Older Adults and Walking and Talking with Frail Older Adults experiences. Both of
these learning activities were held in a community centre. Given the high price of real
estate in Hong Kong, lack of space is a common issue. For the exercise class, 15-16
students were partners for the same number of older clients. Also present was the
faculty member and at times other community leaders. Students were required to be
aware of their own client’s movements as well as others to ensure safety while
performing the exercises. Due to space limitations, students were required to stand,
with only enough space for chairs for the clients. Although at times this may have
been a bit awkward for the students, it was the best facility at that time. Future
developments could include finding a larger venue or reducing the student numbers.
Reduction in student numbers per class, would however, increase the workload of the
faculty member administering the class.
...On the other hand, the room is not spacious enough so every person have a limited area to perform exercise. (coh3yr1wch76)

...The room is not spacious enough and the time is too short to talk to the clients (coh3yr1wk98)

Most criticisms of the Social Visits centred around the timing of the visit which was near the end of the first semester when students were preparing for exams and completing final assignments. This visit needs to occur near the end of semester as students use their previous experience to interact more independently with older adults in their own home. Monitoring students’ workload is important, scheduling of the visit needs to be coordinated with the community organization and the students’ timetable.

...However, the timing is not appropriate for us. It is because most of the deadline for assignment, reports and presentation are within this week. We couldn't have enough time in doing all these very well. (coh3yr1sv14)

... Quite OK, but the timing is not so good. We are quite busy recently, we have many tests. Actually, I hope this function can be arranged in the semester break while we are free. (coh3yr1sc20)

Focus group interviews with second and third year students, who had completed three to four clinical placements (year 2 completed 14 weeks of clinical; year 3 completed 20 weeks of clinical), commented that the community-based learning experiences (Exercise Partners with Older Adults and Social Visits) were valuable to year one students, especially for those students who have had limited contact with older adults. After exposure to the clinical environment, however, many of the students commented that there was a difference between interacting with cooperative, community-dwelling older adults, and those they encountered in the hospital setting.

I think it’s valuable for us in year 1 because it provides us basic idea or a chance of interaction with elderly people, but the elderly we interact with in the placement are ones with problems. They may present differently, they may demand more on you, of course they come for treatment, physically and psychologically also, however, the experience in year one did not provide that. (coh1yr3focusgroup)

Actually in this Aberdeen centre is quite different from the elderly in the hospital because they are quite healthy and willing to communicate with us. In the hospital some of the elderly do not want to communicate with us and they are quite ill, so it is a different experience. (coh1yr2focusgroup#3)
Some students felt that one or two community learning experiences were not sufficient to increase their confidence levels as they felt they did not have enough physiotherapy-specific knowledge or may have had similar experiences in the past:

I think certain activities are good for a start, but the ongoing confidence cannot be built up by one or two activities.... (coh1yr2focusgroup)

...Some who have a lot of experience may not like to repeat this, they may find it very mundane, and not a lot to gain, whereas other students may gain a lot from the experience.... (coh1yr2focusgroup#5).

Finally, students commented on the different professional interaction utilized in the community learning experiences compared with assessment and treatment skills required during the clinical placements:

The format for the class action project is different from the clinical because the project no need to find the physical problem of the patient, it's just the set up questionnaire, we ask the questions and they give answers. Different from clinical where we need to ask specific questions and find out the problems. So the format is different. (coh1yr2focusgroup)

Recommendations
The main recommendations provided by the second and third year students included providing more community-based opportunities with increasing complexity and clinical applications:

I think initially we can try to communicate with the elderly that are relatively healthy rather than try to start with elderly with disabilities because I think it is easier for us to communicate with healthy/ happy elderly is easier than elderly with disability. So I think that the level of difficulty could be increased. (coh1yr2focusgroup#3)

I think it would be better that if the type of the elderly would be a little bit different from the visit in year one, because they are the normal elderly. I think that if we can visit the elderly with some disability or they are in hospital, I think that it is much valuable for us to reach this kind of patients b/c they will be the target group of our service. So we can learn more about the communication first, to ask what is their problem, something like S/E or some social communication between them. I think that it will be more meaningful. (coh1yr3focusgroup)

Students also requested more community experiences to broaden students' perspective of physiotherapy in the community:

Greater exposure, not just geriatrics, but what physiotherapy will involve, so they will have earlier preview of what is expected of them, what areas they will be working in,
and how they will interact and incorporate what they learn, not just confined to HA [Hospital Authority], but expose more on the kind of work they can be expected to work. Give a broader horizon to view the profession, especially in this current climate where HA is not really that encouraging. So it’s very essential for 1st year students to understand the changing environment, but just for PT, but the whole medical profession in Hong Kong. There they get exposed to different environments. (cohlyr2focusgroup)

This section has focused on feedback provided by the students. In section 3, feedback from the educators and clients is reviewed.

Section 3: Feedback from Clients and from Educators

Client Feedback
The client feedback presented relates to the third implementation of the community-based learning experiences.

Exercise Partners with Older Adults
Following the completion of the exercise classes, older adult participants (n=45) were asked to respond to a questionnaire regarding how they benefited from the exercise classes. Questions asked included: (1) Today, how do you rate your health; (2) Did you notice any improvement in your health status after the exercise programme? (3) Have you had any dizziness in the past month? (4) Have you had any falls since the exercise programme (in the past 6 months)? (5) How would you describe your pace of walking? (6) Did you benefit from the exercise programme? If yes, how did you benefit: emotionally (I felt better), socially (I enjoyed the people), physically (I can do more.) (7) Have you continued to perform exercises from the class? (8) Did you enjoy talking with the students? (9) Did your student exercise partner increase the benefit of the exercises? (10) In future, would you participate in more exercise classes of this type?

As many of the older clients were unable to read the questionnaire, two research assistants collected responses in an interview format, in Cantonese. The research assistants were physiotherapy graduates who had experience interacting with the older clients. The research assistants discussed the Cantonese translation to ensure they were using similar terminology and format. To minimize a positive bias from the
older clients, the research assistants had not been involved in the implementation of the exercise classes. Most of the clients (84%, n=38) were available, some clients, however, were not able to attend the interview session due to illness or travel out of Hong Kong (16%; n=7).

The majority of respondents (92%), reported that they benefited overall from the exercise classes. More specifically, they benefited emotionally (68%), socially (74%), and physically (68%) from the exercise classes. All (100%) of participants surveyed reported they enjoyed the interaction with the students and all but one of the participants (97%) reported they benefited from the student interaction. All (100%) participants stated they would participate in a similar activity in the future.

**Walking and Talking with Frail Older Adults**

All older clients reported they were satisfied or very satisfied with the interaction with the students and all reported they would participate in the similar activity in the near future. Comments provided by some of the participants revealed they enjoyed the experience and they felt happy interacting with the students.

**Social Visits**

Over 300 home-bound older adults were interviewed by the physiotherapy students using a questionnaire supplied by the community organization. The questionnaires (written in Chinese) were returned to the community organization to be utilized in planning their home-based services.

**Feedback from Educators**

A questionnaire was distributed to the five faculty members that had participated, in some manner, in the development and/or implementation of the community-based learning experiences (see Appendix 9). One respondent developed and facilitated the third learning experience *Walking and Talking with Frail Older Adults*. A second respondent facilitated *Exercise Partners with Older Adults* and evaluated the Development of Motor Behaviour Written Project, which included students’ reflections of the community learning experiences. The third respondent was also a
facilitator of Walking and Talking with Frail Older Adults. Two faculty members did not return the questionnaire, one was the subject leader for Principles of Physiotherapy Practice, the subject in which the learning experiences occurred. She had only observed one of the community learning experiences - Exercise Partners with Older Adults. The second faculty member that did not return the questionnaire implemented the Exercise Partners with Older Adults learning experiences for the third cohort of students. Of the faculty who responded, two had experience with Walking and Talking with Frail Older Adults, one with Exercise Partners with Older Adults and none had experience with the Social Visits.

When asked “...how satisfied were you with the beginning level physiotherapy students’ ability to interact with older adults in a professional manner?”, two respondents answered ‘satisfied’ and one responded ‘very satisfied’. Comments they provided highlighted the value of interacting with older adults in a non-threatening environment (i.e. students were not directly assessed), and the professional and sincere approach adopted by the students.

Students were able to interact with older adults in a non-threatening environment (e.g. clinical placement) where assessment is ongoing. Most students were able to talk to the elderly and got their interaction, while few students got stuck...

Most students were able to interact professionally and were sincere when speaking with the elderly. Most were also able to appropriately encourage the participants during the exercise class...

When commenting on the Walking and Talking with Frail Older Adults community experience, the developer commented that students tended to focus too much on their notes, which may have an impact on the quality of interaction:

Most of the students did a great job communicating with their ‘client’... however I noticed a tendency to be very focus on their notes... probably due to not being prepared enough prior to the learning experience... (developer)

Faculty responses to the question “What aspects of this community-based learning experience best-encouraged interaction between the students and older adults?” highlighted the importance of real-life experiences to enhance communication skills and increase their understanding of older adults:
It gave real life experiences for the students to interact with older adults. They could realise better about the type of communication required when interacting with older person: slow, simple short sentences in a repetitive manner. They also could understand the background of older persons and the type of responses that one may get when we ask the older person to perform the task. Students could also see the actual performance of the older person and that will help students in planning further activities precisely.

Other more specific positive aspects of the community learning experiences listed by the respondents included: the beginning of the class when students introduced themselves to the client and implemented simple questionnaires and performance measures, teaching of exercises during the actual exercise class (Exercise Partners with Older Adults), responsibility for the clients safety (Exercise Partners with Older Adults and Walking and Talking with Frail Older Adults), and the lab booklet given to the students prior to the Walking and Talking with Frail Older Adults learning experience. The lab booklet included specific guidelines and measurement tools, which the respondent felt gave the students a sense of ‘security’ and an idea about what to expect during this community learning experience.

The comprehensive lab booklet may have, however, contributed to this respondent’s comment above regarding students’ focus on their notes as opposed to the interaction older client. Students’ focus on their notes was not a problem during the Exercise Partners with Older Adults, as students were given index cards to record their findings with the older adults and were provided with hand-outs after the class during the discussion session. For the Walking and Talking with Frail Older Adults, additional preparation prior to the class as well as limiting the notes they are able to carry with them during the interaction may enable the students to focus more on the interaction and less on the procedural guidelines.

Other positive aspects of the community-learning experiences reported by the faculty members included: the value of active participation of the students, the ability to practice skills learned in the classroom with unknown elderly clients (not just their peers) in a community (real-life) environment, challenges of putting theory into practice, assuming responsibility for the safety of their clients, interaction with caregivers in a day care centre and the elderly clients appeared to be enjoying the interaction with the students.
Two of the faculty respondents thought that the community experiences were successful in promoting students' self-efficacy (confidence) to interact with older adults in a professional manner. As illustrated in the comment below, the facilitator observed students' positive (mastery) experiences which she assumed would then increase students' confidence:

Most students were able to demonstrate professional attitudes and communication skills when interacting with their clients. Some may have had a negative experience with a few clients who were especially withdrawn, but there were not many of these types of clients. I would assume that since most students were able to communicate well with their clients, the students would have gained confidence in their own abilities to communicate with the elderly after this experience.

The positive comments provided by the faculty members matched the themes identified from students' feedback: (1) the importance of direct experience and mastery experience to improve professional interaction skills and self-efficacy in these skills, (2) the facilitation of the theory-practice link, (3) the relevance to students' future career and (4) an experience they could not have acquired in the university classroom (see Figure 7.6).

One faculty respondent felt that the community-based learning experience (Walking and Talking with Frail Older Adults) was not successful in promoting students' confidence to interact with older adults in a professional manner. This faculty member was a facilitator/observer of the learning experience. The reason she provided was that the interaction was not necessarily professional in nature, she reported that she observed some students using some of the questionnaires or measurements incorrectly and providing incorrect information to the clients. This comment coincides with comments made by the developer/instructor of this learning experience who stated that she found it difficult to oversee the skill acquisition component for all 25 students (see below). This is also interesting in that the facilitator/observer is Cantonese-speaking, so that she could understand the student-client interactions, whereas the developer/instructor did not understand Cantonese.

The purpose of this learning experience was not to ensure students' competence in implementing specific clinical tools, but was to provide beginning level students with an exposure and practice with implementing these measures. Regardless of students'
actual performance on use of specific clinical measures, students’ efficacy to interact with older adults was improved through the direct experience. Additional preparation of students or increased feedback after the experience may enhance students’ performance with these measures. Further training and experience in specific measures is required as they progress through the physiotherapy programme.

The faculty respondents also expressed negative aspects of the community learning experiences and recommendations for further implementation. One facilitator felt that the students were expected to perform too many activities during the specified time, students then tended to rush through the activities without knowing whether they performed them correctly or not (*Walking and Talking with Frail Older Adults*). Also with regards to *Walking and Talking with Frail Older Adults*, the developer/instructor reported difficulty in overseeing the skill acquisition of each student during the class (*n*=25). With respect to *Exercise Partners with Older Adults*, the faculty respondent commented that the number of elderly clients present for each exercise class was not predictable – at times there were too many older clients for the students to handle while other times there were not enough for each student to work individually. This situation was partially alleviated the following year as clients were asked to pay a small fee to help ensure their consistent attendance.

Recommendations for *Walking and Talking with Frail Older Adults* included:

More emphasis on the need for the students to be well prepared prior to the experience i.e. to be familiar with the expectations, with the tools that they will be using, to be confident that the basic skills that they will need to apply and that they have learned in school should be revised and adequate. They should also be given the opportunity for clarification prior to the class.

A debrief session with the whole group where videotaped behaviours could be discussed in class for learning purposes.

Keep the objectives of the class ‘in line’ with that of the class and that of the subject (PPTP).

Reduce the number of activities and give feedback on their performance on site.
Discussion

The effectiveness of the community-based learning experiences was evaluated using a variety of methods to create a triangulation of the data. In Section 1, quantitative feedback from the students revealed that many of the students reported an increase in confidence to interact in a professional manner with older adults, that the majority of students rated quality of the learning experiences as good or above and most students recommended the continuation of the community experiences. These data were collected on three cohorts of students, cohort 1 results were presented in Chapter 5, this chapter presented results from cohorts 2 and 3.

Students’ self-efficacy to interact with older adults in a professional manner increased significantly over the first semester. During this four-month period, the three community-based learning activities were the only learning activities designed to improve professional interaction with older adults. A positive bias in students’ scoring might have occurred if students wanted to please the instructor by scoring higher. The second measurement of self-efficacy was, however, collected by myself. Although I was present during many of the community learning activities, I was not an instructor nor was I responsible for any student assessments, thus my position was neutral. Given the time period was four months, it is unlikely that students would have remembered their previous efficacy scores.

In Section 2, the complexity and richness of conducting the learning activities directly with older clients in the different community settings was observed through the major themes identified: improved professional interaction, increased confidence to interact in a professional manner with older adults, increased awareness of the living situation of older adults in Hong Kong, improved attitudes towards older adults, enhanced theory-practice link, and the relevance to their future career. The themes also matched the original objectives of the community-based learning experiences: to provide students with an experiential base in beginning level professional interaction with older adults, to increase students’ confidence to interact with older adults in a professional manner, to provide students with an exposure to community settings (the people and the environment), to provide an introduction to group exercise with
community dwelling older adults, and to provide an opportunity to give service to the community (Table 7.2).

The themes that emerged revealed the importance of direct experience with older adults, both from the frequency of student comments as well as its link with the other major themes (see Figure 7.6 and 7.7). This provides strong support for the experiential nature of the learning activities. Teaching communication skills to health care practitioners has received increasing emphasis in many curricula (e.g. Laidlow et al., 2002), and experiential learning activities in the form of role play are commonly used (Laidlow et al., 2002; Burnard, 1998; Northouse and Northouse, 1998; Davies, 1998). Based on student comments following the community-based learning activities the direct interaction with ‘real’ clients in a community setting was a strong factor in their learning experience.

Table 7.2 Learning Objectives and Identified Benefits

<table>
<thead>
<tr>
<th>Learning Objectives</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>To gain experience in beginning level of professional interaction</td>
<td>Improved communication skills</td>
</tr>
<tr>
<td>To increase students' confidence to interact in a professional manner with older adults</td>
<td>Increased confidence in professional interaction</td>
</tr>
<tr>
<td>To provide students exposure to community settings</td>
<td>Awareness of older adults</td>
</tr>
<tr>
<td></td>
<td>Relevance to future career</td>
</tr>
<tr>
<td>To provide an introduction to group exercise with older adults</td>
<td>Relevance to future career</td>
</tr>
<tr>
<td></td>
<td>Theory-practice link</td>
</tr>
<tr>
<td>To provide an opportunity to give service to the community</td>
<td>Awareness of older adults</td>
</tr>
<tr>
<td>To acquire an appreciation for exercise abilities of community-dwelling older adults</td>
<td>Awareness of older adults</td>
</tr>
<tr>
<td></td>
<td>Relevance to future career</td>
</tr>
<tr>
<td></td>
<td>Theory-practice link</td>
</tr>
<tr>
<td>To acquire an appreciation for social challenges facing older adults</td>
<td>Awareness of older adults</td>
</tr>
</tbody>
</table>
Students' comments supported their rating of 'more confident' on the feedback questionnaire. The most common source of increased confidence described by students was through a mastery or successful experience. Students often referred to the friendliness and cooperative nature of the older clients, which helped them to interact and perform their activities successfully. Further analysis and discussion on the construct of self-efficacy to interact with older adults in a professional manner follows in Chapter 8.

An increased awareness of older adults and improved attitudes towards older adults was an identified theme, however, the longevity of these changes and the impact of changes on actual behaviour towards older adults in other situations are not known. Although the community-based learning activities were not designed to change students’ attitudes towards older adults, written comments depicted a change in some stereotyped views of older adults, in particular, that older adults are not active and older adults are not friendly. This is a promising finding, considering Taylor and Tovin (2000) reported no change in physiotherapy students’ attitudes following a course in geriatrics and reported their findings as consistent with others (Dunkle and Hyde, 1995; Haight et al., 1994). Taylor and Tovin (2000) recommended the importance of providing students with a positive geriatric clinical experience to attract future physiotherapists to work in geriatric settings. Given the preliminary results from this study, further investigation into students’ attitudes towards older adults and the influence of community-based learning activities is justified.

The community learning experiences seemed to have assisted first year students with their university learning (theory-practice link) and a better understanding of their future career. The admission criteria for Hong Kong universities are based on academic grades and students’ choice only, prior experience in a related area is not considered (except for a small percentage of mature students). Professional experiences early-on in the curriculum will, therefore, help students relate to their future career. Early introduction of clinical skills has been endorsed by many curriculum reforms in medical and allied health education; the traditional curriculum of basic sciences first without a clinical context is no longer considered an appropriate
model. Students in medical training in the United States and Hong Kong also support early exposure to clinical situations (Mann, 1994; Lam et al., 2002).

A limitation with the interpretation of these results is that they are based on first year students’ retrospective feedback collected immediately following the community-based experiences. The year 1 students have had a limited perspective of the clinical environment. Focus group interviews with upper level students (second and third year) provided additional insight into the community learning experiences. Recommendations from upper year students emphasized the need for more clinical interactions with a variety of clients to progress to the level of professional interaction required in clinical placements within the hospital. Most students felt the community-based learning experiences were a good introduction to professional interaction skills and the community setting, particularly for those students with limited prior interaction with older adults. Upper year students, however, felt the level of interaction required during the community-based learning experiences was different than that required in the hospital setting. More experiential learning activities with increasingly complex clients were recommended to help prepare students for their clinical placements.

Another limitation to the interpretation of these results is that they are based on students’ feedback, actual performance in professional interaction was not measured. This preliminary positive data provided support for further study to measure professional interaction skills more objectively, using videotape, for example.

The clients and the community centre involved with the community learning activities reported benefits. Clients reported physical, emotional and social benefits from the exercise class and enjoyment in interaction with the students. The Aberdeen Kai-fong Welfare Association Social Service Centre reported the interviews conducted by the students during the Social Visits helped them collect information on a large number of home-bound older adults within their jurisdiction. Service-learning has been coined the term for educational activities which also provide a community service (e.g. Siefer, 1999). These types of activities appear to be a ‘win-win’ situation, providing students with rich, complex learning activities as well as providing a needed service to
the community. Ensuring the appropriate learning objectives along with providing a service can, however, be a difficult task. Developing university-community linkages and mutually beneficial programmes is an important future direction for the entire curriculum, not just the first year students.

Faculty members involved with the community learning experiences supported the value of interaction with prospective clients in a community setting over interaction with peers in the university laboratory. The need to integrate the community-based experiences with university-based learning was emphasized.

Recommendations

The decision to create and implement community-based learning activities within a physiotherapy curriculum can be a difficult choice for many educators. In view of the feedback provided by students, educators and clients presented in this chapter, and from my own experience throughout the process, some recommendations are provided. It is not my intent to provide detailed guidelines or a checklist to adhere to, as each learning curriculum will have its own needs and objectives. Although the exact procedures for the community learning experiences presented in this thesis may not be reproducible in another environment, certain aspects are transferable. Recommendations are divided into three areas: setting-up, implementing and evaluating the community learning experiences.

Setting-up the Community Learning Experiences

When deciding on the development of community learning experiences the following must be considered:

- Educational needs of the students. Many of the Hong Kong physiotherapy lacked prior exposure to older adults and to the health care environment. The educational needs of students with limited prior experience differs from more experienced students. Determining specific needs and assessing baseline criteria are important aspects.
Experience of the teaching faculty. Seeking mentorship from experienced faculty, making contacts with faculty in other departments or institutions who have developed community-based learning experiences to assist beginning or junior faculty.

Commitment and support of community partners is essential. For example, in organizing the Exercise Partners with Older Adults, the community centre were dedicated to enhancing the exercise/activity levels of their members. The centre advertised/promoted the classes, organized the participants into classes, kept an attendance record, telephoned the participants on the morning of the class so they wouldn’t forget, and collected a small fee (used to buy drinks) to help ensure participants were committed to attending the sessions.

Start slowly, identifying a learning experience that is doable within the specific environment, then build upon successful experiences.

Know the clients. Before starting the Exercise Partners with Older Adults learning experience, we conducted a physical performance assessment of the participants using standardised measures [e.g. Berg Balance Scale, Timed-up and Go test, grip strength]. This provided essential information to design an appropriate exercise programme for the older adult participants.

Implementing the Community Learning Experiences

When implementing community-based learning experiences the following is important:

- Students are able to engage in direct, one-to-one experience with prospective clients. As our goal was to improve students’ professional interaction experience with older adults, direct interaction with an older adult was considered essential.

- The community setting is a rich learning environment and a potential future work-place. As the Hong Kong curriculum provided minimal experiences in the community setting, it was important that the learning experiences were implemented in the community.
Early-on in the curriculum. Contrary to traditional curriculum approaches, early exposure to the community and to prospective clients was important.

Progressive experiences. The community learning experiences should be progressed throughout the curriculum, focusing on learning needs of the students.

Reflection and integration of the community experiences into the curriculum. To allow students to fully understand their complex learning experience, students need to reflect upon their experiences and the experiences should be linked within appropriate subjects and assessments.

Faculty as a role model. Using experienced faculty in the community setting allows students to observe professional interaction with community leaders and clients. Faculty must demonstrate a caring and committed approach towards the needs of the community participants.

University-community collaboration. Developing a strong bond between the community organization and the university is important for future collaborative projects.

**Evaluating**

Evaluation of the learning experiences is imperative to understand students’ learning needs, the effectiveness of the learning experience and the impact on the community participants.

Evaluation should include feedback from all participants: students, faculty, participants and community organizers.

Evaluation should be specific to students’ and community needs.

**Criticisms and Challenges**

Students’ main criticisms of the community-based learning experiences related to the timing of the learning experiences and the number of hours in the classroom. Community learning activities should not be considered an ‘additional’ activity to be added to a student’s packed schedule. Faculty need to
integrate essential curricular content into the learning experiences and students need to be aware of this.

- Faculty need to be prepared to commit the time and effort required to develop new linkages and maintain existing collaborations with community partners.
- Faculty and students need to be prepared to work in a less controlled environment than the university laboratory. They need to be flexible and adaptable to the situations that present themselves.
- The individual developing the learning experiences should have prior experience in the community setting. For example, a physiotherapist with prior clinical and/or teaching experience in the community is most appropriate as it is the physiotherapist instructor that is providing the service to the clients.
- Some faculty members suggested using inexperienced teaching assistants to conduct community learning activities. In my experience this would not be recommended as the community is an unpredictable environment. In addition, developing linkages between the university and community partners is considered more appropriate for a faculty member as opposed to a junior teaching assistant.

**Chapter Summary**

In Section 1 of this chapter, an increase in students' self-efficacy to interact with older adults in a professional manner following each of the community-based learning experiences was demonstrated. Most students rated the quality of the community learning experiences as good or above and all but a few students recommended continuing the learning experiences. In Section 2, how the community-based learning experiences were beneficial was examined through qualitative analysis of students' voluntary written comments focus group interviews. An overall theme of direct experience with older adults was identified which contributed to all the major themes. The major themes included: improvement of professional interaction skills, increased confidence to interact with older adults (primarily through mastery experiences), increased awareness of the needs of older adults, improved attitudes towards older
adults, enhanced theory practice link and relevance to future career. Criticisms of the learning experiences related to not enough time with the clients, small venue size, and timing of the community experiences in relation to other exams and assignments. Student recommendations included more community learning experiences with increasing complexity and clinical applications to prepare for clinical placements in the hospital setting. In Section 3 of this chapter, feedback from the clients and educators supported the continuation of the learning experiences. Most of the older adults who participated in the exercise class reported they benefited from the exercises and enjoyed the interaction with the students. Educators valued students' direct experience with potential clients over practice with peers in the university setting. Implications and limitations are discussed. Recommendations for setting-up, implementing and evaluating community-based learning experiences are provided. The positive outcomes of the learning experience leads to Cycle 4 of this project – the characterization of self-efficacy to interact with older adults in a professional manner – presented in the following chapter (Chapter 8).
Chapter 8

Cycle 4: Characterisation of Self-Efficacy to Interact in a Professional Manner with Older Adults

Introduction

In the previous chapter (Chapter 7 - Cycle 3: Outcomes of Community Learning Experiences with Older Adults) an increase in students' self-efficacy to interact in a professional manner with older adults was found following the community-based learning experiences. Self-efficacy is, however, a multidimensional construct, specific to the domain of functioning. Within each domain there are two aspects of self-efficacy measurement to consider. Firstly, a range of activities, capabilities and situations can influence the difficulty of the task. For example, driving a car on winding, icy roads with poor visibility is more challenging than driving on a straight, dry road with good visibility. A number of factors can influence one’s efficacy in driving, including road conditions, amount of traffic, unknown route, to name a few.

Secondly, a high level of efficacy in sub-components of the skill does not necessarily ensure high self-efficacy on the entire skill (Bandura, 1997). An individual’s level of efficacy in driving also depends upon the complex interaction of the various factors within the domain, thus efficacy scores for individual component skills do not equate to a complex skill situation. For example, feeling confident in each of the basic skills of driving, such as turning on the ignition, parking, reversing, checking the rear-view mirror, is different from putting all the basic skills together to drive in a variety of conditions and situations. In other words, the whole task is greater than the sum of its parts.

Similarly, effective professional interaction, as discussed in Chapter 2, is a multifaceted skill which includes verbal (and non-verbal), manual and movement communication skills. Confidence in ones’ professional interaction skills may also vary according to the type of client, the demands on one’s time, the level of one’s prior knowledge and experience, or other factors.
How one builds self-efficacy or the sources of self-efficacy, have been identified by Bandura (see Chapter 2) as the following: (1) mastery experience; (2) vicarious observation; (3) verbal persuasion; (4) physiological state (e.g. feeling anxious). Understanding how students develop self-efficacy in professional interaction with older adults is useful to the design and development of appropriate learning experiences.

The purpose of this chapter is to gain an understanding of the nature and structure of self-efficacy from the students’ perspective, within the domain of professional interaction with older adults. The characterisation of self-efficacy is examined under two main areas:

I. The multidimensionality of self-efficacy within the domain of professional interaction with older adults

II. Sources of self-efficacy: How the students perceive they build their self-efficacy in this domain or influences on development of self-efficacy

To determine the multifaceted structure of self-efficacy in the domain of professional interaction with older adults, two main methods of analysis were used: (1) exploratory factor analysis of three different questionnaires (Appendices 2, 4, 10) and (2) qualitative analysis of student comments during focus group interviews. Both the exploratory factor analysis and the analysis of students’ comments contributed to the characterisation of self-efficacy in the domain of professional interaction with older adults through the identification of factors or themes within in this domain. Factor analysis of the different questionnaire data sets was conducted using the Statistical Package for Social Sciences (SPSS) to perform a principal components factor analysis with varimax rotation. The Keiser-Meyer-Olkin (KMO) test was performed to measure the sampling adequacy and degree of correlation between the questionnaire items with a value above 0.60 considered acceptable (Ntoumanis, 2001). Factor loadings above 0.30 or 0.40 are generally considered acceptable (Portney and Watkins, 1993, Ntoumanis, 2001; Munro, 1997) and 0.40 was used in this analysis.

Qualitative data analysis was conducted using two methods: a grounded-theory approach and a ‘framework’ approach (Howe, 2000). A grounded theory approach, similar to that used in Chapter 7 to identify themes for the community-based learning
experiences, was used to identify themes of self-efficacy within the domain of professional interaction with older adults. Questions used in the focus group interviews included: “What difficulties or challenges do you encounter (face) in the clinical setting when interacting with older people” (year 1 and 2 students); “Has your confidence to interact with older people in a professional manner changed over the past 3 years? If yes, how?” [Please describe with examples.] (year 3 students). (See Appendix 7b for focus group questions). All focus group interviews were transcribed fully by myself, then coded for themes relating to the characterisation of self-efficacy in this domain. In this approach the themes emerged from the data without a pre-set framework.

The second approach, as the name implies, started with a framework. For this analysis, Bandura’s sources of self-efficacy (mastery experience, vicarious observation, verbal persuasion and physiological state; see Chapter 2) were used as a framework to categorize students’ comments regarding building self-efficacy.

I. Multidimensionality of Self-efficacy to Interact with Older Adults in a Professional Manner

Professional Interaction Across the Lifespan

The initial stage in investigating the multidimensionality of self-efficacy was to examine the early questionnaire data that were available. The first exploratory factor analysis was conducted using responses from the Professional Interaction Across the Life-span questionnaire (Appendix 2) which was completed by students following their clinical placements (cohorts 1 and 2; n=261). This questionnaire assessed students’ self-efficacy in professional interaction with a variety of individuals (clients and professionals) who the student physiotherapist may encounter during a clinical placement. Students rated their level of confidence from 0 to 10 (0=no confidence and 10=completely confident) for each item. At this stage of analysis, I was most interested in clients (infants to older adults), thus chose the following items to analyse:

- classmates
- infants
- children under the age of 6 years
- children with physical disabilities
- children with mental disabilities, parents of children
- parents of children receiving treatment
- adults with physical disabilities
- adults with mental disabilities
- older adults (over the age of 60 years).

The item 'classmates' was chosen as a baseline comparison, with the assumption that students would report highest confidence scores within this group. Using these items, it was hypothesized that age (e.g. infant/children, adults and older adults) and with or without a disability (e.g. 'normal' and with disability) would be factors within the domain of professional interaction.

A principal components factor analysis (varimax rotation) was conducted with data from first and second year students [cohorts 1 and 2 (n=261)]. The analysis confirmed age (child versus adult) as a distinct factor in professional interaction (factor loading >0.40), older adults, however, did not appear to be separate from adults (see Table 8.1). With or without a disability was also not acknowledged as a factor. From this analysis, therefore, students identified infants/children as distinct from adults. Students did not, however, appear to discriminate among adults of different ages, adults or children with disabilities, or parents of children receiving treatment.
Table 8.1: Factor Analysis Component Matrix: Lifespan Questionnaire (loading >0.400)

<table>
<thead>
<tr>
<th></th>
<th>Factor Loading 1</th>
<th>Factor Loading 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Variance: 54.9%</td>
<td>% of Variance: 14.4%</td>
</tr>
<tr>
<td>Classmate</td>
<td>.685</td>
<td>.685</td>
</tr>
<tr>
<td>Infant</td>
<td>.871</td>
<td>.685</td>
</tr>
<tr>
<td>Child (&lt; 6 years)</td>
<td>.825</td>
<td>.685</td>
</tr>
<tr>
<td>Child with physical disability</td>
<td>.789</td>
<td>.685</td>
</tr>
<tr>
<td>Child with mental disability</td>
<td>.859</td>
<td>.685</td>
</tr>
<tr>
<td>Parent of a child being treated</td>
<td>.397</td>
<td>.685</td>
</tr>
<tr>
<td>Adult with physical disability</td>
<td>.834</td>
<td>.685</td>
</tr>
<tr>
<td>Adult with mental disability</td>
<td>.425</td>
<td>.685</td>
</tr>
<tr>
<td>Older adults</td>
<td>.833</td>
<td>.685</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser normalization. KMO = 0.83.

Although, a differentiation between interaction with adults and older adults was not found in this preliminary factor analysis, comments from third year students during focus group interviews indicated that many students found interacting and gaining rapport with older adults more difficult than with younger adults. For example, some students expressed that older adults may have more difficulties in following instructions and comprehending health education.

... I think the young and the elderly is similar, but the elderly, I think have some difficulty following your instructions and may not understand the importance of the treatment. (coh1yr3focusgroup#5)

More difficult to interview elderly because the elderly do not have such knowledge of health, for example if you ask a question about heart disease, they do not know that, they just know they are taking some drug but they do not know what disease they have, so it is more difficult to interview the elderly. (coh1yr2focusgroup#2)

Students also commented they were not able to use some English words, as is common when communicating with peers or younger adults.

...Maybe the communication or I don’t know, the wordings they don’t understand. We like to add some English in our sentence that’s the characteristic of Hong Kong. So we need to change channel. (coh1yr3focusgroup#4)
Finally, students felt that older clients may view the younger student therapist as too young and inexperienced to be their health educator.

Yes, let me talk about the elderly first. We still have the difference in age range, how do you say age gap, generation gap, we still have this. They may think that "oh you are too young to teach me something". They may be angry about that, "why I am here and you teach me something to do". (c0h1yr3focusgroup#4)

This factor analysis, therefore revealed a distinction between adults and children, however, with or without a disability or a distinction with older adults did not emerge. Student comments reflected that professional interaction was more difficult with older adults. Considering the few number of items on the questionnaire, perhaps it was not surprising that multiple factors did not emerge. Further exploration was required to identify the multi-dimensionality of self-efficacy in professional interaction with older adults.

**Professional Interaction with Older Adults**

The second factor analysis was performed using the Professional Interaction with Older Adults questionnaire (Appendix 4) also used in Chapter 7. This questionnaire was developed by the teaching team with the assumption that there were two main areas within professional interaction with older adults, which would influence students’ level of confidence. The two main areas were: age (60-74 and over 75 years) and type of disability (cognitive, physical or emotional).

Factor analysis of first year students’ responses to this questionnaire (cohorts 2 and 3: n=269) revealed, however, only one factor (see Table 8.2). The analysis did not support ‘age’ and ‘type of disability’ as distinct factors within the domain of professional interaction with older adults, as originally assumed. This result suggests that this questionnaire may not have been adequately measuring the multi-dimensionality of self-efficacy to interact with older adults. The item reliability (internal consistency) for this questionnaire was high (0.95) indicating a high correlation between items, which supports the finding of only one factor in this analysis. Possible reasons for this finding are discussed.
Table 8.2 Factor Analysis Component Matrix: Type of Older Adult Questionnaire (Cohort 2 & 3, n=269)

<table>
<thead>
<tr>
<th>Type of Older Adult Questionnaire</th>
<th>Factor Loading 1</th>
<th>% Variance: 74.4%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older Adults 60-74 years</td>
<td>.801</td>
<td></td>
</tr>
<tr>
<td>Older Adults 60-74 with Physical Disability</td>
<td>.853</td>
<td></td>
</tr>
<tr>
<td>Older Adults 60-74 with Cognitive Problems</td>
<td>.888</td>
<td></td>
</tr>
<tr>
<td>Older Adults 60-74 with Emotional Problems</td>
<td>.855</td>
<td></td>
</tr>
<tr>
<td>Older Adults 75 years and older</td>
<td>.834</td>
<td></td>
</tr>
<tr>
<td>Older Adults over 75 years with Physical Disability</td>
<td>.882</td>
<td></td>
</tr>
<tr>
<td>Older Adults over 75 years with Cognitive Problems</td>
<td>.909</td>
<td></td>
</tr>
<tr>
<td>Older Adults over 75 years with Emotional Problems</td>
<td>.872</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis. Only one factor was extracted, the solution could not be rotated. KMO = 0.82

One possible explanation for finding only one factor, was that beginning level students were not aware of the difficulties or differences in interacting with clients who have cognitive or emotional problems. Support for this explanation was found in students' reported limited prior exposure to older adults (see Chapter 6). If students have never interacted with an individual who has memory problems or someone who is crying or depressed, they would encounter difficulties in rating their self-efficacy (Bandura, 1997). Likewise, the broad descriptors of ‘cognitive problems’ or ‘emotional problems’ may not have been specific enough for the students to envision professional interaction. In addition, first and second year students may have had limited understanding of professional interaction in physiotherapy.

A second artefact that may have influenced the finding of only one factor was the wording of the questionnaire (see Appendix 4 for the questionnaire). As stated above, the item description may not have been specific enough for students. In addition, questions 1 and 5 asked the students to rate their confidence to interact with older adults 60-74 years and older adults 75 years and over. Although it was assumed, these question items did not specify ‘healthy’ older adults within these age groups. Students, therefore, may not have distinguished these two items from the other questions, which specified older adults with physical, cognitive or emotional problems.
Thirdly, the results of this factor analysis may indicate that the questionnaire did not address the multi-dimensionality of self-efficacy from the students' perspective. The questionnaire, developed by the teaching team, was based upon preliminary student feedback and professional judgement. The questionnaire, however, may not have adequately reflected the multi-dimensionality of self-efficacy in professional interaction. Eight questionnaire items may be too few to effectively represent a multi-dimensional domain. Additional situations that influence students' levels of self-efficacy in professional interaction with older adults, therefore, needed to be explored.

The results of this factor analysis were viewed as an experimental artefact, not a genuine indicator of the multi-dimensionality nature of self-efficacy within professional interaction with older adults. A combination of students' lack of prior experience, wording of the questionnaire items and a questionnaire with limited items and dimensions may have all contributed to the finding of only one factor. To gain a better understanding into the multi-dimensionality of self-efficacy to interact professionally with older adults, focus group interviews with students were conducted.

**Multidimensionality of Self-efficacy to Interaction with Older Adults in a Professional Manner: Focus Groups Interviews**

To investigate the multi-dimensionality of professional interaction with older adults, focus group interviews were conducted with first, second and third year students. Focus group interviews (n=11) conducted with the first and second year students (cohorts 1 and 2) provided an understanding of the difficulties beginning level students face in the clinical setting when interacting with older adults (see Appendix 7a for focus group questions). When cohort 1 reached their final year of the physiotherapy programme, a second series of focus group interviews were conducted with the theme as the characterization of self-efficacy (n=6 groups) (see Appendix 7b for questions). Focus group interviews were continued until the information gained was repetitive (saturation).
Analysis of the focus group interview data using a grounded-theory approach, verified the multidimensionality of the domain ‘interaction with older adults in a professional manner’. Four main themes were identified: (1) the type of older adult client, [e.g. clinical problem (cognitive, emotional problems, hearing loss), language, attitude of client (cooperative or uncooperative)]; (2) the purpose of the professional interaction and the level of the students’ knowledge (e.g. gathering information, providing client education, motivating the client, implementing a treatment); (3) the type of professional interaction (e.g. verbal, manual, movement), and (4) the situational / environmental influences (e.g. clinical educator, family or other health care professionals observing the interaction; different clinical settings) (See Table 8.3). The four themes are interactive with each other as depicted by the two-way arrows in Table 8.3.
Table 8.3: Characterisation of Self-Efficacy to Interact in a Professional Manner with Older Adults: Multidimensionality

<table>
<thead>
<tr>
<th>Type of Older Client</th>
<th>Purpose of Professional Interaction and Level of Student's Knowledge</th>
<th>Type of Professional Interaction</th>
<th>Situation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitude / Personality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uncooperative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refuses treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client knows more than the student</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Problems</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional problems, e.g. depression, wants to die</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive problems, e.g. poor memory and comprehension</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearing loss</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dysarthria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Ill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client has a lot of pain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortness of breath</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many contraindications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unconscious</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client speaks a language the student does not understand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Professional Interaction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Client is unknown to the student</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance of prior knowledge and skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PT Assessment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gathering Information efficiently, e.g. Client talks a lot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PT Assessment Techniques, e.g. Pain scale, manual muscle testing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holistic Assessment, e.g. understand the whole client</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To listen and show concern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Implementing a treatment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance of communication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providing education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivate client</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Verbal</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Translating English terminology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using appropriate language</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Manual</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combine manual and verbal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual guidance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Movement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combining verbal, manual and movement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Educator watching</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family members watching</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New clinical setting</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
(1) Type of Older Client

Students reported that the type of older client they interacted with influenced their level of confidence. Students appeared to have the most difficulty managing a client who refused their treatment. Comments relating to the type of client included: the attitude of the client (client knows more than the student and uncooperative client), the type of clinical problem (cognitive, emotional, hearing loss, dysarthria, complex problems, in pain, shortness of breath), and the client speaks a different language from the student. Comments provided are typical examples contributed by students.

Attitude of the Client

Clients Who Refuse Treatment

Overall, students reported they felt the greatest loss in confidence when a client refused treatment or was uncooperative, especially if the client appeared angry or irritated with the student.

For example I have a patient who is very unpredictable because when I approach the patient the first time, I have not talked to him or anything, but he just very, very hate me, I don’t know why, maybe he is COAD patient, he hate everybody. When I approach him and try to ask him some questions then he already reject me and also refuse my treatment. At that time I feel very uncomfortable and sad and ask why. And this experience make me decrease some confidence to interact with the elderlies. (coh1yr2focusgroup#6)

Just sometimes maybe all of us want to help the patient solve their problems, but they may refuse our treatment and also say something bad to us. It really makes us feel unhappy. (coh1yr3focusgroup#2)

Students also reported that interacting with clients who were not agreeable with their treatment approach was difficult to manage.

He always insists in what he thinks is right, so for example I teach him how to use one crutch to walk the stairs. Normally it should be placed on the good side. No matter how I explain to him, he says it’s wrong and it not work, so I let him try both sides himself and actually it was obvious that his method was not good because he lean on one side very obviously, but he still think that his idea is right. So finally I still let him try his own way. So sometimes I think it is quite difficult to persuade him to believe. He’s still using his own way because I talk with the CE and she think that he increase to do that, so let him do so. (coh1yr2focusgroup#6)

Students expressed they learned, in some situations, that showing more concern and understanding towards clients who were angry or uncooperative, may improve their professional interaction.

Once a patient refused my treatment and just scold at me. I didn’t know how to handle this situation and my clinical educator teach me to explain to the patient and
show a more warm attitude towards the patient and I think it really works. In this clinical block I tried to adopt this attitude the patient feels that I am not only there to assess them, but to understand them and to help them. (coh1yr2focusgroup#3)

**Client More Knowledgeable**

Students also reported that interaction with clients who have substantial knowledge and previous health care experience concerning their condition were difficult to interact with professionally. Students felt that the client may be more knowledgeable, and found it difficult to develop a professional rapport with the client. Students recognized the need to provide justification to the client regarding their treatment approach.

The most difficult is to treat those patients with prolonged disease such as COAD [chronic obstructive airways disease]. Those patients know many techniques, even know more than us, they have many experience. So when I come to those patients, they don’t trust us, because they think we are students, we don’t have much experience, they have their own steps of techniques. I think this is the most difficult. (coh1yr2focusgroup#6)

For me communication with the patient is going along quite well, but I have encountered a problem, not in this placement, but in a previous placement, when I treat a patient with chronic illness, COAD, and he has learned a lot of techniques before. And when I approach him, he was questioning that my skill can help him. He was very stubborn. Actually the skill is OK, but I have to encourage him to do it in front of me, but this is a problem ... The patient will think that “oh, I know that, I have practiced this for many years, more than you”. So it’s very difficult, but when I persuade him for more and more days, the patient starts to follow my commands, is just have to correct and check the sputum. So if I treat such a kind of patient I will use more firm wording and to give the reasons why you do that, it’s very important not to do the treatment only, if you give the reasons to the patient, the patient can understand why you do that, and then will be more cooperative. (coh1yr3focusgroup#5)

**Clinical Problems**

Students discussed clients with a variety of clinical problems with whom they found interacting more difficult, for example, clients with cognitive problems (dementia), hearing problems and or were unconscious.

Some patients we may not be able to communicate well with the patients in the hospital... Some of them are unconscious, some of them are dementia, some may have ear problems and cannot hear well. (coh1yr3focusgroup)

**Cognitive Problems**

Students commented that interacting with clients who have cognitive problems were the most challenging type of clients. Students with previous experience and high efficacy levels in professional interaction with older adults, commented on the differences in communicating with a client who had cognitive problems (e.g.
dementia) compared to other older adults. Clients with cognitive problems may be confused, exhibit difficulties in comprehension, or present with memory problems, all of which can impact on the students’ ability to conduct an assessment.

Initially I also think that I have the confidence to interact with the elderly. I have a grandmother who lives with me. Sometimes she has a hearing problem, I have to speak very loud, but I can still communicate with her, so I think I can communicate with the elderly. When I’m now in the clinical placement and they are quite ill and they just want to receive the treatment and not the assessment. Maybe some of them are having dementia, and it is quite different from my grandmother. They don’t want to me to assess them, they just want to receive the treatment. (coh1yr2focusgroup#3)

Students noted that in an in-patient setting, clients who may have multiple problems including cognitive difficulties and Alzheimer’s disease were more difficult than older adults in an outpatient setting or those with physical problems.

I think I would divide the confidence into two parts, one is the outpatient and one is inpatients. I would think that the older adult that comes to the outpatients is more smart and understandable, so I am quite confident in communicating with them and can treat them. But in the inpatient, the older adult in the hospital may have multiple problems and may have some cognitive problems which I have met in the acute hospital. I met once, but I can’t communicate well, so this decreased my confidence. (coh1yr3focusgroup#6)

...Sometimes you don’t know how to communicate with the elderly with Alzheimer’s or some kind of pathology, but for the physical disability I think it’s more or less the same as the adult. (coh1yr2focusgroup#3)

Emotional Problems
Students noted they did not know how to approach or interact with a client who has emotional difficulties (e.g. is depressed, is crying).

Sometimes during this clinical placement I find that I need to communicate with someone who is depressed. In the beginning I just didn’t know how to communicate with him, so I just try to talking and maybe he will be more happy. Later realize this if I need to know what the problem is, I really need to ask him, but I don’t know at what moment is better for me to ask him, because I don’t want to make him cry. (coh1yr2focusgroup#2)

My patient have some ‘negative mind’. The first time I come across him he was very depressed and did not want to do any movement because of pain. He said “I cannot move any of my lower limb because of pain”. And he don’t want us to assess him. But later I said we need to do the assessment and treatment for him and he allowed us to do. But at a later time during the objective examination when I move his limbs, he cannot, because he had some surgery in the spine and so after the surgery he cannot move his limbs. When I asked him to move his limbs he cannot move them, but I continue to ask him “can you contract that”, maybe he feel that he cannot move, so he cry out a few times. Because before the operation he could move them, but after the operation he can’t. ... At the time I was very surprised of that because I have not faced this situation before, so I was shocked and didn’t do anything. When he cried I just ask
him to rest for awhile and not do anything and after he rest he was more calm and I
continue the assessment. (coh1 yr2 focusgroup#4)

Clients with emotional or cognitive problems may not show interest in the
physiotherapy treatment or may not be able to follow the students’ instructions; the
student then found it difficult to teach therapeutic exercises and provide education.

Actually I feel some confidence to communicate with the elderly, but one of the things
I feel so difficult is if the patient’s psychological aspect is not quite stable enough,
maybe their mood is not quite stable, so at that time when I want to teach exercise or
give some advice, maybe the patient ignore or neglect my idea, at that time I just stand
in the middle point, maybe I don’t know how to do it, so maybe the viewpoint is when
the patient is not quite stable emotion, and when I teach her to perform exercise or give
advise I feel a little bit difficulties. (coh1 yr2 focusgroup#5)

**Loss of Hearing**

Clients with communication disorders such as loss of hearing or dysarthria were also
difficult to interact with as students had difficulty helping the client to understand
their instructions. Students recognized the need to use different types of
communication such as touch, demonstration and movement.

My confidence is increasing, but there was a drop in the inpatient ward. I had to
interact with a patient who was deaf and not matter how I want to say I can’t and I use
more touch. I would like to express my sympathy to her by doing something good for
her, maybe she wants to take a cup, I take it for her, if she is cold I will pull the
blankets for her, these kind of actions tell her that I really show my concern for her.
Initially she refused my treatment because she didn’t know what I wanted to do,
because she cannot hear. I move the limb passively, she don’t know what I am doing,
but after some treatment she really feels that she is improving, so my actions, my
treatment are beneficial to her, and she can understand me more by my treatment. So
I think so actions are a kind of communication. (coh1 yr3 focusgroup#6)

Similarly, students who had prior experience with healthy grandparents expressed
difficulty interacting with clients who were deaf. Students also had difficulty
understanding the clients’ speech.

For me, I think that I didn’t have problem in communicating with the elderly, because I
can communicate well with my grandmother and grandfather, but during the placement
I really find some problem because my grandfather/grandmother can listen to me easily
but the elderly patient in the clinic have some reasoning problem, they can’t hear what I
have said, I need to say it very loudly to them and also I find that somehow I can’t
understand what the elderly said. (coh2 yr1 focusgroup#4)

This student commented that older adults with a speech disorder (dysarthria) were
challenging to communicate with, therefore, they used more closed-ended questioning
and movement communication.
I have encountered a problem that the patient has dysarthria. So when I approach this patient I will use closed-ended instead of open-ended questions. Also I found that in the 3 years, the open-end question is really difficult for the patients to answer. It’s more easier for the young patient, but for the elderly the closed end question is better to extract more information. And some body language may be useful to express the movement for the patient to do the exercise. (coh1yr3focusgroup#5)

**Clients in Distress (very ill, in pain, short of breath)**

Beginning level students reported difficulties interacting with clients who were very ill as they were concerned they may make the client’s condition worse.

Yes, because as I was year one, I was very afraid to interact with patients who are very ill because I’m afraid I will make them more ill…. (coh1yr3focusgroup#2)

Interacting with clients in pain or with shortness of breath was also difficult for students, as clients may be reluctant to move. Students must re-assure clients, developing a trust between the client and student-therapist.

I think that the most difficulty for me is my patient with a total hip replacement. Because she know that we are students so she always afraid that we may make her dislocate her hip joint so sometimes she fear to move and she afraid that we may hurt her. So I think the most difficult for me is to make the patient trust us…. (coh2yr1focusgroup#1)

In the chest ward the patient will be suffering SOB (shortness of breath), very short of breath, but you are the profession, you have to walk (the client). If you don’t have the confidence and you are afraid of making the patient more short of breath, you haven’t told the patient it is good for them, they will refuse the treatment. But if you have the confidence they will rely on you, trust you. (coh1yr3focusgroup#2)

**Complex Clients**

Not surprisingly, students found interacting with clients with complex problems including many treatment contra-indications or precautions and memory problems, difficult to interact with in a professional manner.

They have many contraindications and precautions and also if the patient has poor memorizing ability and then not too compliant, I think it is quite difficult to handle such kind of patients. (coh1yr3focusgroup#4)

**Language**

Clients who speak a language that the student does not understand, such as other Chinese dialects, were reported to be difficult to interact with professionally. Students found gathering and interpreting information during their assessment difficult when they could not understand the clients’ language.

I think that sometimes the language is a problem. If the patient is not speaking Cantonese or English I will have big trouble. For example we have a patient in this
centre and he speaks in Hakka, some kind of Chinese language, so we don't understand what he says, but they always understand what we say. So we can ask a question, but we don't get what he means. I think this is a difficult situation.

Students reported the importance of using demonstration and movement strategies, to communicate with clients who speak a different language, although difficulties were still encountered.

I think my confidence to interact with elderly has been increasing throughout these three years except I have an experience to interact with an elderly that speaks a different language, not English or Cantonese or Mandarin, but a different dialect. So I couldn't communicate very well. So I tried to use more body language, more demonstration to express my instruction to her. Although it was not so successful, it helps a little bit.

(2) Purpose of Professional Interaction and Level of Students' Knowledge

Student comments in this dimension included tasks related to professional interaction such as gathering relevant information and understanding the whole client; providing treatment; providing education to client or family members; and motivating the client. Also included in this dimension was the students' level of knowledge, e.g. the student has not previously learned the client's condition.

Professional Interaction

Client Unknown

Students commented that professional interaction with older adults was different from social interaction.

If I am voluntary to communicate with elderly, I have the confidence, but if you are PT and professional, I think the role is different, so I don't have confidence level.

Students' level of knowledge and skills

They also emphasized the importance of prior knowledge or level of skills to be confident in professional interaction.

I don't have much confidence to interact with the elderly because I don't know much about the skills so it is difficult to gain their trust. Maybe due to lack of knowledge it is difficult to communicate.

So I mean that I don't afraid to communicate with them, but if my skills are not good or my interview skills are not good, I will be afraid.
Physiotherapy Assessment

Gathering Information

Many students, particularly those experiencing their first clinical placement reported that interviewing clients who talked a lot was difficult for them to extract the important information and to complete their task efficiently.

They usually speak a lot of things, a long story to me and so as to make me to have an inefficient examination – time limitation is the problem. I must be patient to listen to them and to have some skill to communicate with them to finish our task on time. (coh2yr1focusgroup#2)

Before I started this course I was quite confident to communicate with the elderly because I have experience with my grandmother. But when I actually need to teach the elderly and especially when there is some specific information I want, it is difficult, because as mentioned they always talk a lot, a lot, but most of them I don’t want to know. When they talk I feel quite difficult to stop them because it seems they want someone to listen to them, but sometimes it is quite difficult with a time limit. (coh1yr2focusgroup#6)

This female student noted the difficulty in guiding the interaction, particularly with an older male client.

I think that my communication with elderly is not very good…. The most difficult is to communicate with those that talk so much. Sometimes I don’t know how to stop them, especially the men. Sometimes they do not concentrate on the treatment, but they talk all the time. (coh1yr2focusgroup#6)

Physiotherapy Assessment Techniques

Students reported difficulty in implementing specific physiotherapy assessment tools such as a pain scale or manual muscle testing. To use a pain scale, clients are asked to rate their level of pain on a scale from 0 to 10 (0=no pain and 10=maximum pain). The older client may have difficulty understanding the task.

Sometimes the old people may like to exaggerate, because if they think they have mild pain, they will think that the treatment may not be so intense, so they will not feel better, so sometimes I think they will exaggerate their pain. Maybe on the scale of 10 they will tell you 8, but when we do the objective examination we can’t find anything. (coh2yr1focusgroup#2)

Manual muscle testing is a method of grading maximum strength for specific muscle groups (grades 0-5). The grading is based upon the amount of movement produced at a specific joint in a position where the muscle group contracts against increasing resistance (gravity eliminated, against gravity and against gravity with manual resistance from the assessor). Implementing this test requires that the client fully understand the task or the grading of the muscle strength will not be accurate. The
following student’s comment revealed that her grading of muscle strength was quite low in the lower limbs, therefore, she proceeded very cautiously with standing and walking exercises as the client may not have adequate strength in the lower limbs. What she noted, however, was that the client stood up and walked quite easily, indicating her muscle strength assessment was not accurate.

... and another case, a lot of this, you do some MMT (manual muscle testing) for the elderly people and maybe they will not understand you’re instruction and the strength is very poor – it is only grade 3 or 2, so we try to walk him we are very cautious, we take care, but when he stand up, he pick up the frame and go easily down the road. (coh2yr1focusgroup#4)

**Holistic Assessment**

Many third year students commented on the importance of seeing the client as a whole person, to fully understand their needs and develop an appropriate treatment plan.

I think that during the three years training and as a year three student I can treat the patient in a holistic manner. For example if the patient has OA knee, in year one I may just focus on treating the knee pain, but in year three when I knew that he has some financial problems I may refer to medical social workers to seek for any financial allowance. (coh1yr3focusgroup#5)

Third year students commented that when assessing a client as a first year student, they were most concerned about the client’s specific injury and were less aware of gaining an understanding of the needs of the whole client.

... At the beginning maybe I will just really concentrate on some simple problem of the elderly and try to find out and check some exercise and try hard to instruct them to do more or not to do more. But up till now, like M., it’s expanded to some quality of life. For example, if the patient still can’t follow some instruction or she/he still find some pain, I will try to find out why he can’t do so or any other factor like her feeling or some home environment that hinders her from doing home exercises. And maybe during some instruction I will try to comfort her and just try to know more about her to let me better interact with her. (coh1yr3focusgroup#6)

I have similar opinion as O., because for example when I was in year one or year two, I just concentrated on the affected regions. I didn’t think about other joints that may have some affect on the affected joints. And also if the patient is very stressful it will affect the patient how to present his or her problem or affect his pain scale, for example. So I think that if I know more about the patient, for example, his work nature, what daily activities he needs to do, I will know the patient’s whole picture very clearly, I will know how to tackle this problem if I can do so. (coh1yr3focusgroup#6)

Third year students also reflected that as first year students, they felt professional interaction was primarily telling the client what they know, keeping a distance
between themselves and the client. With experience, however, they have recognized that professional interaction extends beyond this to understanding the client.

At the beginning of the study I think professional behaviour was to tell the patient what I know and then try to help them to increase their health. Now I think that I have to look further, not only the health, but also the quality of life. Before I only look at the body, but now I have to look further, about how the patient can go into the daily living, this is more professional. (coh1yr3focusgroup#6)

Actually when I was in year one, I would think that the physiotherapist are the so called professional, we should have a distance between the professional and the patients, for example we cannot laugh in front of the patient, because we are so called professional interaction. But now I would thinlc that in order to communicate or more understand the patient, we should actually be like a friend instead of having a superior position in front of the patient. (coh1yr3focusgroup#4)

Third year students commented on the importance of taking more time to talk with the client and listen to the client, which they had not been aware of in first year.

In year 1 professional interaction is just telling the patient what to do. But now I think I need to listen to the patient and to interact with them and take care more about their feeling... (coh1yr3focusgroup#2)

In year one, I think that being a professional I think that patients should do what I ask them to do. Now I think maybe I am much more confident, somehow we need to understand our patient more before we ask them to do a task. Sometime we need to spend some more time to talk with them, not only ask them about things concerning their illness but also their feelings, for example some patients may have depression problem and we can talk more with them about other things, for example did you have your breakfast or lunch. Besides I think the tone of the talk is important, for example some elderly women you talk soft and sometimes they like you to treat them as a child. (coh1yr3focusgroup#2)

Some first year students also recognized the importance of listening.

... Listening is also another and you have to find out the problems, that way you listen to them, they will listen. If the patient or the client feel that you don’t know their problems they won’t listen to you. That’s I think the key to communication. (coh2yr1focusgroup#4)

**Implementing a Treatment**

*Effective Communication*

Third year students recognized the importance of communication for effective treatment.

... I think that in these three years we know more about communication and more effective communication is a main factor to treat our patients. (coh1yr3focusgroup#3)
Similar to cited in the literature (Winefield and Chur-Hansen, 2000; Davis, 1998; Guccione and DeMont, 1987), students recognized that their professional interaction influenced the client's compliance with a treatment (e.g. home exercises).

... Because the way we communicate with the patient affect our treatment to her because their compliance with our treatment really depends upon how we can show our status and show our image to them.... (coh1yr3focusgroup#4)

Providing Education
Many students reported that providing the client or family with education was challenging, depending upon the students' prior experience and level of knowledge. Reflecting back on year one, students noted that they may have been confident in social interaction, but did not have the knowledge to feel confident in professional interaction.

I think I am quite confident as many of my friends know I would like to talk very much and some of friends have mentioned that my tone of speaking is quite confident, so I'm quite confident and I have a good relationship with my grandmother and her friends and other elderly people, so I am quite confident in this area. However, if you mention about the pathology or clinical knowledge at that time I would be very terrified to answer any questions because I would be afraid that my answer would be wrong. (coh1yr2focusgroup#4)

Students found it difficult to know what to ask the client, and how to answer questions they did not have the knowledge to answer.

I think the communication skills is not a problem. The main problem is the knowledge. Sometimes it is difficult to explain to them what to do to and sometimes I don't know what to ask in front of the patient and sometimes they ask me some questions and this is difficult for me to explain to them what is the cause of the pain, and something like that, I think this is the main problem. (coh1yr2focusgroup#6)

Providing the client and family with an explanation of the treatment rationale and procedures was also difficult for students.

Some patients have a family member to visit during the treatment, because I am not only treating the patient, but I have to explain what I am doing and what are the benefits for the patient and I think it is quite difficult to deal with even now as a year 3 student. (coh1yr3focusgroup#4)

Motivating the Older Client
Students reported that they found some older clients were reluctant to perform their exercises and required effective professional interaction skills to motivate them.

... I would say to get their motivation is also one important thing when you treat them. When the patient doesn't cooperate with you, you can't do anything and also I think old people is somehow, I don't know why, but they are quite reluctant to move. They
didn't see how improvement they can make, so we need to push them, or explain to
them and use our skills and techniques and tactics to motivate our patients, especially
the elderly ones. (coh2yr1focusgroup#1)

... sometimes we need to have the treatment by another means. For example, if the
patient really refuse the walking or refuse the transfer, if we only tell them we want
them to do this, do this, do this, they may refuse to do so. But if we tell them in
another way, or if you can walk from here to there, so you can leave here (PT gym) to
go back to the ward, they will have more motivation to walk instead of you just tell
them to walk from here to there and to have the treatment they maybe refused to do so.
(coh1yr3focusgroup#3)

(3) Type of Professional Interaction (verbal, manual and movement)
As discussed in Chapter 2 (professional and theoretical foundations), professional
interaction in physiotherapy includes three main aspects: verbal and non-verbal
communication; manual communication and communication through movement.
Using these aspects as a guideline, students’ comments were assessed.

Verbal
First year students, in particular, expressed difficulty in ‘translating’ English
terminology learned in the university into Cantonese that the older client would
understand. The following dialogue between first year students reflects the
difficulties these first year students had in translating physiotherapy-specific
terminology into simple Cantonese.

Student 1: I think we have to adapt to that because we learn in English but we
communicate in Cantonese. It’s different. It’s not very easy for us to do it in the
first few weeks in clinical.
Student 2: Exactly, it’s hard to say “hip joint”, I just can’t find a way to say it.
Student 3: People have many ways to describe their pain, shooting pain, lightening
pain.
Student 4: Yes, it’s totally different.
Student 5: We find it difficult to record the different types of pain and sometimes we
throw English to them, speak English to them.
Interviewer: Do they understand?
Student 5: No
Student 1: Especially the elderly. (coh2yr1focusgroup#4)

Other first year students confirmed this difficulty in translating English terminology
into simple Cantonese:
I think we have to adapt to them because we learn in English but we communicate in Cantonese. It’s different. It’s not very easy for us to do in the first few weeks in clinical. (coh2yr1focusgroup#1)

Usually I don’t find it hard to communicate with people, but not in a physiotherapist way, usually in a casual way is not a problem for me. The hard thing for PT communication is the jargon. It’s not very easy to translate all the jargon to casual way for the client, e.g. you can’t tell the patient to do ‘prone lying and do hip extension’, it’s not proper. (coh2yr1focusgroup#1)

Students commented on the difference in communication with their classmate during practical classes at the university where their partner easily understood all the commands, compared with older adults in the clinical setting who did not understand their terminology.

But I think one difficulty is that it is very difficult to translate the jargon to explain to them why this action, why do this, why do that, but, it’s very different from communicating with just the classmate, just say one jargon word and they can know that, but I need to further explain to my patient, especially the elderly, so I find the most difficulty is this. (coh2yr1focusgroup#1)

First year students commented that to communicate with older adults, they simplified their vocabulary and learned to listen to the older client.

Sometimes you have to speak louder and you have to be more using some words that are easier to understand and sometimes they want you to listen to them, so now I spend more time to listen to them as well as to talk in an easier and clearer way. (coh2yr1focusgroup#1)

Using Manual Skills and Movement to Communicate
Few students initially expressed the importance of manual skills and movement for communication, however, when questioned during the focus group discussion, third year students commented on the use of demonstration and manual guidance when interacting with older clients.

As cited in Jenson, et al (2000) students also recognized the need to combine movement with verbal communication.

During the placement when we do assessment or treatment we have to do a lot of manual therapy, we have some body contact with our patient, and I don’t think we can just act like a stranger so we do have to get some communication skills, so we try to learn. (coh1yr2focusgroup#5)

Actually the communication combine the verbal and the manual guidance is the usual way to communicate with the patient. Usually help the patient understand. (coh1yr3focusgroup#5)
Students appeared to value the use of manual guidance and demonstration to teach older clients how to perform specific movements and exercises.

I think for the elderly and for children, more manual guidance would be quite important rather than just demonstration to them because they are not so understand very well, when you just demonstrate to them some kind of activity. (cohlyr3focusgroup#3)

... Just about the elderly, demonstration is not very effective because their learning ability is not very good. Manual guidance may be a more appropriate communication when handling the elderly. I think from our clinical experience we can gain what is the most appropriate method....

The importance of combining verbal, manual and demonstration communication skills is illustrated from the following student’s comment. Of note as well, is the lack of practice in this area resulting in a lower level of confidence to combine verbal with manual and movement communication skills.

Can use some manual guidance. For example, for some elderly, if you ask them to straighten their back, they usually try to extend their head, rather than their back, you need to give some force over their back to help them extend, to let the patient know what is the movement to straighten their back. And also sometimes when the patient is walking you need use your hand to give them encouragement (hand on the shoulder) to walk because sometimes only verbal is not enough. They will not know what is your instruction, what they are suppose to do, because also, in Hong Kong hospital here, there are many Mainland China people who speak a different language and we need to encounter patients like this and sometimes it’s very difficult. We need to use like C. says demonstration and manual guidance. You know for walking, if we want them to extend more around the hip we need to put our hands and give some tactile sensation and then push, so they know what do you want. It’s something we have to prepare ourself, at this point even we are year 3 this kind is not very good, I have not practiced too much, I will say I am not very confident in this area, I need a lot of improvement. Usually our manual assistance may not be too affected, because the hand holds and that sort of thing we can hardly learn from the patient. We need more consultation, to know more which part of the patient is more sensitive to our manual contact. Sometimes even we watch other staff doing our treatment, we cannot learn too much, because it is the tactile sensation. (cohlyr3focusgroup#5)

Students also used manual and movement communication skills to develop a trusting and friendly relationship with clients.

Or some kind of patients that cannot express by verbally you can have communication with them through body language, for example if they do very well you just do the thumbs up ‘good’, they will know that. And also the patient will learn how to communicate with us, even if the patient cannot talk very well, they also can use this kind of language to express their feeling. And also the body contact, I think can help us to communicate with the patient. Just like the case I mentioned. I like to hold her hands and talk with her because this can make our relationship more friendly and more close and patient can trust us more and our relationship is much better. (cohlyr3focusgroup#4)
Situation

Students discussed situations such as their clinical educator (CE) watching them interact with a client, a new clinical setting, and time away from clinical as situations that lowered their confidence in professional interaction.

Observation by Others

Clinical Educator Watching

Students reported that they felt nervous when the clinical educator (CE) was watching their interaction with clients as they felt the CE would be assessing their performance.

I think my communication with them [elderly clients] is quite good. In front of the CE all my performance will be down grade immediately. Because maybe I have some confidence deficiency when I’m having some pressure and my voice will become like that, it will just bring down, and all the things seems to be unprofessional and that will make the CE comment that you seem not to know everything.... (coh1yr2focusgroup#6)

To be honest it’s our grade, sometimes we will be over sensitive, thinking the CE is assessing me and being assessed is not a good feeling. If the CE is not here, I do not have such good pressure. Even if I know my hand techniques are not that good, but if the patient complains of pain, I can modify. But when the CE is watching me, even if I modify they know that the patient has already complained of pain, that means you have make some harm to the patient so the CE may discuss with you later. Actually it’s a kind of pressure that lowers our confidence. (coh1yr2focusgroup#5)

Previously, yes. When CE is watching, I feel nervous or maybe he’s just watching, but makes the atmosphere different... Because they are giving marks to us. They may downgrade us. (coh1yr3focusgroup#2)

Students expressed that their clients may also feel uneasy if a clinical educator or university lecturer was observing the student-client interaction.

I think another situation is that when the patient knows that someone is watching us another strangers looking at the examination, patients may also feel a bit uneasy. Patients, may feel uneasy, that my make our treatment more difficult. (coh1yr3focusgroup#2)

New Clinical Setting

Starting a new clinical in a new setting also reduced students’ level of confidence.

I think the confidence is just going up and down because of different settings. We need time to get familiar with the setting. For example with inpatients we need to take time to get more familiar with the bed notes, some abbreviations, but in outpatients we need not to do so - mainly dependent upon the subjective examination from the patient. In inpatient, we depend very much on the bed notes, b/c some patients we may not be able to communicate well with the patients in the hospital. (coh1yr3focusgroup#3)
Similarly, being away from the clinical setting for a while reduced their confidence in professional interaction.

Should be steady rise. But after the clinical placement and you haven’t touched the patient for a period of time, then the confidence will go down. Just like before this placement we have a long time rest, just go to school. So during this period when I first come to this placement, the first few days, the confidence level is not that high, but after a few days, when I accommodate and my confidence will go back up. (coh1yr3focusgroup#3)

Summary of Qualitative Analysis

In summary, qualitative analysis of focus group interviews with physiotherapy students resulted in the identification of themes that relate to self-efficacy in professional interaction with older adults (Table 8.3). The four main themes were: (1) Type of Older Client; (2) Purpose of Professional Interaction and Students’ Level of Knowledge; (3) Type of Professional Interaction and (4) Situation. Based this analysis, self-efficacy of professional interaction with older adults is a multidimensional domain. Dimensions identified in this analysis e.g. Purpose of Professional Interaction, Type of Professional Interaction and Situation were not addressed in the early questionnaires as demonstrated in the factor analyses presented at the beginning of this chapter (see Appendices 2 and 4 for questionnaires). Further validation and analysis of the dimensions of self-efficacy of professional interaction with older adults follows in the next section.

Multidimensionality of Self-efficacy to Interact Professionally with Older Adults: Factor Analysis using a New Questionnaire

Based upon students’ comments during the focus group interviews, a new, pilot questionnaire was drafted to measure self-efficacy to interact professionally with older adults. This questionnaire contained 54 items (see Appendix 10 for the questionnaire). The format of the questionnaire followed Bandura’s recommendations using the lead-in sentence: “How certain are you, that through professional interaction with an older client, you CAN ...” (Bandura, 2001). The response scale for each item was 0-10 scale (0=cannot do, 5=moderately certain can do and 10=certain can do). This new questionnaire was distributed to 125 first year physiotherapy students (cohort 4).

Questionnaire items 12, 20, 31 and 53 on this new questionnaire (see Appendix 10) had ten or more students who did not provide a response, thus were eliminated from
the analysis, leaving 50 items for the factor analysis. Statistical Package for Social Sciences (SPSS) was used to perform a principal components factor analysis with varimax rotation (factor loading >0.400). Seven factors were identified (Table 8.4), however, factors 6 and 7 contained only 3 items, thus identifying the construct and naming the factor was difficult for these two factors. Each item in factors 6 and 7 (Table 8.4) was also related to other factors, thus these items were added to the factor with the second highest factor loading for each item. For example, item #40 (adapt communication style to client) had factor loading of .62 in Factor 7 and .49 in Factor 1, therefore, this item was added to Factor 1 (Table 8.5). Items written in italics in Table 8.5 are the six items from Factors 6 and 7 that were moved to the factor with the second highest loading. The total variance explained for Factors 1 to 5 was 68.1%, indicating theses factors address the majority of variance within this domain.
Table 8.4: Factor Analysis Component Matrix – New Long Questionnaire

<table>
<thead>
<tr>
<th>Factors</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
<td>% Variation</td>
<td>49.3%</td>
<td>6.68%</td>
<td>5.15%</td>
<td>4.40%</td>
<td>2.66%</td>
<td>2.56%</td>
<td>2.28%</td>
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<td>36 Gestures/eyes to create trust</td>
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<td>32 create relaxed environment</td>
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<td>29 show that you care</td>
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<td></td>
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<td>28 develop trust of client</td>
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<tr>
<td>41 use demonstration to educate</td>
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<tr>
<td>42 help client feel happy</td>
<td>.711</td>
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</tr>
<tr>
<td>37 use tone of voice to develop trust</td>
<td>.704</td>
<td></td>
<td></td>
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<td>.416</td>
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<td>38 communicate about client’s feelings</td>
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<tr>
<td>35 listen attentively</td>
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<td>26 use touch to show support/concern</td>
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<tr>
<td>43 help client to open-up</td>
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<td>.438</td>
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<td>27 comfort client who is crying</td>
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<td>18 teach simple exercise</td>
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<td>.507</td>
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<td>05 get to know a client</td>
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<td>.486</td>
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<td>44 combine verbal and movement</td>
<td>.502</td>
<td>.408</td>
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<tr>
<td>10 gain info from uncooperative client</td>
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<td>14 gain info from deaf client</td>
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<td>11 gain info from client who talks alot</td>
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<td>09 gain info from client who wants to die</td>
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<td>13 gain info from depressed client</td>
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<tr>
<td>08 gain info from client in pain</td>
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<td>.440</td>
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<td>15 gain info — speaks different language</td>
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<td>25 educate client who knows more</td>
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<td>23 educate client thinks you’re too young</td>
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<tr>
<td>24 teach to client who has poor memory</td>
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<tr>
<td>46 cooperative client, CE watching</td>
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<td>47 uncooperative client, CE watching</td>
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<td>48 complex problems, CE watching</td>
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<td>49 cooperative client, family watching</td>
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<td>52 a lot of precautions &amp; contraindications</td>
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<td>54 client unconscious</td>
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<td>51 client has a condition you don’t know</td>
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<td>.534</td>
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<td>03 identify problems — quality of life</td>
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<td>04 identify problems — work</td>
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<td>01 identify problems — musculoskeletal</td>
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<td>07 identify problems — functional</td>
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<td>.623</td>
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<td>06 identify client’s anxiety</td>
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<td>22 client asks for treatment for another</td>
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<td>17 expression clear, concise</td>
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<td>.611</td>
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<td>19 explain assessment findings</td>
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<td>.576</td>
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<td>16 language client understands</td>
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<tr>
<td>21 explain client’s condition to family</td>
<td>.510</td>
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<td>39 client finds treatment painful</td>
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<td>45 you don’t know answers to questions</td>
<td>.433</td>
<td>.538</td>
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<td>40 adapt communication style to client</td>
<td>.438</td>
<td>.518</td>
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<tr>
<td>30 show you care to client who refused Rx</td>
<td>.454</td>
<td>.620</td>
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<tr>
<td>33 motivate unwilling client to exercise</td>
<td>.510</td>
<td>.550</td>
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<tr>
<td>34 client is uncooperative</td>
<td>.328</td>
<td>.409</td>
<td>.442</td>
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</tbody>
</table>

Table 8.5 Factor Loadings on Five Factors Related to Students' Self-efficacy to Interact Professionally with Older Adults

<table>
<thead>
<tr>
<th>Factor 1: Purpose of Professional Interaction % Variation: 49%</th>
<th>Factor 2: Type of Professional Interaction % Variation: 6.7%</th>
<th>Factor 3: Situation % Variation: 5.16%</th>
<th>Factor 4: Purpose of Professional Interaction % Variation: 4.4%</th>
<th>Factor 5: Type of Professional Interaction % Variation: 2.7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestures/eyes to create trust (.79)</td>
<td>gain info. from cooperative client, CE watching (.73)</td>
<td>identify problems – quality of life (.86)</td>
<td>client asks for treatment for another (.62)</td>
<td></td>
</tr>
<tr>
<td>create relaxed environment (.79)</td>
<td>gain info. from uncooperative client (.75)</td>
<td>identify problems – work (.82)</td>
<td>expression clear, concise (.61)</td>
<td></td>
</tr>
<tr>
<td>show that you care (.76)</td>
<td>gain info. from uncooperative client, family watching (.70)</td>
<td>identify problems – social/financial (.77)</td>
<td>explain assessment findings (.58)</td>
<td></td>
</tr>
<tr>
<td>develop trust of client (.75)</td>
<td>gain info. from client who wants to die (.66)</td>
<td>identify problems – musculoskeletal (.71)</td>
<td>language client understands (.54)</td>
<td></td>
</tr>
<tr>
<td>use demonstration to educate (.73)</td>
<td>gain info. from depressed client (.66)</td>
<td>identify problems – functional (.62)</td>
<td>explain client's condition to family (.51)</td>
<td></td>
</tr>
<tr>
<td>help client feel happy (.71)</td>
<td>gain info. from client in pain (.65)</td>
<td>identify client’s anxiety (.53)</td>
<td>teach simple exercise (.51)</td>
<td></td>
</tr>
<tr>
<td>use tone of voice to develop trust (.71)</td>
<td>gain info. – client unconscious (.55)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>communicate about client’s feelings (.70)</td>
<td>educate client who knows more (.56)</td>
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</tr>
<tr>
<td>listen attentively (.70)</td>
<td>educate client who thinks you’re too young (.55)</td>
<td>don’t know answers to questions (.43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>use touch to show concern (.68)</td>
<td>teach client who has poor memory (.52)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>help client to open-up (.63)</td>
<td>client is uncooperative (.33)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>comfort client who is crying (.62)</td>
<td>client has a condition you don’t know (.51)</td>
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<td></td>
</tr>
<tr>
<td>get to know a client (.56)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>combine verbal and movement (.50)</td>
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</tr>
<tr>
<td>adapt communication style to client (.49)</td>
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<tr>
<td>show you care to client who refused treatment (.45)</td>
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<td></td>
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<tr>
<td>motivate unwilling client to exercise (.51)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>client finds treatment painful (.34)</td>
<td></td>
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</tr>
</tbody>
</table>
**Naming the Factors**

As noted by Portney and Watkins (1993), naming the factors according to a common theme or construct is a subjective and difficult endeavour. The items and factor loadings listed in Table 8.4, were compared with the themes of multidimensionality of self-efficacy in professional interaction identified from the analysis of focus group discussions (Table 8.3). From this comparison, Factors 1 to 5 (Table 8.4) supported the dimensions identified from the focus group interview data (Table 8.3). Factors 1 and 4 related to Purpose of Professional Interaction, Factor 2 corresponded with Type of Older Client, Factor 3 with Situation, and Factor 5 with Types of Professional Interaction (see Table 8.6 for comparison).

Overall, consistency was found between the qualitative analysis of focus group interviews and the quantitative factor analysis of the new questionnaire in the multi-dimensionality of self-efficacy within the domain of professional interaction with older adults. Both analyses, therefore, support the multidimensionality of self-efficacy to interact professionally with older adults. The four main dimensions in professional interaction with older adults are: (1) Purpose of Professional Interaction, (2) Type of Older Client, (3) Situation and (4) Type of Professional Interaction.

The weakest relationship between the theme and the factor analysis appeared with Type of Professional Interaction and Factor 5. Items on the questionnaire that could be included in the Type of Professional Interaction factor (verbal, manual and demonstration) were:

- use language appropriately to the level of understanding of the client
- express yourself in a clear, concise manner
- appropriately use touch to show concern for your client
- use gestures or eye contact to develop a trusting relationship
- use your tone of voice to develop a trusting relationship with your client
- use demonstration to educate your clients
- combine verbal and movement communication to interact with your client
- respond appropriately when your client asks you questions to which you don’t know the answer.
<table>
<thead>
<tr>
<th>Purpose of Professional Interaction</th>
<th>Type of Older Client</th>
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<tr>
<td>Professional Interaction</td>
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<tr>
<td>Qualitative Analysis</td>
<td>Factors 1 and 4</td>
</tr>
<tr>
<td>• Client is unknown to the student</td>
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</tr>
<tr>
<td>• Importance of prior knowledge and skills</td>
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<tr>
<td>• Create relaxed environment</td>
<td></td>
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<tr>
<td>• Develop trust of client</td>
<td></td>
</tr>
<tr>
<td>• Use touch to show support</td>
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<tr>
<td>• Gestures to create trust</td>
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<tr>
<td>• Adapt communication style to client</td>
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<tr>
<td>• Get to know a client</td>
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<tr>
<td>• Help client to open-up</td>
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<tr>
<td>• Listen attentively</td>
<td></td>
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<tr>
<td>• Show that you care</td>
<td></td>
</tr>
<tr>
<td>• Identify problems - quality of life</td>
<td></td>
</tr>
<tr>
<td>• Identify problems - work</td>
<td></td>
</tr>
<tr>
<td>• Identify problems - social/financial</td>
<td></td>
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<tr>
<td>• Identify problems - musculoskeletal</td>
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<tr>
<td>• Identify problems - functional</td>
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<tr>
<td>• Identify client's anxiety</td>
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<tr>
<td>• Help client feel happy</td>
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<tr>
<td>• Use tone of voice to develop trust</td>
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<tr>
<td>• Communicate about client's feelings</td>
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<tr>
<td>• Comfort client who is crying</td>
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<tr>
<td>• Client finds treatment painful</td>
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<tr>
<td>• Show you care to client who has refused treatment</td>
<td></td>
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<tr>
<td>• Teach simple exercises</td>
<td></td>
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<tr>
<td>• Use demonstration to educate</td>
<td></td>
</tr>
<tr>
<td>• Motivate unwilling client to exercise</td>
<td></td>
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<tr>
<td>• Combine verbal and movement</td>
<td></td>
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<tr>
<td>PT Assessment</td>
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</tr>
<tr>
<td>Gathering Information efficiently e.g. Client talks a lot</td>
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<tr>
<td>PT Assessment Techniques e.g. Pain scale, manual muscle testing</td>
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<tr>
<td>Holistic Assessment e.g. understand the whole client (Factor 4)</td>
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<td>To listen and show concern</td>
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<td>Implementing a treatment</td>
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<td>Importance of communication</td>
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<td>Providing education</td>
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<td>Knowledge level</td>
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<td>Motivate client</td>
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<tr>
<td>• Help client to pain open-up</td>
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<tr>
<td>• Listen attentively</td>
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<td>• Show that you care</td>
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<td>• Identify problems - quality of life</td>
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<td>• Identify problems - work</td>
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<td>• Identify client's anxiety</td>
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<td>• Help client feel happy</td>
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<td>• Use tone of voice to develop trust</td>
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<td>• Communicate about client's feelings</td>
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<td>• Comfort client who is crying</td>
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<td>• Client finds treatment painful</td>
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<td>• Show you care to client who has refused treatment</td>
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<td>• Teach simple exercises</td>
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<td>• Use demonstration to educate</td>
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<td>• Motivate unwilling client to exercise</td>
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<tr>
<td>• Combine verbal and movement</td>
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<td>Clinical Problems</td>
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<td>• Emotional problems, e.g. depression, wants to die</td>
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<td>• Cognitive problems e.g. poor memory and comprehension</td>
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<tr>
<td>• Hearing loss</td>
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<td>• Dysarthria</td>
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<td>• Very Ill</td>
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</tr>
<tr>
<td>• Client has a lot of pain</td>
<td></td>
</tr>
<tr>
<td>• Shortness of breath</td>
<td></td>
</tr>
<tr>
<td>• Many contraindications</td>
<td></td>
</tr>
<tr>
<td>• Unconscious</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>Client speaks a language the student does not understand</td>
<td></td>
</tr>
<tr>
<td>Attitude / Personality</td>
<td></td>
</tr>
<tr>
<td>• Uncooperative</td>
<td></td>
</tr>
<tr>
<td>• Refuses treatment</td>
<td></td>
</tr>
<tr>
<td>Client knows more than the student</td>
<td></td>
</tr>
<tr>
<td>Factor 2</td>
<td></td>
</tr>
<tr>
<td>• gain information from uncooperative client</td>
<td></td>
</tr>
<tr>
<td>• gain information from deaf client</td>
<td></td>
</tr>
<tr>
<td>• gain information from client who talks a lot</td>
<td></td>
</tr>
<tr>
<td>• gain information from client who wants to die</td>
<td></td>
</tr>
<tr>
<td>• gain information from depressed client</td>
<td></td>
</tr>
<tr>
<td>• gain information from client in pain</td>
<td></td>
</tr>
<tr>
<td>• teach client who has poor memory</td>
<td></td>
</tr>
<tr>
<td>• Client has a condition you don't know</td>
<td></td>
</tr>
<tr>
<td>• gain information – speaks different language</td>
<td></td>
</tr>
<tr>
<td>• client is uncooperative</td>
<td></td>
</tr>
<tr>
<td>• educate client who thinks you're too young</td>
<td></td>
</tr>
</tbody>
</table>
Table 8.6: Dimensions Identified from Focus Group Interviews and Factor Analysis (cont’d)

<table>
<thead>
<tr>
<th>Situation</th>
<th>Qualitative Analysis</th>
<th>Type of Professional Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 3</td>
<td>Factor 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Verbal</td>
</tr>
<tr>
<td>Clinical Educator watching</td>
<td>Cooperative client, CE watching</td>
<td>• Translating English terminology</td>
</tr>
<tr>
<td>Family members watching</td>
<td>Uncooperative client, CE watching</td>
<td>• Using appropriate language</td>
</tr>
<tr>
<td>New clinical setting</td>
<td>Complex problems, CE watching</td>
<td>Manual</td>
</tr>
<tr>
<td>Away from clinical setting</td>
<td>Uncooperative client, family watching</td>
<td>• Combine manual and verbal</td>
</tr>
<tr>
<td></td>
<td>Cooperative client, family watching</td>
<td>• Manual guidance</td>
</tr>
<tr>
<td></td>
<td>A lot of precautions</td>
<td>Movement</td>
</tr>
<tr>
<td></td>
<td>Client unconscious</td>
<td>• Demonstration</td>
</tr>
<tr>
<td></td>
<td>Don’t know answers to questions</td>
<td>• Combining verbal, manual and movement</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Of these, two items are found in Factor 5: appropriate language use and expression clear, concise, while other items are found in Factor 1. The lack of items in this factor (Type of Interaction) may have resulted because many of the items address two factors, e.g. use demonstration to educate client includes both the Type of Interaction (demonstration) and the Purpose of Interaction (education).

The lack of consistency between Factor 5 and Type of Professional Interaction may also be a reflection of students’ lack of experience in professional interaction. Students responding to this questionnaire were first year students, without prior clinical experience in physiotherapy, thus would have limited awareness of the various types of professional interaction especially manual and movement (see Chapter 2). Even more experienced students, however, during focus group interviews often required prompting from the interviewer to address issues related manual and movement communication. Jensen, et al (2000) reported that expert physiotherapists were able to communicate with their hands. Student therapists interviewed for this thesis may not have been fully aware of this important area of professional interaction.
The factor responsible for the most variance was Factor 1, Purpose of Professional Interaction. Purposes of professional interaction with older adults in physiotherapy include interactions related to physiotherapy assessment and treatment, such as gathering information, identifying relevant problems, motivating a client, developing trust with a client, showing that you care and providing education. This large factor appears to be multifaceted. Further testing with more experienced students or clinicians may more clearly define the facets within this factor.

As noted above, another difficulty encountered in naming the factors was that many of the items contained more than one factor or construct. For example, items in Factor 2 (Type of Older Client) also included the purpose of the professional interaction (e.g. gaining information or educating clients). It appears that this group of first year students scored these items based on the type of older client as opposed to the purpose of the professional interaction. Re-wording of these items and other items may help to separate the two constructs.

Finally of note in the naming of factors is the placement of language issues. In the qualitative analysis of focus group discussions, language of the client was placed within the domain: Type of Client. It was included in this theme, as the language a client speaks was considered to be a characteristic of that client. With the factor analysis, language has been placed with Factor 5: Type of Professional Interaction. Within this factor, use of verbal communication skills depends upon the language of the client, thus could fall within this factor, as well.

Results from the factor analysis should be viewed with caution, as the sample size may not be considered large enough. Munro (1997) recommended a ratio of 10 subjects per item, however, she noted that others consider lower ratios (2 to 3) as acceptable, or a sample size of 100 to 200 may also be acceptable. In this study (items = 50) an ideal number of subjects would be 500, however, 100-150 may also be considered acceptable. The sample used in this analysis was 124 students, which could be considered acceptable, however, a larger number may provide further information into the factors. In addition, this sample was all first year students without clinical experience, thus distribution to students in upper years or to clinicians would provide further valuable information.
Implications

Interestingly, when the mean values for each questionnaire item were calculated, twelve items (15, 54, 14, 1, 10, 51, 52, 48, 9, 47, 2, 25) had a mean score below 5.0, while six items (37, 18, 36, 29, 41, 35) had mean scores above 7.0 (Table 8.7). Items with the highest mean scores were found in Factor 1 (Purpose of Professional Interaction), while items with the lowest means are found in Factor 2 (Type of Older Client) and Factor 3 (Situation) (Table 8.7). Mean scores for each factor confirm that Factor 1 had the highest mean and Factor 2 had the lowest mean (Table 8.8).

This information is useful in designing educational experiences and indicates that beginning level students had the lowest efficacy in dealing with clients who are uncooperative/angry, have emotional problems (e.g. want to die), are unable to hear, or speak a different language. Likewise students showed lower efficacy in professional interaction when being watched by the clinical educator and when they have not learned about the client’s condition. Prior to their first clinical placement, students should be given strategies on how to deal with these types of situations.

The identification of the multidimensionality of self-efficacy in professional interaction has numerous implications. Firstly, the education of professional interaction is an important element throughout the curriculum and the design of educational experiences must also be multi-dimensional. The needs of beginning first year students, as noted above, may not be similar to the needs of final year students entering the workplace. Secondly, the need for valid and reliable instruments is necessary to accurately measure students’ self-efficacy throughout the educational programme. Thirdly, as noted in Choi et al (2001) with valid and reliable measurement tools, further understanding into the relationship between self-efficacy and performance can be achieved. These issues will be discussed further at the end of the chapter. The next phase in the characterization of self-efficacy in professional interaction with older adults was to identify the sources of building self-efficacy.
Table 8.7: Items with Highest and Lowest Mean Scores

<table>
<thead>
<tr>
<th>Items with Highest Mean Score (&gt;7.0) (Factor 1)</th>
<th>Items with Lowest Mean Score (&lt;5.0) (Factor 2)</th>
<th>Items with Lowest Mean Score (&lt;5.0) (Factor 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 Teach an older person to perform a simple exercise.</td>
<td>9 Gain relevant information from a client who wants to die.</td>
<td>47 Communicate effectively with an uncooperative client when your clinical educator is watching you.</td>
</tr>
<tr>
<td>29 Show that you care about your client.</td>
<td>10 Gain relevant information from a client who is uncooperative and angry.</td>
<td>48 Communicate effectively with a client who has complex problems and your clinical educator is watching you.</td>
</tr>
<tr>
<td>35 Listen attentively to your client.</td>
<td>14 Gain relevant information from a client who cannot hear you.</td>
<td>51 Communicate effectively with a client who has a condition you have not yet learned about.</td>
</tr>
<tr>
<td>36 Use gestures or eye contact to develop a trusting relationship with your client.</td>
<td>15 Gain relevant information from a client who does not understand you and speaks a language that you do not understand.</td>
<td>52 Communicate effectively with a client who has had surgery and there are a lot of precautions and contraindications associated with it.</td>
</tr>
<tr>
<td>37 Use your tone of voice to develop a trusting relationship with client.</td>
<td>25 Educate a client who thinks that s/he knows more than you do.</td>
<td>54 Communicate effectively with a client who is unconscious.</td>
</tr>
<tr>
<td>41 Use demonstration to educate your client.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8.8 Mean Scores for Each Factor

<table>
<thead>
<tr>
<th>Factor 1: Purpose of Professional Interaction</th>
<th>Factor 2: Type of Client</th>
<th>Factor 3: Type of Situation</th>
<th>Factor 4: Purpose of Professional Interaction</th>
<th>Factor 5: Type of Professional Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.6 (±1.9)</td>
<td>4.8 (±2.1)</td>
<td>5.0 (±2.0)</td>
<td>5.2 (±1.9)</td>
<td>6.2 (±1.9)</td>
</tr>
</tbody>
</table>

II. Sources of Self-efficacy to Interact with Older Adults in a Professional Manner

Self-efficacy beliefs are not a substitute for knowledge and skill, however, at any given skill level, individuals with higher self-efficacy tend to perform better than those with lower efficacy levels (Bandura, 1997). In this section, students’ comments relating to how they built their self-efficacy (sources of self-efficacy) are analysed using Bandura’s framework of sources of self-efficacy: (1) mastery
experience, (2) vicarious observation, (3) verbal persuasion, and (4) physiological state (e.g. feeling anxious) (see Chapter 2).

**Bandura’s Sources**

The following table (Table 8.9) summarizes students’ comments in relation to Bandura’s sources of self-efficacy: mastery experience, vicarious observation, verbal persuasion and physiological state. Students noted that mastery experiences were most helpful in building their efficacy in professional interaction. Students also used observation of more experienced clinicians to build their efficacy. Verbal feedback from clinical educators and clients could either build students’ efficacy or, if the feedback was negative, their level of confidence would be lowered. Lastly, students made limited comments that related to their physiological state. A few students made reference to the importance of staying calm and the negative influence of feeling nervous, but overall, this source was not described by students.

**Table 8.9 Sources of Self-efficacy in Professional Interaction with Older Adults**

<table>
<thead>
<tr>
<th>Mastery Experience</th>
<th>Vicarious Observation</th>
<th>Verbal persuasion</th>
<th>Physiological state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior knowledge and experience</td>
<td>Skilled professionals (clinical educator and others)</td>
<td>Feedback from clinical educator</td>
<td>Few student comments.</td>
</tr>
<tr>
<td>Direct mastery experience with clients</td>
<td>Observation of peers</td>
<td>Feedback from clients</td>
<td>Feeling nervous</td>
</tr>
<tr>
<td>Variety of clients</td>
<td></td>
<td>Feedback from visiting lecturer</td>
<td>Try to stay calm</td>
</tr>
<tr>
<td>Variety of settings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progressive, ongoing experiences</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Prior Knowledge and Experience

Not surprisingly, students felt more confident in professional interaction as their knowledge, skills and experience improved across the three years of the physiotherapy programme.

When you have already had experience in treating a similar case, you will have more confidence on it, so I think just increase your experience and our confidence will increase as well as the knowledge. I still agree that knowledge is very important. (coh1yr3focusgroup#4)

Students’ comments reflected their strong belief in the association of increasing confidence with growing knowledge within physiotherapy.

I think in the second (year), you gain more knowledge from PolyU. In first year they just learn some lower limb orthopaedic cases, maybe when they go to the placement they need to do some other things other than lower limbs, maybe they need to do some upper limbs, some exercise. When they go through year 2, semester 1 they may gain more knowledge, they will have more confidence and know how to do it better. (coh1yr3focusgroup#2)

Like other classmates, my confidence level is increasing in the past three years. It is related to accumulation of knowledge and the experience dealing with patients. (coh1yr3focusgroup#1)

Students commented that with limited knowledge they felt they were unable to answer the clients’ questions, which made it difficult to develop professional rapport with the client.

...If you don’t know the basic knowledge when the patient is asking you questions, you cannot immediately tell them. This is the problem that the patient will lose confidence in us if our knowledge is low. (coh1yr3focusgroup#5)

I think that confidence and knowledge are highly related. Because especially in year 1, if you know very little, you are afraid the patient will ask you something, Oh, why are you feeling pain here, and why I can’t do that also and most of the time you feel you can’t answer her because you don’t know the reason and you don’t want to say something wrong so you just say “oh, I’m not quite sure” and when you say this you feel that the patient will not trust on you so much. (coh1yr3focusgroup#6)

Third year students reflected that in their first placement they were low in confidence, uncertain how to approach and interact with a client, due to lack of knowledge and lack of experience in physiotherapy.

Because it is the first placement they will think that they don’t know anything about their clinical, so not confident in treating the patients in the next placement. Because in the first placement there is a lot they don’t know and they don’t know how to treat the patient, how to approach the patient. They lack in confidence. (coh1yr3focusgroup#2)
I think in year one, because our knowledge is very limited and also haven't see patients before, so in the first placement and see the first few patients just in the subjective examination you will feel very fear, you don't know what to talk to them, just ask the questions that the school has taught and in the O/E (objective examination) we will be more afraid, because we have to touch the patient, we are also afraid that we will hurt the patient and do something bad to the patient. Also the communication, we don't know how to communicate with them. After the accumulation of the knowledge and the experience we will be more confident because the knowledge on the pathology will be more comprehensive to know more about the pathology of the patient, and then with the experience we will not be so afraid to touch the patient. (coh1yr3focusgroup#3)

Direct Mastery Experience

Similar to students' written comments on the feedback questionnaires reported in Chapter 7, many students felt that direct experience with older adults was important to increase their self-efficacy in professional interaction.

In school the teacher told us what you need to do so, but we don't know how to do so. Through the experience we learn. (coh1yr3focusgroup#4)

I think that most of my knowledge builds up as I practice in the clinical environment. As I do the practice I will have more courage and the urge to build up my knowledge so I can understand what is really happening, that is the pushing force. (coh1yr3focusgroup#1)

As reported by Bandura (1997), students expressed that a positive or mastery experience was very effective in increasing their level of efficacy in professional interaction.

... I think it is true that when we face a number of nice patients and only one or two bad ones it doesn't really matter. (coh1yr3focusgroup#2)

For me what can increase my confidence is when I offer some treatment to the patient and I see that the patient is improving, then I see that my confidence can increase. But when my treatment cannot have any affect I will feel not very confident. (coh1yr3focusgroup#5)

Students noted that experience with a variety of clients was useful to improve their efficacy in professional interaction.

I think just the confidence is a steady progression, similar to my classmates. Experience is very important. When we have the experience on handling different kind or different age group of the patients, we know what kind of communication is more effective.... So handling more patients, we become more confident. (coh1yr3focusgroup#3)

...So if you have more experience on communicating with different patients, you will find that different patients will need different things, if you have more communication, then you will have more confidence because you can know that when you approach the
Observation of Others (vicarious)

In addition to direct experience, some students commented that observation of other more skilled professionals such as the clinical educator or other therapists helped to improve their efficacy.

...I think that volunteer work helped me a lot to communicate with the elderly, because by observation of the staff with what they did for the elderly I would know more professional knowledge and also how they deal with the elderly. I think this is very important for me to observe.... This increase my confidence on communicating or giving some treatment with the elderly. (cohlyr2group#4)

I think that more experience is the way to improve my confidence and also I try to observe the others (e.g. CE or other therapist) to see how they can perform the task easier or get the cooperation of the elderly. (cohlyr2focusgroup#3)

Students also reported that by observing their peers successfully interact with older adults helped them build their confidence. They also used peer observation as a gage, if they were at a similar level to their peers, their confidence levels would be increased.

When I was first enrolled in PT I thought I could communicate with the elderly quite successfully, but that is not true. I remember the first time when I communicated with the elderly during our first visit to an old age home and I found it very difficult to initiate talk. It is not because they are old, because they are a stranger to me. Even with those clients that are normal adult I find it difficult to initiate talk. But then I observe other classmates to talk with them very successful, like J., and I then I thought to myself to initiate talk, it's not as difficult as I think. So with more practice now I am quite confident to communicate with them. (cohlyr2focusgroup#5)

First I will find help from other classmates. Because when you face difficult situation the first mind you think that the CE (clinical educator) will blame on you if you do something harmful to the patient. But when you are not confident on treating this case, I will first ask the other classmate, is it really that we don’t know how to do or just I don’t know by myself. If I know that the case is not teach in the school and other classmates don’t know how to do it, I will feel more comfortable, because we really don’t know how to do it. I will tell the CE about this situation and ask him teaching me how to do it. If it’s just I don’t know and other classmates know how to do, I will first ask them how to manage the case, if I really don’t understand, I will look for other information for myself to learn more. (cohlyr3focusgroup#3)

Verbal Persuasion: Feedback from Others

Students discussed two main areas of feedback that influenced their performance: (1) feedback from their clinical educator and (2) feedback from the client.
I think the confidence level will be greatly affected by the feedback from the patient and also from the CE (clinical educator). And also if the CE has told you have done a good job in designing the treatment or treating this patient, the confidence level will also increase. (coh1yr3focusgroup#3)

First I will feel upset, but I will feel much better when other patients appreciate my help, it will make me feel more happy. (coh1yr3focusgroup#2)

Students discussed how positive feedback from the clinical educator would improve their confidence, while negative feedback would lower confidence.

The CE is very important. If you are very confident and you go in to do your treatment according to what you have learned at the university and the CE says “you don’t do that in here”. Then your confidence starts declining and you follow what the CE says. The next time you are more protective defensive and you lose confidence in what you’ve been taught. So the CE’s attitude and their expectation of you, their understanding and the way they understand students is very important. I’ve heard stories of CEs lecturing students or telling students off in front of patients for minor things. Or some CEs will take them back to the CE room and not scold them, but ask them why they did that and treat them as a professional and as an adult. That kind of attitude is very reassuring and is confidence building, not the other way around. I think besides students doing their homework, the CE has the responsibility to build the students confidence. (coh1yr2focusgroup#5)

... when the CE backs my treatment, then my confidence is increased. (coh1yr3focusgroup#5)

When we encounter problems, I think when we are searching for help, most probably look to the CE, but it really depends upon their attitude. Some may be really friendly and helpful, but when you encounter some clinical educators that are challenging you in a worse attitude, this lowers our confidence. (coh1yr3focusgroup#4)

Finally, students’ level of efficacy was also affected by negative feedback from visiting lecturers from the university, particularly if the lecturer discussed the issues in front of the client.

I have had the experience that one of the lecturers tell me what is wrong immediately, in front of the patient, then that decreases my confidence. (coh1yr3focusgroup#2)

**Physiological State**

According to Bandura (1997), an individual’s physical state (e.g. feeling anxious or calm) can influence the level of efficacy to perform an activity. Few students commented on this aspect:

Now I make myself more relaxed first…. (coh1yr3focusgroup#1)

Sometimes being supervised by the CE during our work, our treatment. If the CE is looking at us, I will say that the performance will be lower, being nervous, we’re afraid that something that we do will be wrong. The more we think we may do something wrong, the more mistakes we make. (coh1yr3focusgroup#5)
Summary: Building Self-efficacy

Students' comments, therefore, supported Bandura's sources of self-efficacy. Implications for the design of educational experiences include:

- The importance of mastery or successful direct experiences with a variety of clients.
- The important role experienced clinicians play in modelling professional interaction.
- Using peers to model behaviour. By seeing other students perform well, students believe they too can perform well.
- The powerful influence of the clinical educator on students' efficacy and performance. Students may need skills to deal with negative feedback from the clinical educator.
- Clients' feedback influenced students' efficacy. Equipping students with skills to deal with negative feedback from clients.
- Helping students feel less nervous and more relaxed in clinical settings.

Chapter Discussion

The importance of effective skills in professional interaction is accepted within the health care professions with outcomes such as enhancing clients' (1) motivation and compliance with treatment programmes, and (2) own belief in the recovery process and their ability to cope with their situation (Gyllensten et al, 2000; Winefield and Chur-Hansen, 2000; Davis, 1998). At any level of performance, improved self-efficacy has been linked with an improved performance (Bandura, 1997). Self-efficacy is not a general personality trait, but is a multi-dimensional construct specific to the domain of measurement.

The analysis in this chapter supports the multidimensionality of self-efficacy to interact professionally with older adults. Four main dimensions were identified in qualitative analysis then supported by factor analysis: (1) Purpose of Professional Interaction; (2) Type of Older Client; (3) Situation and (4) Type of Interaction.
students) reported the importance of listening to the client, to viewing the client as a whole individual and demonstrating concern. These were similar to the dimensions found in expert clinicians reported by Jensen, et al, (2000): (1) Multidimensional Knowledge Base; (2) Clinical Reasoning: Contextual Collaboration, (3) Virtues: Caring and Commitment (see Table 8.10). Students also recognized the importance of movement and touch for communication, however, this dimension (Type of Interaction) was least supported by the factor analysis, possibly because of students' lack of clinical experience or due to the wording of the questionnaire items. Students most commonly discussed using demonstration and manual feedback to communicate with clients who had communication problems (e.g. hearing problems). The integration of touch and verbal communication as implemented by expert physiotherapists (Jensen et al, 2000) may require further clinical experience to develop competently.

Students scored lowest on items from the Type of Older Client and Situation dimensions. It may be that beginning level students found these more 'concrete' items easier relate to (e.g. gaining relevant information for clients who are deaf, who are uncooperative/angry, who speak another language) than items in the Type of Interaction dimension. Similarly, items within the Situation dimension related to interacting with older clients while the clinical educator or family is watching.
Table 8.10: Dimensions of Expert Practice in Physiotherapy and Dimensions of Self-efficacy in Professional Interaction

<table>
<thead>
<tr>
<th>Jensen, et al, 2000</th>
<th>This Thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multidimensional Knowledge Base</strong></td>
<td><strong>Purpose of Interaction</strong></td>
</tr>
<tr>
<td><strong>Clinical Reasoning: Contextual Collaboration</strong></td>
<td><strong>Purpose of Interaction</strong></td>
</tr>
<tr>
<td><strong>Movement: A Central Focus and Skill</strong></td>
<td><strong>Type of Interaction</strong></td>
</tr>
<tr>
<td><strong>Virtues: Caring and Commitment</strong></td>
<td><strong>Purpose of Interaction</strong></td>
</tr>
</tbody>
</table>

**Curricular Recommendations**

Education of professional interaction requires a multi-dimensional and integrated approach throughout the physiotherapy process: (assessment, measurement, planning, treatment and education) as well as throughout the curriculum. Learning experiences need to be multi-dimensional within a year of study or subject area as well as integrated and progressed through the curriculum. An example of a multi-dimensional and integrated curriculum focusing on professional interaction is presented in Table 8.11 (Laidlow, et al, 2002).
Table 8.11 Integration of Communication Skills in a Physiotherapy Programme (an example)

<table>
<thead>
<tr>
<th>Programme Focus</th>
<th>Developing Core Clinical Skills</th>
<th>Subject areas*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Purpose of Interaction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type of Client</td>
<td></td>
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<tr>
<td></td>
<td>Situation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interaction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subject areas*</td>
<td></td>
</tr>
<tr>
<td><strong>Year 1</strong></td>
<td>Initiating a session</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Translating English terms</td>
<td></td>
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<tr>
<td></td>
<td>Role of a beginning student-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>therapist</td>
<td></td>
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<tr>
<td></td>
<td>How to refer clients:</td>
<td></td>
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<tr>
<td></td>
<td>What to do when a client</td>
<td></td>
</tr>
<tr>
<td></td>
<td>refuses treatment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Principles of Physio-</td>
<td></td>
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<td></td>
<td>therapy Practice</td>
<td></td>
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<tr>
<td></td>
<td>Professional Seminars</td>
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<td></td>
<td>Development of Motor</td>
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<td>Behaviour</td>
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<td></td>
<td>Musculo-Skeletal I</td>
<td></td>
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<tr>
<td></td>
<td>Expanding the Interaction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Process</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gathering information,</td>
<td></td>
</tr>
<tr>
<td></td>
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*Based on the curriculum of The Physiotherapy Programme, Department of Rehabilitation Sciences, The Hong Kong Polytechnic University
In the first semester of year one of the physiotherapy curriculum at The Hong Kong Polytechnic University, the education of professional interaction skills were addressed in the following subjects: Principles of Physiotherapy Practice; Professional Seminars and Development of Motor Behaviour. The community-based learning experiences with older adults described in this thesis were integrated into these subjects (see Chapter 4). One aspect that first year students reported as difficult in professional interaction with older adults was English-Chinese translation, particularly new physiotherapy terms (e.g. flexion, supine lying). During practical classes conducted in the university, students often use English terms while interacting with each other. In the clinic, however, Cantonese speaking older clients would not understand the English physiotherapy terms and students found these difficult to translate. It is recommended that clinical and university faculty, in collaboration, develop a glossary of common terms for students use. Concrete practice using these terms with older clients prior to clinical placement would be most beneficial.

In the second semester of first year, the main clinical subject was Physiotherapy Diagnosis and Management: Musculoskeletal Dysfunction I. In second year students studied Physiotherapy Diagnosis and Management in Cardiopulmonary, Musculoskeletal II and Neurology Dysfunctions. Each of these clinical areas presents clients with unique assessment and treatment needs, thus specialized communication skills are required as well. In the third year of the programme, student learning progressed to clients with multi-system dysfunction (of which older clients are common) and elective subjects including, Issues for the Aged Population. Increased exposure to manual and movement communication skills within each area is required.

Learning methods for the communication skills programme within a medical curriculum included:

- small group tutorials, didactic material, role-play, videotaping, standardized patients, feedback and practice using CCOG (Calgary-Cambridge Observation Guide) (a standardised framework for structuring a medical interview), and PBL cases. (Suzuki Laidlow et al, 2002, p.118)

Recommendations for learning methods based upon the findings in this thesis would highlight the use of experiential methods, which include direct interaction with clients and mastery experiences. Observational learning opportunities such as watching
experienced clinicians/faculty and peers interact with clients would also be recommended. The use of didactic material and role-play may be less effective based upon students’ comments of differences between working with their peers in a university environment compared with direct experience with clients. This requires further study to determine the learning outcomes of different teaching methods.

Similar to Suzuki Laidlow et al (2002) learning activities to enhance physiotherapy students’ self-efficacy in professional interaction would be best designed in collaboration with clinical educators. Clinical educators can also make use of mastery learning experiences and use positive feedback to enhance students’ self-efficacy.

**Generalizability of Results**

It is interesting to note that many of the situations described by students may be prevalent in the older adult population, but not necessarily be limited to older adults. Exceptions are issues related to the generation gap and to normal aging as discussed by MacKenzie (2000). Other situations, however, such as cognitive and emotional problems, uncooperative clients and language differences, could also present themselves in younger clients. Students likely associated these problems with older adults, as they are common issues with older clients in the hospital setting (e.g. Alzheimer’s disease, dementia, depression, deafness, dialects from Mainland China). The question, then, do older adults have distinct communication issues, or are the communication problems that arise more a result of other separate issues such as pathological processes and different cultures, is worthy of further study. Given the data presented by the Hong Kong students, the evidence tends to support both age-related and other issues which present challenges in professional interaction for physiotherapy students. The dimensions of professional interaction with older adults presented in this thesis may be generalizable to a larger adult population. This requires further testing.

The Hong Kong physiotherapy students’ concerns in communication were similar to third year medical students in the United Kingdom who reported difficulties in communication with patients who were in pain or demonstrated negative emotions (Hajek, Najberg and Cushing, 2000). In listening to the physiotherapy students during the focus group discussions, one of the most challenging/stressful situations
they encountered was interacting with a client who was unfriendly, angry and refused their treatment. Students seemed to take the client's refusal personally, concerned that they had done something wrong. The medical students, using the Student Concerns Questionnaire (16 items), rated their most serious concerns as (1) "The patient starts crying or becomes angry with me", (2) "The patient is in pain or emotional distress", (3) "Not understanding the patient", (4) "The patient tells me something important but wants to keep it confidential" and (5) "Not knowing the answer to patient's questions" (Hajek, Najberg and Cushing, 2000). The physiotherapy students did not discuss issues relating to confidentiality, however four of the top five concerns for medical students in the United Kingdom were also concerns for Hong Kong physiotherapy students. This suggests findings in this study may be useful for other health professionals in other cultures.

Hong Kong physiotherapy students, may, however, have additional cultural issues not experienced in Western cultures because of implicit communication rules. Hong Kong, although a mixture of Western and Chinese culture, is considered a collectivist culture (Fielding, 2001), especially older Chinese adults, many who may have emigrated from Mainland China. Within a collectivist culture, more attention is given to appropriate ways to communicate with each other and with figures of authority (Northouse and Northouse, 1998). To the older client and to the young physiotherapy student, a health care professional is a person of authority. A first year student, however, does not possess the knowledge or experience of the professional, therefore both the client and the student experience difficulties discussed previously in Chapter 7 such as role uncertainty, responsibility conflicts, power differences and unshared meanings. I believe these issues are present for many student therapists elsewhere in the world, especially during their beginning clinical placements. The Hong Kong students may feel these issues to a greater extent, however, due to cultural beliefs and expectations.

Validity of Results

The validation of qualitative research is difficult. As stated earlier in the Methods, focus group interviews were continued until 'saturation' was reached. In this case, once similar responses were received from the students, the focus groups were stopped. The process of saturation is the qualitative researchers method of
‘knowing’ or understanding a specific concept (Cutliffe and McKenna, 2002). It is possible that if all of the students were interviewed, additional themes would have been identified.

Triangulation of the data is another method of ensuring validity. In this chapter focus group data and factor analysis of a new questionnaire both support the four dimensions of professional interaction with older adults. This is a very strong finding for the validation of the identified dimensions of self-efficacy to interact with older adults in a professional manner. Collecting questionnaire data on more students, in all stages of the programmed (e.g. year 2 and 3) as well as data from experienced clinicians would provide additional valuable information on the self-efficacy construct and dimensions.

The wording of the questionnaire is one aspect that may have affected students’ scoring on the questionnaires. As noted earlier, some of the items in the new long questionnaire were measuring two dimensions e.g. type of client and purpose of interaction. Some of these items need to be re-phrased. The questionnaire should start with uni-dimensional items in each dimension, then progress to items that cross two dimensions, e.g. using touch to communicate with a complex client while the clinical educator is watching. Remembering that as Bandura reports, one’s self-efficacy to perform a specific task is greater than the sum of the individual parts.

**Future Directions**

In order to perform baseline assessments and re-assessments of students’ self-efficacy in professional interaction with older adults (or any client group), a standardized questionnaire is required. The information gained from first, second and third year physiotherapy students in this study provided a basis for the development of such a questionnaire. Further steps include: refining and reducing the number of items on the questionnaire, content validation and expert review, reliability assessment [although Bandura (1997) reports that high reliability may not be expected as efficacy scores can change] and assessing responsiveness or sensitivity to change.

Another important use for the self-efficacy questionnaire would be to examine the link between efficacy and performance in professional interaction. Self-efficacy is
believed to affect performance through choice of activity, level of persistence in the face of difficult situations and level of effort. How these relate to the Hong Kong physiotherapy students learning professional interaction skills is not known. Further exploration is required.

Chapter Summary
In the previous chapter (Chapter 7: Cycle 3) an increase in first year students’ self-efficacy to interact with older adults in a professional manner was found following the community-based learning experiences. The analysis in this chapter (chapter 8) confirmed that self-efficacy to interact in a professional manner with older adults is a multidimensional domain that requires a multidimensional assessment and a variety of educational experiences.

The first factor analysis of students’ self-efficacy to interact with classmates, children, adults and older adults confirmed age (child versus adult) as a distinct factor in professional interaction (cohorts 1 and 2; n=261). A second factor analysis on a questionnaire measuring self-efficacy to interact with older adults in different age groups (60-74 and over 75 years) and different types of disability identified only one factor. This is likely to have been an experimental artefact rather than a real finding. Further exploration into the dimensions of self-efficacy in professional interaction with older adults was required.

Using comments from focus group interviews with first, second and third year physiotherapy students, the characterisation of self-efficacy to interact with older adults in a professional manner was presented in two main areas: (1) multidimensionality of self-efficacy within the domain of professional interaction with older adults and (2) sources of self-efficacy. A grounded-theory approach was used to identify the multiple dimensions within the domain of professional interaction with older adults. Four major dimensions were identified: (1) type of older client, (2) purpose of professional interaction and level of student’s knowledge, (3) the type of professional interaction and (4) situational factors.

Based upon students’ comments a pilot questionnaire was developed to measure self-efficacy to interact with older adults in a professional manner. This
questionnaire was distributed to first year students (cohort 4; n=124). Factor analysis of responses revealed seven components. Comparison of the factors with the four dimensions identified from focus group interviews supported the identified dimensions. First year students scored highest confidence levels on items which related to Purpose of Professional Interaction (Factor 1) and lowest scores on items relating to Type of Client (Factor 2) and the Situation (Factor 3). Results from this factor analysis may be viewed with caution as the sample size may be considered small in relation to the number of items on the questionnaire and the subjects were first year students with no or limited clinical experiences. Triangulation with the results from the focus group interviews demonstrated good agreement, however, which enables one to have a reasonable level of confidence in the findings, in spite of the less than ideal sample size.

In the second area of characterisation, students’ comments supported Bandura’s sources of self-efficacy with direct and mastery experiences as the most powerful, followed by vicarious observation of other professionals as well as classmates and/or verbal persuasion from the clinical educator and client. Their physiological state was discussed by few students as a contributor to level of efficacy, therefore, it is not known if students consider this a source of self-efficacy. Similar to Chapter 7, these findings provide additional support for the development of experiential learning activities to improve professional interaction skills.

Recommendations for the education of professional interaction skills within the physiotherapy curriculum include a multi-dimensional approach throughout the curriculum.

Discussion and conclusions to this research project are provided in the following chapter (chapter 9).
Chapter 9
Overall Discussion and Conclusions

This chapter consists of five main sections: contributions to knowledge, educational implications, limitations of the study, summary of future research and personal reflections. Listed below are the headings within each section.

- Contributions to Knowledge:
  - Feasibility
  - Students’ Educational Needs
  - Effectiveness of the Learning Experiences
  - Characterisation of Self-efficacy in Professional Interaction

- Educational Implications:
  - Impact of the Learning Experiences
  - Curriculum Model
  - Sustainability

- Limitations of the Study:
  - Validity of Findings
  - Generalisability of Results
  - Practitioner-Research

- Summary of Future Research

- Personal Reflections

Contributions to Knowledge

An overall summary of this thesis, including main findings and contributions to knowledge, is provided in Figure 9.1. As depicted in earlier chapters, the core of the community-based learning experiences was to build first year physiotherapy students’ confidence to interact with older adults. An experiential learning approach implemented in the community setting was adopted using the theoretical foundation of Kolb’s model of experiential learning (feeling, reflecting, thinking and
**Cycle 4: Characterisation of Self-efficacy in Professional Interaction**

A multifaceted construct with four dimensions identified: purpose of professional interaction, type of client, situation, and type of professional interaction.

**Cycle 3: Effectiveness of the Learning Experiences**

- An increase in students' self-efficacy to interact professionally with older adults.
- Multiple learning benefits were all related to students' direct experience with older adults.
- Multiple benefits included: improved communication skills, increased awareness of older adults, improved attitudes towards older adults, enhanced theory to practice link, and relevance to future career.
- Recommendations: more, complex community learning experiences.

**Cycle 2: Understanding Students' Educational Needs**

- Students' learning style profile provided minimal information regarding educational needs or evaluation of educational experiences.
- Students reported limited exposure to older adults, especially 75 years and older and those with problems.
- Students reported lower self-efficacy with older adults 75 years and older and those with cognitive and emotional problems.
- A positive correlation between prior exposure and self-efficacy scores was shown.
- A correlation between students' approach to learning and level of self-efficacy, indicating a possible complex relationship between self-efficacy, motivation and deep learning.
- An increasing trend towards a surface learning approach across the curriculum suggests the need to evaluate the curriculum.

**Cycle 1: Feasibility**

Strong support received from students and community partners to continue the learning experiences, demonstrated that early experiential learning activities based in the community were feasible and beneficial.

---

Students Experience
Professional Interaction with
Older Adults

Students Provide a
Community Service

*Figure 9.1: Main Findings and Contribution to Knowledge (Diagram adapted from Bligh, 1999)*

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experimenting). The base of the learning experiences included first-hand experience in professional interaction with older adults as well as the provision of a community service. The cycling arrows represent the spirals of action research: reflect, plan, act, and observe. Within each box representing a research cycle, the main findings and contributions to knowledge are presented. Each of the main findings will now be discussed in relation to curriculum design and development of professional interaction skills.

**Feasibility**

In Cycle 1, the main question was the feasibility of conducting community-based learning activities for 150 physiotherapy students early-on in the curriculum (first semester of first year). There were two major concerns for the faculty: (1) the student intake was increasing from 100 to 150, which meant strain on resources; and (2) traditionally, students do not have direct contact with clients so early in a curriculum (the learning experiences started in week 3 of year 1). Both concerns were alleviated following the first implementation of the community learning experiences. Despite the increase in student numbers, the community-based learning experiences were implemented by one faculty member, within scheduled teaching hours, therefore, did not require additional resources. Feedback collected from students, community leaders, and exercise participants indicated strong support to continue the community-based learning experiences with older adults. Students reported improved confidence to interact with older adults and rated the learning experiences as ‘good’ or above. Negative feedback from students was predominantly regarding workload issues, which related to the timing of the *Home Visits* (close to exams) and the high number of in-class teaching hours. The community leaders supported the continuation of the learning experiences, recognizing the value of providing exercise classes for the members of their community centre. Finally, older adult participants reported health benefits from the exercise classes.

Early exposure to clinical areas has been a recommended curriculum modification within physiotherapy and other health care professions to facilitate professional learning (May, 1995; Wessel et al, 1999; Jefferson, 2001; Mann, 1994; Lam et al, 2002). The community-based learning experiences with older adults presented in this thesis were designed to provide students with early exposure to this potential client
population as well as to the community setting. In early discussions regarding the
planning of these community learning experiences, many faculty within the
Department of Rehabilitation Sciences at The Hong Kong Polytechnic University
expressed concern about placing students into the community setting so early in the
curriculum (first semester, first year). This was the predominant concern of many
educators as entering students would not have the required knowledge of ‘normal’/
‘abnormal’ behaviour, or skills in professional interaction. The majority of the
academic faculty were most comfortable with the traditional curriculum design:
students should first be provided content knowledge in a lecture format, be given
tutorial or practical sessions, then be permitted exposure to ‘clinical’ populations.
This is a common approach to education within the health professions and is the
method that most educators would have experienced during their own physiotherapy
training. As discussed in Chapter 2, Jenson et al (1990) report that this style of
education does not promote the development of the ‘new’ physiotherapist who will be
clinician, teacher, administrator, consultant, and researcher. New learning
experiences that develop independent and flexible learners are essential.

Contrary to initial concerns, the community learning experiences were a success from
the students’ perspective as well as the community partners. Given that these Hong
Kong physiotherapy students were young (entering directly from secondary school)
with minimal life experiences, and reported limited exposure to older adults, the
positive feedback from both students and community partners was a very encouraging
finding. Faculty’s concerns that students did not have enough ‘knowledge’ and
‘experience’ during the first semester of the first year to interact with older clients in a
community setting could now be alleviated. These findings support current
educational trends (e.g. problem-based learning, community-based learning) which
aim to reduce the separation between theory and practice (Jarvis, 1998). Specific
benefits of the learning experiences expressed by students are discussed later under
effectiveness of the learning experiences.

The success of the learning experiences after the first implementation contributes to
the growing body of educational literature that supports early clinical learning
activities in curricula for health care professionals (e.g. Lam et al, 2002), as well as
increasing experience in community settings (Howe, 2001; Gahimer and Morris,
Traditional curriculum design within the health professionals has assumed that students require taught knowledge in basic sciences and normal structure/function/behaviour prior to gaining experience in clinical related areas (Bligh, 1999; Lam et al, 2002). Recently, however, given the changes to health care delivery and professional expectations, graduates need to be independent, reflective practitioners. Similar to other professional programmes, physiotherapy education must strike a balance between the large amount of factual information to be learned and problem-solving or higher level thinking skills (Jefferson, 2001).

Reflection on why the early community learning experiences were a success revealed a number of aspects. For successful implementation of a community learning experience, the design is important (Seifer, 1999). In this project, an experienced faculty member designed and implemented the community learning experiences with older adults. This faculty member took on a mentorship role in the first community learning experience (Exercise Partners with Older Adults), guiding students' learning by defining specific tasks (e.g. measuring pulse rate), demonstrating group exercise skills by leading the exercise session, and facilitating the reflective discussion afterwards.

Students were able to observe an experienced physiotherapist interact with clients and community leaders as well as interact with older adults themselves. I believe this mentoring role provided by the experienced faculty member was an important element to the success of the community learning experiences. This also provided students the opportunity to learn and build self-efficacy through observation (e.g. vicarious experience, Bandura, 1997).

In the second community learning experience with older adults (Home Visits), the university faculty member organized and developed the learning experiences, however, played less of a mentorship role. In this experiences students now interacted directly with the community leaders and community members. This provided a progression towards more independent professional interaction for the students.

The use of the full experiential learning cycle: experience, reflection, integration and experimentation (Kolb, 1984), was considered important (limitations to Kolb's
learning model are briefly discussed later in this chapter under Educational Implications). Firstly, students experienced beginning level professional interaction with older adults. Students then reflected upon their experiences. The community learning experiences were also integrated into lectures within the Development of Motor Behaviour subject and a second experience was provided to allow students the opportunity to build upon previous experience. Reflective learning, as noted by Jarvis (1998) follows a similar circular cycle of experience, reflection, evaluation and experimentation. Dewey (1938) commented on the importance of the continuity of learning and the need to build upon learning experiences. This is an important curriculum design issue and is reflected in many contemporary curriculum designs (Bligh, 1999). Each horizontal (year) level builds upon the next providing a vertical integration and progression within the curriculum. In a traditional physiotherapy curriculum diagnostic categories such as musculoskeletal, neurological or cardiopulmonary problems are progressed from year to year. In more contemporary curriculum designs professional attributes such as ethics and communication skills are threaded throughout the curriculum (Bligh, 1999; Laidlaw et al, 2002; May et al, 1995). In this respect, a learning experience, subject or module within a curriculum design is not seen as an isolated entity, but an integral part in a dynamic curriculum. The importance of integration and progression with the curriculum is further discussed later in this chapter.

Finally, as noted by Lam et al (2002), “the teachers’ performance and attitude directly influence students’ perceptions of the course.” (p.239). The teacher implementing the community based learning experiences for older adults was experienced in community and geriatric physiotherapy, was highly motivated and enthusiastic. This undoubtedly contributed to the success of these learning experiences.

**Students’ Educational Needs**

The success of the first cycle paved the way for the second cycle. With the question of feasibility now answered, research questions evolved. In the second cycle, the research theme was students’ educational needs. The main findings in this cycle included:

- students’ limited prior experience with older adults,
• students' lower self-efficacy interacting with older adults who have cognitive or emotional problems,
• a positive correlation between prior exposure to older adults and level of self-efficacy,
• a correlation between self-efficacy in professional interaction and students’ approach to learning (surface or deep), and
• a trend towards surface approach to learning when comparing year 1 with year 3 students.

The relevance of each of these findings is discussed below.

Prior Interaction with Older Adults and Self-efficacy to Interact with Older Adults

The first year physiotherapy students in this programme reported limited exposure to older adults. The identification of students’ lack of interaction with older adults supported the need for early experiential learning activities with this potential client group (Kolb, 1984; Wessell, et al, 1999). Feedback from physiotherapy students, similar to medical and nursing students, indicated that students feel under-prepared and anxious prior to their clinical education placements (May et al, 1995; Roe-Shaw, et al, 2003; Kneebone et al, 2002; Mann, 1994; Lam, 2002). Given that the Hong Kong students had limited exposure to older adults and no prior experience in health care, educational opportunities that provide experience in these areas are important to the curriculum. The use of early experiential learning activities have been advocated to prepare students for the clinical environment. For example, Kneebone et al (2002) reported that students highly valued an innovative model for learning clinical skills which focused on the integration of manual/technical skills and professional interaction. Similarly, the community-based learning experiences described in this study permitted physiotherapy students the opportunity to combine manual technical skills with professional interaction. This is further discussed later in this chapter under effectiveness of the community learning experiences and curriculum recommendations are provided.

Students’ perceived efficacy in professional interaction was positively correlated with their prior exposure. The correlation between self-efficacy and prior exposure lends support to enactive mastery experience as an important method for building self-
efficacy (Bandura, 1997). As a curricular recommendation, this positive correlation between self-efficacy and prior exposure again provides support for the use of early experiential learning activities to build self-efficacy in professional interaction skills.

Understanding students' educational needs in professional interaction is valuable to curriculum design. The Hong Kong physiotherapy students were lacking in prior exposure to older adults. Students in programmes elsewhere in the world may report higher levels of prior experience, as many physiotherapy programmes require students to demonstrate related experience within the admission requirements (BSc, MSc or Doctoral level programmes). The important element for any curriculum design is to understand students' needs, then design appropriate learning experiences (Laidlow et al, 2002).

This project has focused on professional interaction with older adults; however, assessing students' perceived efficacy in other professional areas could be a useful measure in curriculum evaluation. May et al (1995) reported the importance of including the education of 'generic' abilities within a professional curriculum. Generic abilities include the ability to apply knowledge and skills across different environments, assimilate information from a variety of areas, integrate cognitive, affective and manual skills and finally demonstrate effective professional interaction (Kaufman, 2002). Both May et al (1995) and Kaufman (2002) have described an ability-based assessment for professional generic abilities. This assessment is based upon observation of the students' behaviours in the clinical environment. Measuring students' self-efficacy in these generic abilities early-on in the curriculum could provide valuable information in designing early educational experiences to prepare students for the clinical environment. With the increasing focus on evidence-based education (e.g. Elliot, 2001), using self-efficacy in appropriate domains is a viable measure for educational goals. Further discussion on self-efficacy is provided later in this chapter.

In summary, the correlation between prior experience and self-efficacy in professional interaction is an important finding. Firstly, this provides support for the use of experiential learning to enhance students' self-efficacy to interact with older adults. Secondly, this correlation provides support for admission requirements to include prior experience in a related healthcare environment. Thirdly, an assessment of
students’ prior exposure to a variety of situations (e.g. hospital) and individuals (e.g. people with disabilities, children) can provide educators with valuable information to design learning experiences in a variety of areas.

**Student Approaches to Learning**

Using the revised Study Process Questionnaire (R-SPQ-SF), students in first, second and third year of the physiotherapy programme were assessed on their approach to learning. A decrease in the deep learning approach, along with an increase in surface study strategies, was found as students progressed through the programme (see Figure 6.3). Unfortunately, this is a common finding in many programmes (Kember, 2000; Biggs, 1999). Students often enter a course of study eager to learn, however, in many traditional curricula with heavy workloads, didactic teaching approaches, large number of contact hours and assessments that test content knowledge, students adopt a survival surface study approach to complete their degree. The trend towards increasing use of surface strategies has been one of the motivating factors to changing teaching practices to become more student-centred, relevant to the workplace (e.g. problem-based learning, experiential learning, reflective learning) and process oriented (facilitating life-long learning).

Zhang and Watkins (2001) have reported a link between approaches to learning and cognitive development (Perry, 1970) in university students. They found that students who reported using dualistic ways of thinking (lower cognitive skills; definite right or wrong answers) also reported using a surface approach to learning. Students however, that reported higher cognitive abilities (relativistic and committed) adopted a deep approach to learning. Within the relativism stage, students recognize that solutions must be evaluated and are dependent upon the context. At the committed stage, the student integrates knowledge learned from others with personal experience and reflection, commits to a solution, experiences the implications of the commitment and recognizes the ongoing process of evaluation (Rapaport, 2003; Perry, 1970). This link between cognitive development and approaches to learning reported by Zhang and Watkins (2001), suggests that the third year physiotherapy students in this study showed lower cognitive abilities than the first year students. Whether this is an artifact of the teaching curriculum or whether it is a difference in student groups is not known. Further investigation is required.
Interestingly, Zhang and Watkins (2001) also reported that Mainland Chinese university students did not follow the same cognitive development as reported by Perry (1970). In their Chinese sample, first year students indicated ways of thinking that were more relativistic than when compared with third-year students who were more dualistic in reasoning. The authors' explanation for this was that the Chinese education system provided little choice for the students and Perry’s model of cognitive development was based upon the foundation of choice provided within the American context (e.g. students experience critical analysis, discussion, choice and reflection). The learning experiences for the Chinese students consisted of lectures with no student participation, a context consistent with promoting surface study approaches (Biggs, 1999). The authors made no comment on students’ development of knowledge or understanding within the taught subject areas, or how the students’ learning was assessed. Cultural differences in intellectual development is beyond the scope of this study, however, it appears that the learner’s experience can influence both approaches to learning and cognitive development.

Although there are limitations to the findings in this study (e.g. cross-sectional data collection as oppose to longitudinal, see Chapter 6), the results suggest that this physiotherapy curriculum needs to better facilitate deep learning approaches. Given the exponential increases in knowledge many professions are now facing (the knowledge explosion) (Candy, 2000), decisions regarding content to be included in the curriculum are difficult. Providing too much content in the curriculum, however can contribute to students adopting a surface approach to learning. Teaching practices reported to result in students’ use of surface learning approaches include: differences in learning objectives and assessment methods, overload of content material, assessment methods that create anxiety, limited feedback on progress, lack of interest in the area, and previous learning experiences that encouraged a surface approach (Biggs, Kember and Leung, 2001; Ramsden, 1992).

Many of the Hong Kong students in this study would have entered university from the local secondary school education system which has traditionally focused on content knowledge and exam preparation (Tang and Biggs, 1996). Given this highly competitive learning environment, surface learning strategies may be assumed to be a common learning approach by many Hong Kong students. As reported by Kember
(2000) and supported in the findings of this study, however, Hong Kong students do adopted study strategies focused at understanding. Therefore, the increase in surface learning approaches found in the final year physiotherapy students should be investigated.

The physiotherapy curriculum at the Hong Kong Polytechnic University had a high number of contact hours per week (e.g. 30 hours/week) including tutorial and practical sessions along with large group lectures. Although tutorial classes were intended to provide students with an opportunity to apply concepts introduced during the large group lecture, it was my experience in team teaching situations, that tutorial sessions often became ‘mini’ lectures, an opportunity to deliver more content information to the students. This is not uncommon as instructors may feel it is most important for students to have covered all the material. The risk, however, is that the students have little time to engage in independent, active learning activities.

Enhancing students’ deep approach to learning is a challenge. A dilemma faced by many physiotherapy curricula is how much content knowledge must be covered and how much time is provided to facilitate students’ independent learning skills (Jefferson, 2001). Newble and Clarke (1986) reported an improvement in medical students deep approach to learning using a problem-based learning curriculum (Newble and Clarke, 1986). In a problem-based learning (PBL) curriculum, learning is self-directed and cooperative (small-groups). The teacher acts as a facilitator to students’ learning, but is not a content expert. Students identify gaps in their knowledge and search the answers using available resources (textbooks, journals, internet). Contrary to most curricula where students are provided with content-specific knowledge first and problems afterwards, in PBL, students receive the problem first then seek the knowledge.

Other methods cited to promote a deep approach to learning include: encouraging active involvement in the learning activities, clear academic expectations, a personal commitment to the subject matter, providing students choices, and previous experience that encourage a deep approach (Ramsden, 1992). Physiotherapy students’ feedback following the community-based learning experiences with older adults indicated that these early community-based learning activities stimulated students’ interest in their future career and their studies. This indicates that
community-based learning experiences can enhance students' motivation to learn as well as a deep learning approach. A more detailed evaluation of the relationship between community-based learning and deep learning throughout the curriculum is warranted.

Approaches to Learning and Self-efficacy

On examining the correlation between students' approaches to learning and self-efficacy to interact with older adults, a significant negative correlation was found between surface approach and level of self-efficacy. This indicates that students who tended towards using a surface approach to learning also reported lower self-efficacy in professional interaction with older adults. A positive correlation was found between the deep approach scores and self-efficacy, indicating higher deep approach scores were consistent with higher self-efficacy scores. This correlation did not, however, reach the level of significance. These findings are consistent with Drew and Watkins (1998) who reported a negative correlation between locus of control and surface approach to learning, and a positive correlation between academic self-concept and deep approach to learning.

Locus of control refers to an individual's belief in the level of personal control one has over life events (Drew and Watkins, 1998). A student with an internal locus of control will more likely accept personal responsibility for academic results (Drew and Watkins, 1998), believing that individual factors such as effort expended can influence outcomes. An external locus of control, however, represents a belief of little personal control over outcomes, a more fatalistic or learned helplessness view. In general, individuals who believe they have some control over outcomes (internal locus of control) are more active and achieve better results than those who believe their efforts will not influence outcomes (external locus of control) (Drew and Watkins, 1998; Bandura, 1997).

Academic self-concept is a cluster of ideas and attitudes regarding oneself within the domain of academic performance. As described in Chapter 2, self-efficacy, self-concept and locus of control (an outcome expectation) are often seen as inter-related terms, however, distinctions have been described (see Figure 2.4). Self-efficacy is one's belief in ability; locus of control is one's belief in personal actions affecting
outcomes and self-concept includes affective aspects such as self-worth and self-esteem.

The relationship between self-efficacy and locus of control is illustrated in Table 9.1. One may possess a strong belief in personal efficacy in a particular domain, however, believe that social practices or administrative regulations prohibit desired outcomes (e.g. historically, women and minorities were not accepted in executive positions). Within this framework, the most desirable situation is one that promotes high self-efficacy as well as providing the learner with some personal control over academic outcomes, e.g. positive learning experiences, alignment of learning objectives and assessment methods.

**Table 9.1: Self-efficacy and Locus of Control (adapted from Bandura, 1997)**

<table>
<thead>
<tr>
<th></th>
<th><strong>Internal locus of control</strong></th>
<th><strong>External locus of control</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Self-efficacy</strong></td>
<td>Strong belief in one's capabilities</td>
<td>Strong belief in one's capabilities</td>
</tr>
<tr>
<td></td>
<td>Belief in personal control over outcomes</td>
<td>Limited control over outcomes</td>
</tr>
<tr>
<td></td>
<td><em>Productive, personal satisfaction</em></td>
<td><em>Protest, social activism</em></td>
</tr>
<tr>
<td><strong>Low Self-efficacy</strong></td>
<td>Low belief in one's capabilities</td>
<td>Low belief in one's capabilities</td>
</tr>
<tr>
<td></td>
<td>Belief in personal control over outcomes</td>
<td>Limited control over outcomes</td>
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<tr>
<td></td>
<td><em>Self-devaluation</em></td>
<td><em>Apathy, resignation</em></td>
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</table>

The relationship between locus of control and learning approach as reported in Drew and Watkins (1998), indicated that students who believed they had little control over their academic outcomes, utilized surface study strategies, and experienced lower
academic achievement. Conversely, a positive correlation between academic self-concept and deep learning style was linked with higher academic achievement. Drew and Watkins (1998) described a complex linkage between academic self-concept, efficacy, motivation, and learning approach:

... when a learner has a positive concept of his academic ability he is more confident in his ability, his motivation becomes intrinsic and satisfaction derives from a deeper and more meaningful learning approach (p.183) (underline added).

The trends in correlation found in this study between students' approach to learning and self-efficacy imply that learning experiences designed to enhance students' self-efficacy in a particular area may also enhance a deep learning approach and vice versa. These findings warrant further investigation.

Bandura (1997) has commented on the relationship between self-efficacy and level of interest within an area, and level of interest is an important aspect of deep learning (e.g. SPQ items "I work hard in my studies because I find the material interesting."); "I find most new topics interesting and often spend extra time trying to obtain more information about them."). Bandura (1997) proposed two possible relationships between level of interest and self-efficacy worthy of further investigation: temporal pattern and threshold relationship.

The temporal pattern notion refers to a temporal lag between increasing self-efficacy and growth in interest. If growth in interest follows a temporal course, an increase in interest within a subject area would be a consequence of enhanced self-efficacy (Bandura, 1997, p.220). The threshold relationship denotes that a minimum level of self-efficacy may be required for growth of interest to occur, however increased levels of efficacy above the threshold, may not produce further gains in interest. Concurrent measurements of self-efficacy in specific domains (e.g. professional interaction and other abilities) and approaches to learning at selected times across the curriculum would be useful to track the development of both self-efficacy and learning strategies. If it was found that increases in self-efficacy preceded an increase in deep learning, understanding and developing students' self-efficacy in a variety of domains would assist in developing deep learners.

Self-efficacy theory can also be combined with Biggs' '3P' model of teaching and learning (Biggs, 1987), Presage, Process and Product to provide a framework for
evaluation of educational programmes (Figure 9.2). According to Biggs (1999) effective curriculum design depends upon constructive alignment throughout the curriculum, alignment of objectives, teaching methods and assessments. Bigg's 3P model emphasizes the importance that teaching strategies be aligned with assessment approaches and educational goals. Important educational goals are to engage the student in active learning and encourage a deep approach to learning. It is what the student does that is most important for learning (Biggs, 1999).

Learners enter the learning environment with their own unique set of experiences and preferences (presage). The learning process is influenced by both the student factors as well as the teaching context. The student factors and teaching context, in turn, influence each other (e.g. needs assessment). The teaching context facilitates the learning process, which then results in a learning product. Under Presage, as demonstrated in this study, student factors such as students' level of self-efficacy and prior experience are important factors. Under Process, learning activities are focused on building self-efficacy and enhancing deep approach to learning. Finally, student's self-efficacy within identified specific domains (e.g. professional interaction or others) as well as approach to learning could be measured as evidence of learning outcomes.

Within Bigg's 3P model (Figure 9.2), students' approach to learning can be measured using the Study Process Questionnaire, at all three levels: presage, process and product. Measuring students' approach to learning in the presage level helps to identify students' preferred approach, which may stem from past experiences. The predominant approach and variety of individual approaches can also be identified. This level can serve as a baseline comparison for an educational intervention (Biggs, Kember and Leung, 2001).

At the process level, an ongoing evaluation can be maintained. This feedback to the instructor can provide valuable information during the teaching intervention or educational experience, which can allow the instructor to adapt teaching strategies accordingly. Finally, at the product level, evaluation of students' learning approaches in different contexts provides a comparison of teaching approaches (Biggs, Kember and Leung, 2001).
Similarly, assessment of students’ self-efficacy can be utilized. The measurement of approach to learning is complementary to assessment of self-efficacy. Approach to learning is a more global assessment, while self-efficacy is domain specific.

Most educators agree that it is not possible to provide students with all the ‘knowledge’ they require to enter the workplace environment. For example, it would be impossible to ‘teach’ physiotherapy students all the medical diagnoses they may encounter in the clinical setting prior to a clinical placement. Equipping students instead with a learning process (e.g. solving problems) and motivation to continue learning is the goal of many programmes. Striking the balance between ensuring students have an adequate knowledge base, yet have the time to reflect and solve
problems is the challenge in many professional education programmes. Measuring students’ approaches to learning and self-efficacy aid in understanding the progression of students’ learning and warrants further investigation.

**Learning Style**

Students preferred style of learning was identified using Kolb’s Learning Style Inventory (1985). Although the majority of students preferred ‘watching’ (64%) as opposed to ‘doing’ (36%) to ‘grasp’ knowledge, students were represented in all four learning styles. Fewer students were found in the doing and feeling learning style (accommodator) (15%), similar to that reported by Wessell et al (1999) for Canadian physiotherapy students. Information on learning styles can be used in curricular design for two main reasons: (1) to be aware of students’ preferred approach, thus to ensure teaching reaches all students and (2) to challenge students to learn in methods that are not their preferred approach to become a more effective problem solver (Wessell et al, 1999; Kolb, 1984). The information gained from identifying Hong Kong students’ preferred learning style, demonstrated that students were most comfortable with less active learning styles (watching, thinking) and least comfortable with feeling and doing experiences. This information supported the need for experiential learning activities that encouraged ‘feeling’ learning modes, such as early contact with potential clients.

Results from the learning style assessment suggested that students may experience difficulty in ‘learning by doing’ as it was not their preferred learning style. Students’ feedback following the community-based learning experiences, however, did not support this assumption. Based upon the overwhelming positive student feedback linked to the value of direct experience, received following the community-learning experiences, students did not appear to have difficulty learning experientially. This finding questions the tenants of Kolb’s Learning Style Inventory and the use of learning style assessments.

Wessell et al (1999) found no change in Canadian physiotherapy students’ learning style throughout the curriculum (year 1 to year 4 students), which is consistent with the view that learning style is a more stable trait (Biggs, 1999). Wessell et al (1999) also reported no correlation between problem solving ability and preferred learning style. In this thesis, no correlation was found between students’ preferred learning
style and self-efficacy to interact with older adults in a professional manner. These findings suggest that assessing students’ preferred learning styles have limited benefit to curriculum evaluation. Assessing students’ preferred learning styles may have provided support for the use of experiential learning activities early-on within the physiotherapy curriculum, however, were not appropriate to use to evaluate an educational intervention.

These results suggest that students’ educational needs are best assessed using specific assessments related to specific objectives within the curriculum (e.g. self-efficacy, approach to learning), as opposed to global preferred learning styles.

**Effectiveness of Community-based Learning Experiences**

The effectiveness of community-based learning experiences was assessed using the following outcomes: measurement of students’ level of self-efficacy in professional interaction with older adults; and student feedback. Two main contributions to knowledge found within this cycle were: (1) the significant increase in students’ reported level of self-efficacy in professional interaction following the community-based learning experiences with older adults and (2) the complex benefits to student learning. The evidence suggested that two educational experiences with older adults (12-16 hours in total) could raise students’ efficacy in professional interaction. Not surprisingly, students with lower beginning levels of self-efficacy reported greater increases in self-efficacy following the community learning experiences.

The positive implications of increasing students’ self-efficacy in professional interaction are based upon Bandura’s theory of self-efficacy. Within this theory, the process of self-reflection and self-judgement are important factors in how an individual ultimately performs (Bandura, 1997). Literature reports that individuals with higher self-efficacy (belief in their abilities) perform better than individuals with lower self-efficacy (Bandura, 1997; Pajares, 2002). A person with higher self-efficacy within a particular domain is more likely to engage in the activity, and more likely to persist in the face of negative feedback. Similarly, an individual with lower self-efficacy within a domain, is more likely to feel that a task is more difficult than it really is and to give-up earlier. A physiotherapy student, therefore with higher self-efficacy in professional interaction with older adults will be more likely to choose to
work with older adults, to persist if communication difficulties are present and to feel less effort when performing the task. A further discussion on self-efficacy follows later in this chapter.

Overall, the outcomes of the community-based learning experiences matched their learning objectives (see Table 7.2). The professional and theoretical implications of these results are now considered. As discussed in Chapter 2, there are three main professional or theoretical foundations on which this study was based: (1) Importance of professional interaction skills; (2) Experiential learning theory (Kolb, 1984); and (3) Theory of self-efficacy (Bandura, 1977). An additional professional foundation for these experiences was the introduction to the community as a setting for health care delivery and the development of professional attributes (e.g. awareness and attitudes towards older adults). The learning objectives aligned with student benefits and the professional/theoretical foundations are summarized in table 9.2.

Recalling from Chapter 7, according to students' comments, major learning benefits were gained from the direct experience in professional interaction with the older adults. The value of direct experience in learning interaction skills or clinical skills has also been reported in the medical and nursing literature (Lam et al, 2002; Kneebone et al, 2002; Arthur, 1999). Hong Kong medical students reported benefits of early exposure to clinical skills, particularly when practical experiences were linked with visits to a real clinical setting (Lam et al, 2002). Medical students in the UK who participated in realistic scenarios using actors along with latex models reported benefits in combining technical procedures (e.g. wound suturing) along with interaction with a client (Kneebone et al, 2002). Similar to the Hong Kong physiotherapy students, medical students' comments reported in this article supported the value of real contact and the integration of manual with communication skills:

It's different with a living, breathing, talking patient. [It's] hard to talk to the patient and concentrate on what you're doing (medical student comment, Kneebone et al, 2002, p. 633).

... Before when we were practising on models, I thought 'Yeah, yeah, I know how to do it', but doing it on the actors (simulated patients) it was a real shock. No matter how much you've practiced beforehand, just doing it on a patient, with a real person there, it really helped (medical student comment, Kneebone et al, 2002, p. 633).
Table 9.2 Learning Objectives, Identified Benefits and Theoretical Contribution

<table>
<thead>
<tr>
<th>Learning Objectives</th>
<th>Student Benefits</th>
<th>Theoretical / Professional Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>To gain experience in beginning level of professional interaction</td>
<td>Improved communication skills</td>
<td>Professional Interaction in Physiotherapy</td>
</tr>
<tr>
<td>To increase students' confidence to interact in a professional manner with older adults</td>
<td>Increased confidence in professional interaction</td>
<td>Self-efficacy theory</td>
</tr>
<tr>
<td>To provide students exposure to community settings</td>
<td>Awareness of older adults Relevance to future career</td>
<td>Professional Attributes Community Health Care</td>
</tr>
<tr>
<td>To provide an introduction to group exercise with older adults</td>
<td>Relevance to future career Linking theory with practice</td>
<td>Community Health care Experiential Learning: Theory to Practice Gap</td>
</tr>
<tr>
<td>To provide an opportunity to give service to the community</td>
<td>Awareness of older adults</td>
<td>Professional attributes</td>
</tr>
<tr>
<td>To acquire an appreciation for exercise abilities of community-dwelling older adults</td>
<td>Awareness of older adults Relevance to future career Theory-practice link</td>
<td>Community Health care Experiential Learning: Theory to Practice Gap</td>
</tr>
<tr>
<td>To acquire an appreciation for social challenges facing older adults</td>
<td>Awareness of older adults</td>
<td>Professional attributes</td>
</tr>
</tbody>
</table>

Students in the Kneebone et al (2002) study were second or third year medical students and had prior teaching in both the technical and communication skills. It was not stated whether the earlier experiences in communication skills training were experiential in nature. Based on evidence from this study and others, the importance of providing ‘real’ experiences, particularly in the area of professional interaction skills is important (Kneebone et al, 2002; Burnard, 1994; Arthur, 1999). Learning activities such as role-play or case studies that do not include either real clients or
simulated patients may not have the same impact on student learning. Large group
lectures on communications skills would likely be even less effective.

The identification of the major benefits of the community-based learning experiences
with older adults (e.g. increased awareness of needs of older adults, improved
attitudes towards older adults, enhanced theory to practice linkage, and relevance to
future career), demonstrated the diversity and complexity of these learning
experiences. It’s unlikely that this multifaceted learning could not have occurred
within a similar time frame in a university classroom setting, with students interacting
with peers.

In summary, the community learning experiences were successful for a number of
reasons: students’ direct experience with older adults, reflection and integration of the
experience within the curriculum, assessment of students’ educational needs was
conducted, commitment of the teaching faculty and community partners, students
were not graded on their performance, and the constructive alignment of the
objectives, learning experience and assessment. Discussion of these points follows.

The value of the students’ direct experience with older adults and within the
community setting was discussed previously (see Chapter 7). In addition to the
benefits reported by students, outside classroom experiences have been reported to
promote cognitive development in university students (Zhang and Watkins, 2001).
Students with a wider range of life experiences, such as work-related or leadership
activities, were reported to have higher cognitive levels (Zhang and Watkins, 2001).
This is consistent with cognitive development and learning theories that emphasize
the importance of the learner’s experiences (e.g. Perry, 1970; experiential learning;
constructivism). Within the community-based classroom, students interacted directly
with a real client within an unfamiliar and unpredictable context (community setting).
This provided students with first-hand experience in a work-like setting, early in their
professional training. It is possible that these learning experiences could have
contributed to students’ overall cognitive development and further testing in this area
is warranted.

Reflection, integration into university learning and additional experiences with older
adults in the community were important education elements to these learning
experiences. The learning activities were designed to follow Kolb’s Experiential Learning cycle: experience – reflection – abstract conceptualisation – active experimentation (Kolb, 1984; see Chapter 2 and Chapter 4). Although there are shortcomings with Kolb’s learning model (see Educational Implications), the importance of reflection and building upon experience is supported by many. Dewey (1938) argued the importance of the continuity of learning experiences, each successive experience growing on the previous. Jarvis (1998) presented a more complex theory of learning where the learner either engages in reflection, experimentation, and/or evaluation to achieve learning. The process of reflection has also been highly supported within professional education (e.g. Kember, 2000). Further research is required to identify key learning phases in community-based learning activities.

Understanding students’ educational needs and the importance of a strong commitment from both the academic department and the community partners were both important elements and have been discussed earlier.

Students were not directly assessed on their performance in professional interaction. As these were beginning level learning experiences, assessment of their performance in professional interaction was not considered appropriate. Assessment would add more anxiety to the students and may diminish their self-efficacy (Bandura, 1997). Kneebone et al (2002) noted, however, that providing feedback is important to learning and acquisition of skills. During the community-based experiences described in this thesis, feedback regarding professional interaction skills was facilitated in the discussion session and students were asked to reflect upon their own performance. A recommendation for the progression of community-based learning experiences for upper year students would be to add a feedback component for the student from the older client and from the instructor.

Finally, the constructive alignment of objectives, learning experience and assessment was important. According to Biggs (1999) and Zhang and Watkins (2001) the assessment methods within a curriculum have a strong influence on students’ approach to learning. Assessments that focus on memorizing large amounts of content knowledge obtained from lecture material are considered to encourage a surface approach to learning. Conversely, assessment methods that require
independent thought, application and integration of knowledge/skills and self-reflection (e.g. portfolio assessment) facilitate a deeper approach to learning. Following each community learning experience, students were required to submit a lab report which provided self-reflection on the experience (see Appendices 12 & 14). The reports following the Exercise Partners with Older Adults and Walking and Talking with Older Adults experiences were compulsory to complete and submit to the instructor, but were not graded. Following the Home Visits experience, students submitted an assignment based upon their visits which accounted for 30% of their grade within the Principles of Physiotherapy Practice subject (see Appendix 13). The assignment promoted students to integrate their experience with knowledge from subjects (e.g. Development of Motor Behaviour) as well as reflect upon their experiences with older adults and children.

**Characterisation of Self-efficacy to Interact with Older Adults in a Professional Manner**

Evidence reported in this chapter confirmed the multidimensionality of self-efficacy in professional interaction with older adults including the following dimensions: (1) Purpose of Professional Interaction; (2) Type of Older Client; (3) Situation; (4) Type of Interaction. These dimensions were identified using qualitative analysis, then supported by factor analysis. Implications for physiotherapy practice, education and ongoing research are discussed.

**Purpose of Professional Interaction**

A physiotherapist uses professional interaction for a variety of purposes. Using the clinical reasoning model presented in the Department of Rehabilitation Sciences curriculum handbook (p. 19) (adapted from Wolf, 1985, p.174) the purposes of professional interaction can be highlighted at each stage (see Figure 9.3)

Within the steps of the clinical decision making process, professional interaction with the client occurs primarily within the physiotherapy examination and implementation of the treatment. Within assessment, what students reported most frequently that they learned about professional interaction from year 1 to year 3, was the importance of listening to the client and showing concern towards the client. Consistent with other literature on professional communication (e.g. Davis, 1989), listening is an essential skill. Students reported during their first clinical experience, they were too focused
on the client’s physical problem, not considering the client as a whole individual. This focus on a particular aspect may be a result of the students’ inexperience and inability to integrate social, functional, and physical problems. By providing students with community experiences will heighten their awareness of the needs of older adults. Complex learning experiences in the community provide practice in the interaction of professional interaction and manual skills. This practice followed-by reflection and discussion will promote a holistic view of the client, not just the assessment and treatment of a physical problem.

During the implementation of treatment procedures, the physiotherapist uses touch and movement in combination with verbal/non-verbal skills to teach exercises (e.g. posture re-education) or to perform manual treatment techniques (see Figure 2.2). This integration of all aspects of communication may be unique to physiotherapists. Students in their final year reported using touch for communication, however, first year students were less aware of this medium of communication. Skilful expert physiotherapists use movement and touch to facilitate clients’ movements and motor performance (Jensen et al, 2000). Providing beginning level students with direct interaction with clients, not only verbally, but using touch and movement, (e.g. pulse rate, assisting with exercises), early in the programme initiates the development of these skills. Progressive community-based learning activities later in the curriculum would advance this integration associated with specific physiotherapy skills (e.g. manual, respiratory or neurological physiotherapy techniques).
### Steps in the Decision-making Process

<table>
<thead>
<tr>
<th>Step</th>
<th>Purpose of Professional Interaction with Older Adults</th>
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<tbody>
<tr>
<td>Referral</td>
<td>Obtaining information from the client, eg. structured questionnaires</td>
</tr>
<tr>
<td>&quot;Chief functional Complaint&quot;</td>
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<tr>
<td>Review History &amp; Patient Report</td>
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<tr>
<td>Perform/review Multidisciplinary Measures (e.g. Barthel Index, FIM, Quality of Life)</td>
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<td></td>
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<tr>
<td>Perform/review Multidisciplinary Measures (e.g. Barthel Index, FIM, Quality of Life)</td>
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<tr>
<td>Physiotherapy Examination</td>
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<td>Interview / assessment procedures</td>
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<td>Determine Clinical Problems that are within the scope of PT practice</td>
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<td>Set Measurable, Functional Goals</td>
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<td>Discharge Plan / Follow-up</td>
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<td></td>
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<tr>
<td>Choose Methods to Measure Change</td>
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<td>Choose Methods of Intervention</td>
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<td>Perform Treatment</td>
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<td></td>
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<tr>
<td>Measurement of Outcome</td>
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*Figure 9.3: Relationship Between Purpose of Professional Interaction in Physiotherapy and Clinical Decision-making Process (Wolfe, 1985)*
Professional interaction with a client also develops the rapport between therapist and client. Beginning level students reported they had difficulty developing a rapport with clients because their knowledge base was limited. These students could benefit with understanding their role as a beginning-level physiotherapy student in the clinical setting and clear guidance in how to advise clients. Early exposure to potential clients through community-based learning activities will provide the student with an experiential base to build upon. Learning activities that increase students’ self-efficacy in professional interaction should enhance their ability to develop rapport with clients. This hypothesis requires further investigation.

One strategy used within the Department of Rehabilitation Sciences to introduce students to the clinical environment is the ‘Buddy Attachment’, where first year students are partnered with a third year student to observe the clinical environment. This learning experience is conducted late in the second semester of the first year, prior to students’ first clinical education experience at the end of first year. This Junior-senior combination is used by other programmes as well (e.g. Bradshaw et al, 2002). Student and clinical educator satisfaction of the Buddy Attachment has not been formally evaluated, however, during the focus group interviews conducted for this thesis, students did not comment that the buddy attachment was beneficial for developing professional interaction skills. In my observations of the Buddy Attachment, the first year students were not engaged in any interactions with the client, but were primarily distant observers. Based on the findings of this thesis, a recommendation would be to structure the Buddy Attachments to ensure experiential learning activities for the first year students, not simply observation. An evaluation of the Buddy Attachment would also be warranted.

Type of Older Client

Within this domain, physiotherapy students reported a decrease in self-efficacy when a client refused their treatment, was uncooperative, rude, angry or upset. The students often felt as if they had done something wrong or that they didn’t know how to respond to the client. Students also found clients with cognitive problems difficult to interact with, as clients may not understand them or remember their instructions. Communication skills used within these areas should be addressed with students prior to their first clinical placement. Beginning level strategies to interact with angry,
distressed or confused clients include: importance of listening, stay calm, don’t argue with the client, never take anything the client says personally, try to understand client’s thoughts/feelings and seek assistance (Thomas, 2003; Somers, 2000). Enhanced communication skills in these complex situations require ongoing experience and guidance from academic and clinical educators, throughout the curriculum.

To broaden students’ experience with different types of older adults, the new community-based learning experience *Walking and Talking with Frail Older Adults* was designed. Student feedback was positive (see Chapter 7), recognizing the value in interacting with frail older adults, however, this community learning experience was implemented only once. The main reason for this was that the faculty responsible for designing and implementing this community learning experiences left the Department of Rehabilitation Sciences. I believe that the discontinuation of this learning experience was a result of faculty’s time commitments elsewhere, in combination with lack of experience in community-based learning as well as community physiotherapy. As discussed earlier, one of the important elements to the success of community-based learning experiences is the commitment, experience and enthusiasm of the instructor (see Sustainability of Learning Experiences later in this chapter).

Beginning level students identified language as a difficulty in interacting with older clients. Using qualitative analysis, language was grouped under ‘type older client’, as the client’s language was seen to be a trait of the individual. The factor analysis, however, grouped language of the client with ‘type of professional interaction’. It may have been that students associated the language a client uses with verbal interaction. To further tease out whether language belongs with ‘type of client’ or ‘type of professional interaction’ further development and use of the questionnaire is required.

A second issue under language was the use of physiotherapy jargon. Many first year students found the language they used when practicing with their peers in the classroom different from language used with older clients in the clinical setting. Appropriate Chinese translation of English physiotherapy terms (e.g. abduction,
supine lying, range of motion) commonly used in the classroom, could be easily integrated into the community learning experiences.

**Situation**

Students reported reduced self-efficacy in professional interaction when the clinical educator or family member was watching, or they were entering a new clinical setting. With the clinical educator watching, students are aware that their performance is likely being evaluated. The value of the community-based learning experiences was that students could interact directly with older clients, with feedback provided, but without an evaluation associated with performance. Increasing learning opportunities such as these, with a variety of clients in a variety of settings, would build students efficacy in professional interaction prior to entering the evaluative clinical education setting.

**Type of Interaction**

This dimension of self-efficacy in professional interaction links back to the types of interaction in physiotherapy presented in Chapter 2 (Figure 2.2). This domain, however, showed the weakest link with the factor analysis. I believe that the beginning level physiotherapy students who were subjects in this study were not aware of the complex interactions of communication including touch and movement, used by an expert physiotherapist. Jensen, et al (2000) reported even experts were unaware of how much they use their own bodies:

> Sometimes, they expressed surprise at how much they were doing with their hands and bodies while their attention was clearly directed elsewhere. (p.40)

Beginning student physiotherapists with limited prior exposure to physiotherapy would likely be unaware of manual and movement forms of communication. This area of professional interaction requires further research into education of the skills as well as therapeutic use in the clinical setting.

**Professional Implications re: Self-efficacy in Professional Interaction**

As discussed in Chapter 8, generalisability for the dimensions of self-efficacy in professional interaction was found in the physiotherapy and medical literature. The interaction between Dimensions of Expert Practice (Jensen et al, 2000) and Dimensions of Self-efficacy in Professional Interaction were summarized in Table
8.10. Aspects within the dimensions of self-efficacy in professional interaction – purpose and type of professional interaction – were also reported within the dimensions of expert practice. Similar to the expert practitioner, students’ identified listening, seeing the client as a whole person, using touch to communicate and showing concern for the client as essential aspects in professional interaction.

As a profession, the importance of therapeutic professional interaction has been addressed in Chapter 2 (Theoretical and Professional Foundations). Increasing evidence from the medical profession supports the linkage between effective professional interaction on clients’ improved psychological well-being, biomedical treatment outcomes, and client satisfaction (see Ambady et al., 2002). A recent study, examining physiotherapists’ nonverbal communication with geriatric clients reported that therapists’ distancing behaviour (e.g. not smiling, looking away, lack of interest in the client) was strongly correlated with short and long term reduction in clients’ physical and cognitive function (Ambady et al., 2002). A student’s or professional’s self-efficacy in professional interaction may play a role in the use of distancing behaviours in nonverbal communication. Linking measurable communication behaviours with level of self-efficacy in professional interaction would provide useful information on the link between performance and efficacy. There may be specific aspects of the multidimensional domain of professional interaction which predict actual performance better than others. Further research is required to link the self-efficacy and performance in professional interaction.

**Educational Implications**

Many of the educational implications of the community-based learning experiences have been discussed earlier, this section relates to the impact of these relatively short learning experiences. The key highlights include: (1) importance of 12 hours of experience, (2) constructing the experience and exact tasks required, and (3) importance of self-reflection to the development of self-efficacy. Following the discussion of these highlights, a curriculum model for the education of professional interaction skills for physiotherapy student is presented.
Highlight 1: Importance of 12 hours of experience

Of note was the impact that these relatively short community-based learning experiences (12-16 hours) had in a multitude of learning areas, e.g. students’ self-efficacy in professional interaction, awareness of older adults, attitudes towards older adults, theory to practice linkage in relation to aging, and relevance to future career. Students participated in two (cohorts 1 and 2) or three (cohort 3) community-based learning experiences, which amounted to 12 to 16 hours of learning experiences. Given that in the first semester of the physiotherapy programme, students would have experienced over 375 hours of scheduled learning activities, the community-based learning experiences amounted to only approximately 5% of university education of the first semester. In addition, when third year students were asked to think back on their three years of learning, and comment on what experiences (other than clinical placements) helped to improve their professional interaction skills, the majority of students reported the community-based learning activities with older adults which had occurred in their first year of study. This is indicative of the learning impact.

Within the education of health care professionals world-wide there has been a shift towards balancing university and hospital based teaching with community, primary care and health promotion learning activities (Howe, 2002). Community-based learning experiences have been designed within nursing, medicine and physiotherapy as opportunities during students’ clinical placements, which commonly involve community health care professionals such as community nurses or general practitioners to provide the clinical education (Utsey and Graham, 2001; Howe, 2000; Parry and Greenfield, 2001; Onoha, et al 2001). These clinical experiences are commonly conducted for a number of weeks over a semester [e.g. Onoha, et al (2001) - 3 hours per week for academic year; Howe (2000) - 3 days per week for 8 weeks; Utsley and Graham (2001) - 1 week]. The clinical education for physiotherapy students at the Hong Kong Polytechnic University was predominantly conducted in hospital settings with designated Clinical Educators, with the exception of one placement within the Special Schools for children, in the final year. At the time of this thesis there were limited or no community placements available to students.
One factor that likely contributed to the impact of these learning experiences was the limited prior experiences of many of the students. According to Bandura (1997) the level of difficulty of an experience is important to efficacy building. If a task is too easy, there will likely be no change in efficacy beliefs because the task is already within the realm of one’s abilities. To succeed at a challenging task, however, leads to increasing efficacy beliefs. The first year physiotherapy students were young (age 17-18 years), had limited prior interaction with older adults and had limited experiential educational experiences. As noted in chapter seven (Figure 7.4), students with lower self-efficacy scores showed a greater increase in self-efficacy following the community learning experiences. During the focus group interviews, mature students (who had previous experience working with older adults), noted that the community-based learning experiences with older adults were good beginning level experiences, but were not adequate to increase their level of self-efficacy in professional interaction. They may require more challenging experiences, however very few mature students were admitted into the physiotherapy programme. This highlights the importance of understanding students’ level of educational needs.

In relation to improving students’ attitudes towards older adults, it appears that students may have been lacking in prior positive experiences. Students’ comments reflected an ageist, stereotypical view of all older adults as incapable and unfriendly. Following the Exercise Partner’s with Older Adults learning experience, students’ comments highlighted the enjoyment they gained from the interactions with the older adults, an aspect they had not anticipated. The enjoyment or successful aspect of the experience combined with the capability and commitment demonstrated by the older adults to perform exercise challenged the students’ stereotypical views.

Students commented more on the increased awareness of the needs of older adults following the Home Visits learning experience. In this experience, students interviewed selected ‘homebound’ older adults in their home environment. Observation of the older adults’ living environment was likely critical to increasing students’ awareness of challenges faced by many older adults. Students’ comments reflected the importance of an individual’s quality of life and dignity despite possible loneliness, health problems and financial limitations. As part of the questionnaire provided by the community organization, students questioned older adults on their
financial status. This was difficult for many of the students and highlighted multiple needs of many of the older adults.

The combination of students’ improved recognition of the strengths and abilities of older adults during *Exercise Partners with Older Adults* along with an identification of some of the challenges facing older adults and observation of home environments during *Home Visits*, likely contributed to the change in some students’ attitudes towards older adults.

**Highlight 2: The experience and exact tasks required**

On reflection, aspects related to the experience and the exact tasks required that contributed to the impact of the learning experiences included: (1) the exact tasks required, (2) the students’ direct and mastery experience in professional interaction with older adults, (3) reflection and integration of the experience into other subjects and (4) progression of the learning experiences.

Students participated in all aspects of professional interaction (see Figure 9.4), using verbal, non-verbal, touch and movement professional interaction skills to begin experiencing therapeutic interaction with an older adult. During the *Exercise Partners with Older Adults* and *Walking and Talking with Older Adults* experiences, students conducted tasks such as the ‘sit to stand test’, teaching measurement of pulse rate and balance activities, which required a combination of all aspects of professional interaction. Examples of professional interaction tasks that students participated in during *Exercise Partners with Older Adults* are shown in Figure 9.4.

In the *Home Visits* learning experience students primarily conducted an interview, therefore participated mainly in the Verbal and Non-verbal aspect of professional interaction. In Figure 9.4, the environment is depicted as the background underpinning professional interaction. As noted above, observation of the older adults’ homes allowed for further insight into understanding older adults and their needs.
Secondly, as highlighted in chapter 7, the analysis of students' comments revealed direct experience as a core element to the all learning benefits identified from the community-based experiences (see Figure 7.6, Figure 9.5). The direct experience was also constructed to facilitate success or a mastery experience in beginning physiotherapy tasks in professional interaction. Students reported that the older adults responded well to their interactions, and they felt they were able to teach or help them. One student commented that her self-efficacy in professional interaction had not improved because she felt she was unable to ‘teach’ her exercise partner, as this older adult appeared to know all the tasks and exercises from participation in previous classes with students. Another student whose efficacy was not improved commented that she felt her exercise partner wasn’t listening to her, but instead was focused on the exercise leader. These comments reflect the importance of a mastery or
successful experience at this beginning level to build students' efficacy to face more challenging situations (further discussion of self-efficacy and reflection follows).

Thirdly, reflection and integration within the curriculum were key elements. The Exercise Partners and Walking and Talking with Older Adults experiences occurred early in the first semester. Students were then required to reflect upon the experiences at various times throughout the semester. Immediately following all learning experiences, students were guided in a reflective discussion regarding their interactions with the older adults including successes and challenges. Discussion of professional interaction skills included teaching movement tasks, types of interaction used (demonstration, tactile cues, non-verbal) and difficulties encountered. Unique topics were also discussed following each of the learning experiences, e.g., Walking and Talking with Older Adults included reflection on the observations of posture and balance of the older adults they partnered with, Walking and Talking with Frail Older Adults included discussion on mobility of the older adults, and Home Visits included difficulties in conducting the interview. Students then completed a lab report that they submitted the following day. The lab report was designed to further facilitate students' reflection on their experience with the older adults (see Appendix 12).

![Diagram](image_url)

*Figure 9.5 Direct Experience: Core to Other Learning Benefits*
The experiences were integrated into other university subjects during large group lectures within the subjects of Development of Motor Behaviour and Professional Seminars. Students were asked to reflect upon their community-based experiences in relation to subject matter discussed during the lecture, e.g. the therapeutic interview, theories of aging. This level of integration likely contributed to the theory-practice linkages. At the end of the semester, students completed a project within the subject Development of Motor Behaviour, in which students integrated their community experiences with both children and older adults with their understanding of motor control and motor development. In this project, students also provided a one-page reflection on the community experiences with both children and older adults. This integration and reflection of the community learning experiences throughout the whole semester provided relevance to the experiences and progressed students’ learning in the area of older adults.

The use of Kolb’s learning cycle provided a framework for students’ reflection and integration, as described earlier in this thesis. Limitations to Kolb’s learning model should be noted, however. Based on students’ comments provided immediately after the learning experiences, student learning had occurred at this time, either facilitated by the reflection process, or taken place during the learning experience. The student did not need to be progressed through all stages of the learning cycle, similar to a trial and error process, in order to learn from experience. This is closer to Schon’s (1987) work relating to reflection-in-action, where a number of elements occur simultaneously, as oppose to cyclically or linearly. Learning may also have occurred implicitly, without the need for students’ awareness and reflection (e.g. Jiang and Chun, 2001). Kolb’s model also, does not address the role of the individual’s emotions or feelings (Jarvis, et al 1999) in the experience. These limitations should be examined closely with future design of learning experiences.

Lastly, the community-based learning experiences were constructed to progress the students’ learning. In the first community learning experience, a skilled faculty member served as role model, guiding the learning activities. Although students were communicating one-to-one with their older adult partner, the faculty member was guiding the exercises and tasks performed by the student. In the second learning experience, university faculty worked with community partners to organize the Home
Visits, however, the students now interacted directly with community social workers and older clients during the visits. This provided students with an increasing independence in professional interaction. The third community-based learning activity Walking and Talking with Frail Older Adults, progressed students to interact with older adults who had more physical and/or cognitive problems. Although a faculty member was present during this learning experience, independent professional interaction occurred between students and older adults.

Highlight 3: Reflection and development of self-efficacy

As discussed earlier, the community-based learning experiences were designed to be mastery, or successful learning experiences, which was likely critical to the improvement in students’ level of self-efficacy in professional interaction. In addition to this, the relationship between development of self-efficacy and reflection is worthy of discussion.

According to Bandura (1997), the extent to which individuals will alter their self-efficacy following a successful experience depends upon:

...among other factors, their preconceptions of their capabilities, the perceived amount of effort they expend, ..., the circumstances under which they perform, the temporal pattern of their successes and failures and the way these enactive experiences are cognitively organized and restructured in memory. (p.79)

Therefore, experiences that will best improve self-efficacy over time include ones that are congruent with existing self-concepts, tasks that are relevant and challenging (not too easy nor too difficult), selective self-monitoring to notice and remember successes as opposed to poorer performances, and continued overall improvement over time (may have some ups and downs).

As noted previously, students were asked to reflect upon their community learning experiences with older adults immediately after the experiences as well as at various times throughout the semester (in Professional Seminar and Development of Motor Behaviour classes). According to Bandura (1997), self-efficacy is self-perception or a self-judgement that occurs after an experience. It is through the cognitive processing and reflective thought that personal judgements related to the experience are made, which in turn, contribute to the building or decrease of self-efficacy (Bandura, 1997). The impact of a learning experience on self-efficacy beliefs depends upon how the
student interprets the learning experience and the value placed upon their performance. Through guided reflections (e.g. lab report) students' thoughts were directed to areas relevant to physiotherapy learning and highlighted tasks that the student had achieved. Reflections and integration with other subjects helped to provide further significance to the experience.

The development of resilient self-efficacy is nurtured through careful grading of learning experiences, and avoiding early situations of failure (Bandura, 1997). Once an individual builds a certain level of efficacy within one particular domain, failures are less likely to result in decreases in self-efficacy. The dip in self-efficacy noted in Figure 6.6, experienced by students following their first clinical placement may reflect that the students were not aware of the challenges and demands that occur during a clinical setting. This indicates that students could benefit from learning experiences that better prepare them for this environment and for the tasks required.

Throughout the curriculum, students' self-efficacy in professional interaction should improve in a step-wise manner, if the learning experiences can be graded appropriately (Bandura, 1997). At the beginning level, interacting with cooperative older adults with limited physical, cognitive or emotional problems should then progress to interaction with clients with more complex problems, to interacting with difficult or uncooperative clients. Choosing uncooperative clients for an unprepared beginning level student may lead to a decrease in self-efficacy. For some students the efficacy pattern may show ups and downs, however, the overall pattern should demonstrate an increase. For other students, a steady increase may be noted along with increasing experience in more complex situations. Each student may develop their own unique pattern in self-efficacy development, based upon their individual characteristics and experiences. As a student experiences and reflects on an increasing number of successful encounters, a resilient self-efficacy is developed which will stay, despite occasional poorer performance.

**Curriculum Model**

The following section provides a curriculum model for education of professional interaction in physiotherapy. In Chapter 8, curricular recommendations were suggested (Table 8.11). Professional interaction and community-based learning experiences need to be viewed as core elements that traverse the curriculum,
integrated within a variety of subject areas and across the entire curriculum. Yearly stages suggested were: developing core clinical skills in year 1; expanding the interaction process in year 2; consolidating communication skills in year 3 (Laidlow et al, 2002).

In figure 9.6 an overview of a curriculum design to enhance professional interaction is provided. The important elements in this spiral figure have been noted previously. The use of Kolb's model of experiential learning is now questionable, with limitations noted previously. The four distinct quadrants have been removed, however, the experience, reflection, integration and application remain. The 3-P curriculum model (Presage, Process, Product) (Biggs, 2001) as discussed earlier is highlighted on the left. Evaluation of learning outcomes, conducted regularly enables a fluid, flexible curriculum based upon students' needs. Baseline and ongoing measurement of students' approach to learning (e.g. R-SPQ), along with self-efficacy, are complementary evaluation measures. Within the boxes of yearly stages, examples of learning activities to enhance professional interaction skills are provided.

This curriculum model demonstrates key aspects in planning the educational experiences to enhance professional interaction skills. Allocating an isolated module or subject on communication skills would not provide the integration or progression of educational experiences required. The community learning experiences should be appropriately integrated into each subject area (e.g. musculoskeletal, cardiopulmonary, neurological) and progressed for complexity and difficulty. As noted above, the development of resilient self-efficacy requires a stepwise progression in increasing difficult situations.

Figure 9.6 used in conjunction with table 8.11 illustrates curricular activities at each year of the physiotherapy curriculum. The multidimensionality of professional interaction is highlighted and suggested learning areas are provided. Other skills in professional interaction such as communicating with other professionals and presentation skills are included in this model. Subjects within the physiotherapy programme curriculum in Hong Kong are identified in the right hand column of Table 8.11 and indicate areas where professional interaction should be integrated. Other programmes may find this model useful for integration of professional interaction within their own curriculum.
Community-based / Experiential Learning

Evaluation at graduation and afterwards (Product)

Ongoing evaluation throughout (Process)

Self-efficacy Approaches to Learning

Baseline Measures: (Presage)

Prior experience Self-efficacy Approaches

Core: Confidence Building in Professional Interaction with Older Adults

Year 3: Consolidating Interaction skills
Community-based learning in specialized subjects (e.g. Community Elective Subject, Issues for Aged population, Multi-system dysfunction)
Integration of manual, movement & verbal communication skills
Presentation skills

Year 2: Expanding the Interaction Process.
- Community-based learning: Increasing experience with variety of clients, continuing the therapeutic relationship
- Communication skills practiced along with physiotherapy skills within professional subjects (e.g. musculoskeletal, cardiopulmonary and neurology)
- Integration of manual, movement & verbal communication skills
- Communicating with other health care professionals
- Presentation skills

Year 1: Developing Skills in Professional interaction.
Semester 1
Community-based learning with older adults and children, reflection and integration
The therapeutic relationship and helping interview: Self-awareness and empathy building exercises (e.g. Davies, 1999; Burnard, 1994)
Semester 2 subject: musculoskeletal dysfunction.
Experiential learning: Volunteer service
Integration of manual and communication skills
Preparing for Clinical Education I: e.g. topics see Table 8.11
Client-centred care: exploring client goals and needs

Figure 9.6: Curriculum design for Professional Interaction skills and Community-based Learning (use with Table 8.11)

Students Experience Professional Interaction with Older Adults

Students Provide a Community Service

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Referring to Table 8.11, within *Purpose of Interaction*, understanding the whole client is noted as third year students reported that in their first year they often viewed the client as a singular musculoskeletal problem. In their assessment students need to gain experience in viewing the whole client (e.g. functional measures, understanding client goals), as well as assessing specific musculoskeletal problems. Under *Type of Client*, prior to their first clinical placement, students need experience communicating professionally in Chinese to assist with using the correct translation. This could be a focus of learning experiences in the second semester of first year where students are learning about musculoskeletal conditions (Musculoskeletal I). As students reported, when practicing on their partner in university-based skills labs they used physiotherapy ‘jargon’ or English terms such as range of motion, abduction, supine lying, which are difficult to translate into Chinese appropriately for older clients. Within *Type of Interaction*, as students are learning their beginning level of manual skills, they should experience communicating with the client along with manual treatments. As Kneebone et al (2002) reported, the integration of professional interaction along with manual/technical skills is an important element of professional education that is often not addressed. Under *Situation*, additional community-learning experiences in the second semester, integrated with the Musculoskeletal I subject and in a different community setting than semester one, may improve students’ self-efficacy with these clients, despite their limited knowledge base in physiotherapy. Additional direct experiences with older adults prior to the clinical placement may provide students and educators with clearer expectations.

In year 2, students expand their professional interaction skills in relation to wider type of clients (e.g. cardiopulmonary, neurology and paediatrics). Similar to the above, community learning activities with increasing complex clients and varied community settings (e.g. Community Rehabilitation Network) are planned to integrate manual/practical skills along with professional interaction.

The curriculum model presented above is hypothetical. The individuals primarily involved with the initiation and implementation of the community-based learning experiences with older adults left the Department of Rehabilitation Sciences after two years of implementation, thus the above curriculum model was not developed. Strong support would have been required from other faculty members responsible for
teaching clinical subject areas in semester two of year one, and onwards. At the time that the community-based learning experiences with older adults were first implemented, further justification of the learning benefits and assistance may have been needed to encourage other faculty to design community-based learning experiences relevant to the subject area being taught. Support from programme leaders and the head of department also needed to be enhanced. In addition, health care delivery in Hong Kong was primarily hospital-based, with the shift towards increasing care in the community just beginning. Further discussion on sustainability follows.

**Sustainability of Community Learning Experiences**

Although this has not been a major emphasis of this thesis, the sustainability of the community-based learning experiences deserves comment. As noted earlier, the new community learning experience with frail older adults (*Walking and Talking with Frail Older Adults*) was implemented only once. This experience was not continued after the three faculty members primarily responsible for this learning experience left the department. Possible reasons for this are explored.

In general, challenges that rehabilitation therapy faculty reported when implementing experiential learning projects were related to four main areas: (1) time and effort, (2) student acceptance; (3) faculty resistance and (4) institutional barriers. In table 9.3, types of issues under each area are shown (Kwan et al, 2003).

More specifically when faculty involved with the community learning experiences were asked why they thought the *Walking and Talking with Frail Older Adults* experience did not continue their responses confirmed some of the above:

- Lack of support from subject and programme leaders
- Lack of faculty’s experience in this type of learning activity
- Time involved to plan and develop the experiences
- Fear of student and client safety, especially with first year students and frail older adults
- Faculty felt they had more control over the students’ learning experiences in the university setting
Faculty were not ready to make this change in teaching

<table>
<thead>
<tr>
<th>Time and effort</th>
<th>Student acceptance</th>
<th>Faculty resistance</th>
<th>Institutional barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>More time and effort demanded on staff in planning and arranging (e.g. identifying the right client group)</td>
<td>Increased student anxiety with unstructured activities</td>
<td>A new teaching method that challenges the status quo</td>
<td>Lack of support from colleagues and the system that does not reward innovative teaching approaches</td>
</tr>
<tr>
<td>A packed curriculum that allows little time for students or faculty to reflect</td>
<td>A new method of learning for the students</td>
<td>Views and reactions from colleagues</td>
<td></td>
</tr>
<tr>
<td>Safety issues for students and clients</td>
<td></td>
<td>Amount of pressure on staff, difficult to try something new</td>
<td></td>
</tr>
<tr>
<td>Frightening to staff that something might go wrong</td>
<td></td>
<td>Lack of sharing among colleagues</td>
<td></td>
</tr>
<tr>
<td>Balance of community service and students’ educational needs</td>
<td></td>
<td>Lack of understanding in service learning for both the students and the faculty</td>
<td></td>
</tr>
<tr>
<td>Linking experiences with other subjects and professional knowledge</td>
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</table>
With regards to the original two community-based learning experiences: Exercise Partners with Older Adults and Home Visits, these were continued for one year after the developing faculty members left the department, then were not supported by the subject or programme leader the following years (2001-2002). Currently, however, there is a new subject leader and a new programme leader who are supportive of experiential learning activities, thus community-based learning activities are again being offered to first year students. Not dissimilar to other areas of sustainability, these comments provide evidence to the importance of the motivation and experience levels of faculty members as well as the support from the system to facilitate innovative community learning experiences (Wallin et al, 2003).

**Limitations of this Study**

This thesis is a case study evaluation of new learning experiences developed for physiotherapy students in Hong Kong. An action research framework was implemented. In addition, this thesis examined the construct of students’ self-efficacy in professional interaction. Many of the limitations in this study are associated with the action research methodology and research-practitioner dilemmas that were discussed in Chapter 3.

Within traditional, quantitative research, the main issues related to the certainty of the ‘objective truth’ or knowledge obtained from a study include the validity of findings and generalisability of results. These issues, along with limitations associated with the research-practitioner will be discussed in relation to the research undertaken within this thesis.

**Validity of Findings**

Procedures for qualitative data collection and analysis were followed to ensure valid findings, e.g. triangulation and saturation. As with many qualitative studies, however, the validity of the results can be questioned. If I had run focus group discussions with all of the students, would the benefits of the community learning experiences or the characterisation of self-efficacy have been similar? One can ask this of any study. Focus group interviews were conducted until saturation (similar themes were re-emerging) which is common practice in qualitative research studies (Cutcliffe and
McKenna, 2002). Further validation of the results, particularly, the characterisation of self-efficacy in professional interaction will evolve with ongoing research. This characterisation and the themes presented is a novel theory, which requires further testing.

Results from the qualitative analysis were substantiated by a factor analysis. This is strong support for the dimensions that emerged from this analysis. The data used in this analysis, were however, from students only. These provide information into students’ views and experiences into the development of professional interaction skills, does not however, include the skills of an expert practitioner. This extension of the study would provide further information into the professional interaction domain.

In regards to the quantitative data collected with the questionnaires used in this thesis, further psychometric testing of the questionnaires is recommended. The next phase of this research would be to develop self-efficacy in professional interaction questionnaire. Important to note, however, is that self-efficacy may not be a consistent attribute over time (Bandura, 1997).

To allow for comparison between before and after scores of self-efficacy in the third cycle, students were asked to provide their name or student number on their questionnaire. Bandura (1997), however, reported that self-efficacy ratings should be performed confidentially to ensure ‘honest’ results. To help ensure students responded honestly, they were assured that their rating would not have any impact on their academic outcome (grade), and that their honest response was important for designing appropriate learning experiences. At the baseline assessment, students were not explicitly informed that they would be re-assessed following the community learning experiences, therefore they were unaware that their change in efficacy would be measured.

Students’ self-efficacy in professional interaction was measured at the beginning of the first semester (September) and at the end of the semester (Dec.). As reported in Chapter 7, a significant increase was found, which has been attributed to the community-based learning experiences with older adults. Knowing absolutely, that the increase in self-efficacy scores was a direct result of the community learning
experiences is difficult. In this study, students completed a questionnaire immediately following the learning experiences in which they indicated their change in confidence based upon their experience in the community. Most students indicated an increase in confidence, which support a linkage between the community-based learning experiences and the increase in self-efficacy scores. Other learning experiences during the first semester which may also have contributed to an increase in confidence were learning communication skills within the subject Professional Seminars (e.g. the helping interview, Davis, 1989) and general knowledge on aging (Development of Motor Behaviour). When asked during the focus group interviews, students did not indicate that either of these subjects contributed considerably to their professional interaction skills, however, most students referred to the community-based learning experiences.

Positivist, experimental researchers may criticize the reported findings, as there was no ‘control group’ used in the experimental design to rule out a placebo or Hawthorn effect. Could the same raise in efficacy be obtained with learning activities in the university classroom? This question remains unanswered, but as discussed, student feedback emphasized the value of direct contact with the older adults. The effectiveness of using a control group in educational research is also questionable (Kember, 2003). In many educational projects, control groups are not feasible to implement as educators and/or students will not accept the use of a control group. A control group may not be ethically appropriate. Contamination across the experimental and control group can often occur (e.g. students in different groups share their experiences), and control group/experimental strategies may not be possible within a curriculum. In this study, having a control group, where students did not participate in the community learning experiences would not have been educationally or ethically appropriate. Considering that one of the key purposes of the community-based experiences was direct contact with older adults early-on in the curriculum, to delay the community experiences for one group of students was not suitable. These community learning experiences were designed to be beginning level experiences to be built upon through the curriculum. Evidence-based education demands the evaluation of programmes, however, the context within each learning experience must also be understood.
Generalisability

This project was an evaluation of specific learning experiences within a physiotherapy curriculum in Hong Kong. As with any action research project or case study design, the generalisability of the results are unknown. Attempts, however, have been made in the discussion to illustrate support from the literature for findings within this thesis. The generalisability of findings within each cycle are now considered.

In cycle one, feasibility, the findings indicated the success of early community learning experiences. As discussed earlier, however, the success of these experiences may have been dependent upon the experience and motivation of the faculty member who designed the experiences, as well as the dedication and support of the community partners. The relationship between the university and the community is critical.

One finding that may be generalized to other professional programmes is the value of early exposure to the profession. One of the major concerns regarding the implementation of the community learning experiences was that the students ‘didn’t know anything’. Despite no ‘formal’ training in interviewing skills, professional behaviour, or physiotherapy assessment techniques, students performed well. The mentorship of an experienced educator and physiotherapist may have been an important factor. Our results, consistent with student-centred learning (Biggs, 1999), support building upon students’ current level of experience, students do not enter the programme as a blank slate. Faculty should be willing to embrace early experiential learning opportunities, however, careful planning and development is required. Support for early community experiences has been identified; each programme must review its own needs and learning objectives.

Specific findings within cycle two, educational needs, may not be generalisable to other physiotherapy programmes. For example, students in other programmes may report higher or lower levels of prior exposure to older adults, higher or lower levels of self-efficacy. What other programmes can learn from this cycle, however, is the value of assessing educational needs, both global (e.g. approach to learning) and specific (self-efficacy). The relationship between prior exposure and self-efficacy as well as the relationship between self-efficacy and student approaches to learning are also findings that may be generalized to other programmes. Linkages between self-efficacy and approaches to learning require further investigation.
Cycle three examined the effectiveness of the learning experiences. The positive feedback obtained from the Hong Kong physiotherapy students may or may be replicated in other programmes. Learning experiences would need to be designed appropriately based upon students’ needs. Increases in self-efficacy were greatest among students with lower beginning levels of efficacy, therefore, knowing students’ beginning levels of efficacy is important to designing appropriate learning experiences. The main student benefits, discovered through qualitative analysis of written comments and focus group discussions were supported by other literature reporting benefits of community learning experiences (e.g. Howe, 2000). Negative aspects of the learning experiences included student complaints regarding not enough time within the packed curriculum. Each programme will need to monitor educational benefits and impact within their own curriculum. The positive findings in this thesis, however, should help to liberate educators from traditional professional curriculum designs which emphasize the learning sequence of content knowledge in lecture, small group practical within the university, then exposure to the ‘real life’ situations.

Despite overwhelming support from the students and community partners, the community-based learning experiences were continued within the curriculum for only a short period of time after the faculty members who designed the experiences were no longer working in the department. This suggests that the findings in this thesis may not be applicable to all programmes. Within the academic department, the level of interest, experience and dedication of the faculty member as well as support from departmental managers are critical. Support from community partners is imperative.

Finally, the generalisability of the characterisation of self-efficacy (cycle 4) requires further research. The results reported in this study, although linked with other publications (e.g. Jensen et al, 2000), were based upon feedback from Hong Kong students only. The multi-dimensionality of self-efficacy in professional interaction was confirmed and consistency between qualitative analysis and factor analysis was positive. Further samples, however, such as expert clinicians and new graduate clinicians may provide valuable information into the characterisation of self-efficacy in professional interaction.
The development of a psychometrically sound instrument to measure self-efficacy would be important to further test the generalisability of the findings in this thesis.

**Research-practitioner**

As a researcher-practitioner, potential biases and ethical issues arise. As a teacher, responsible for grading students, issues of power differences exist. Asking students to provide feedback regarding learning experiences, to a teacher who will also be grading their academic performance may be placing the student in a difficult position. Students may want to please the teacher, thus report higher efficacy scores, or may feel reluctant to provide negative feedback. In this study, students were re-assured that their feedback would not have any implications on their grade and feedback was initially collected anonymously. In order to compare before and after scores, however, student identification was required. As the instructor of the community-based learning experiences was a member of a teaching team, one teacher was not solely responsible for the students' grades, which should help to minimize student bias.

As stated earlier, as researcher in the third and fourth cycle, I had the benefit of being more removed from the teaching process, as I was no longer employed within the department. Students in the upper years (cohort 1 and 2) that were interviewed may have seen me as a 'teacher', however, I was not responsible for grading their performance in clinical or academic settings. Students in cohort 3 and 4, would not have known me as a teacher. This provides more rigour to the findings of improved self-efficacy, as students did not view me as an evaluator of their performance.

There are more global, ethical issues related to using students as research subjects that should be identified. This study was part of a educational project funded by the University Grants Committee in Hong Kong, therefore satisfied their ethical requirements. Informed consent was collected from the students (see Appendix 11) and this was considered critical to ensure that students agree to allow their data to be included in the research project. The community-based learning experiences were included in the new physiotherapy curriculum, thus support was provided by the curriculum committee. These procedures help to ensure that the students' educational interests were maintained.
Other ethical issues related to providing a service within the community are prevalent. In this study students participated as exercise partners with older adults in a community centre. Volunteer older adults were recruited by the centre’s staff to join the exercise classes, under the assumption that the exercises classes would be of benefit to them. Older adult participants were aware that physiotherapy students were included in the exercise classes. To ensure that the exercise classes would be of benefit to the older adults, physical performance assessments were conducted to plan the correct exercises and feedback from the participants was collected following the classes. Balancing between student needs and older adults needs is critical. Again, informed consent was collected from the older adult participants. The expertise level of the physiotherapist instructor is critical to ensure this balance.

**Future Research**

Earlier in this chapter, under contributions to knowledge, areas of future research were identified within each area of discussion. To provide clarity to future research directions, an overview is provided.

Four main areas of potential research directions include: self-efficacy in professional interaction; higher education and learning; curriculum design; and professional practice. Within the area of self-efficacy in professional interaction, further research into instrument design and development is required to progress the understanding of the linkages between prior experience and self-efficacy as well as self-efficacy and actual performance. Steps towards the development of a standardized instrument would include gathering input from clinicians, both novice and expert, regarding professional interaction skills. This input would provide further understanding of the construct of professional interaction and identify items to be included in the instrument. Steps involved in instrument design and development include testing validity (e.g. content and criterion validity), reliability (item reliability and test-retest reliability) and sensitivity to change.

As with any self-efficacy measure, understanding the link to performance is required. Students’ self-efficacy scores could be correlated with performance during clinical placements and or community-based learning experiences. Videotaping the students’ performance would permit careful rating of the performance and facilitate feedback to the student.
Within the area of higher education and learning, how community-based learning could be used to facilitate deep learning is of interest. The complex linkage between characteristics of the learner (e.g. motivation, self-efficacy), the learning experience (e.g. community-based) and the students’ approach to learning is worthy of further study. There is evidence for linkages between motivation, self-efficacy and deep learning, however how these concepts interact to enhance learning and performance is not known. In particular, does an increase in self-efficacy within an academic context enhance a deep learning approach? If yes, are increased motivation to learn or persistence key aspects developed along with the increase in self-efficacy?

Within the area of curriculum design, examining students’ self-efficacy in professional interaction across the curriculum would show patterns in self-efficacy development. Bigg’s 3-P curriculum model using self-efficacy and student approaches to learning, along within the spiral integrated curriculum model for professional interaction presented in this thesis, require testing.

Finally, within professional practice, further understanding of expert skills in professional interaction and how they can be developed is needed.

**Personal Reflections**

What initially attracted me to participating in community-based learning activities was the potential richness of the learning for the student, combined with providing a service to the community. My participation in the three years of the community learning experiences has confirmed that the community provided a rich, complex learning environment and that a service can be provided to clients as well. This combination is a ‘win-win’ situation, if carefully implemented. Discussions with our community partners indicated that community participants have received little benefit from previous participation in educational projects. I am pleased that my team members have been astutely aware of meeting community needs as well as student needs. This balancing act requires constant attention, but the rewards are greater.

I have been inspired by the enthusiasm demonstrated by the students, clients, community organization and mentor, Dr. Sharyn Vanden Noven. My feeling is that the dedication, energy and experience that Sharyn brought to the community classroom, had a large impact on the enthusiasm of others. Students observed caring
and positive interactions among physiotherapy instructors, clients and community workers, as well as actively engaging in their own interactions. This type of role modelling and direct experience cannot be easily replicated in the university setting.

Although the community-based learning, described here, was designed and implemented by one faculty member to demonstrate that innovation can be cost-effective, conducting a practical class in a community setting can be time consuming to initiate, develop and implement. At times, I was overwhelmed with the amount of preparation for myself in the community setting, as well as with the students to ensure smooth running of the class. Running an exercise class with older adults with a range of abilities is always a challenging endeavour. Student helpers permit one-to-one assistance for some needy clients, however, issues of safety for the student and the older adult are paramount. To help our understanding of the older adults, we assessed the physical functional performance of the older adults using balance and gait measures (Berg Balance Scale, Timed Up and Go Test), measures of muscular strength (grip and quadriceps) and interview questionnaires. Obtaining baseline measures on 45 older adults was time-consuming, yet necessary to understand the mobility needs of clients in order to select appropriate exercise interventions. After the procedures were established and when grant monies were available, we employed Year III students and recent graduates to assist us with the assessment phase. In the future, training staff at the community centre to conduct some these measures would assist in their own programmes for older adults as well as the university-community collaborative programmes.

Lastly, I would like to comment on the value of the university-community partnership. Students need contact with real prospective client groups. At this time in Hong Kong, large community organizations serving people with and without disabilities still tend not to have experienced physiotherapists on staff despite their mandate and need to provide safe and effective exercise/activity programmes targeted for their different client groups. I feel the potential of this cooperative partnership is endless with benefits to student learning, faculty development, community participants and community service agencies.
References


Cutcliffe, J.R. and McKenna, H.P. (2002). When do we know that we know? Considering the truth of research findings and the craft of qualitative research. *International Journal of Nursing Studies, 39*(6), 611-618.


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Appendix 1: Student Written Feedback Following Community-based Learning Experiences (Cycle 1)

Community-based Classroom: Exercise with Older Adults

NOTE: you may hand this page in separately, you do NOT have to sign your name.

Based on this experience, how confident are you that you can interact with older adults, as a Physiotherapy student, in upcoming Physiotherapy assessment and exercise procedures? (Select one)

<table>
<thead>
<tr>
<th>Very Confident</th>
<th>More Confident</th>
<th>No Change in Confidence</th>
<th>Not Confident</th>
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</table>

Comments:

Overall assessment of your learning experience: (Select One).

A Unique Experience------------Above-------------Average-------------Below-------------No Educational Benefit for me

Average (Good) Average Benefit for me

What did you learn about older adults, in general, or working with older adults that you could not have experienced in the University laboratory working with your classmates:

Do you recommend that this 'community classroom' learning experience be continued?

_____ Yes _____ No

Overall Comments:
Appendix 2: Professional Interaction Across the Life-Span

The following is a list of individuals that you may encounter as a Student Physiotherapist. Please rate your level of confidence to interact with each category of individuals using a 10-point scale (0=not at all confident and 10=completely confident).

At this point, how confident are you that you can interact with...

(answer for each category fo individuals listed below)

... in a professional manner?

(for example, teach exercises, assess movements, take pulse rate or other measures, listen to identify clients' abilities/problems or other specific information, explain procedures, justify a particular approach.)

Rate each item from 0-10: 0 = Not at all confident.................10 = Completely confident

____ University-based educators in Physiotherapy
____ Physiotherapy Department – Clinical Educator(s)
____ Physiotherapy Department – Physiotherapists (other than Clinical Educator)
____ Physiotherapy Department – Porters, Artisans
____ Hospital-based staff – Nurses, Doctors, Occupational Therapists, Medical Social Workers
____ Hospital administration staff (e.g. patient-relations officer)
____ A small group of your classmates (not personal friends)
____ Students of other health professions

____ Infants (0-1 year)
____ Children age 1 to 6 years
____ Children with physical disabilities
____ Children with mental disabilities
____ Parents of children receiving treatment

____ Older adults (age range: 60-74 years)
____ Older adults (age range: 7–100+)
____ Adults with physical disabilities
____ Adults with mental disabilities

Comments:
Appendix 3: Frequency of Contact with Older Adults

Personal Experiences with Older People

The objectives in *Development of Motor Behavior* (RS264) and *Principles of Physiotherapy Practice* (RS263) require that you utilize a life span perspective in applying both your content knowledge and beginning-level skills. We are therefore surveying your background knowledge and experience with older people with and without disabilities.

I. Exposure to Older people (over the age of 60 years)

1. Do you *presently* have contact with older people age 60-74 years?
   - Daily  ____ Weekly  ____ Monthly  ____ Seldom  ____ Never
   If daily or weekly, please specify age and relationship:

2. In the past 5 years have you had contact with older people age 60-74 years?
   - Daily  ____ Weekly  ____ Monthly  ____ Seldom  ____ Never
   If daily or weekly, please specify age and relationship:

3. Do you *presently* have contact with older people 75 years and over?
   - Daily  ____ Weekly  ____ Monthly  ____ Seldom  ____ Never
   If daily or weekly, please specify age and relationship:

4. In the past 5 years have you had contact with older people 75 years and over?
   - Daily  ____ Weekly  ____ Monthly  ____ Seldom  ____ Never
   If daily or weekly, please specify age and relationship:

5. Have you done the following with older people (over 60 years of age) in the *past 5 years*?
   - Ate a meal?  ____ No  ____ Yes
     If yes, were you alone with older person?  ____ No  ____ Yes
     If yes, were you with a group of older people?  ____ No  ____ Yes
   - Had a conversation?  ____ No  ____ Yes
     If yes, were you alone with older person?  ____ No  ____ Yes
     If yes, were you with a group of older people?  ____ No  ____ Yes
   - Went on an outing?  ____ No  ____ Yes, If Yes, specify type of outing:
     If yes, were you alone with older person?  ____ No  ____ Yes
     If yes, were you with a group of older people?  ____ No  ____ Yes
   - Involved with a club or group for older people?  ____ No  ____ Yes
Appendix 4: Confidence in Professional Interaction with Older Adults

ANSWER THE FOLLOWING QUESTIONS BY PLACING A MARK on the scale (0-10).

Based on your past experiences how confident are you that you can ....

1. interact/communicate with an older person (age 60-74 years)?

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2. interact with an older person (60-74 years) who has a physical disability?

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3. interact with an older person (60-74 years) who has cognitive problems (e.g. difficulty participating in a conversation, intellectual problems, difficult following instructions, memory loss, confusion)?

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4. interact with an older person (60-74 years) who has emotional problems (e.g. cries a lot, gets angry easily)?

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5. interact with an older person (75 years and over)?

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Appendix 4 (cont'd)

Based on your past experiences, how confident are you that you can:

6. interact with an older person (over 75 years) who has a physical disability?

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7. interact with an older person (over 75 years) who has cognitive problems (e.g. difficulty participating in a conversation, intellectual problems, difficult following instructions, memory loss, confusion)?

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8. interact with an older person (over 75 years) who has emotional problems (e.g. cries a lot, gets angry easily)?

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Appendix 5: Revised Study Process Questionnaire (R-SPQ-2F)

This questionnaire has a number of questions about your attitudes towards your studies and your usual way of studying.

There is no right way of studying. It depends on what suits your own style and the course you are studying. It is accordingly important that you answer each question as honestly as you can. If you think your answer to a question would depend upon a subject being studied give the answer that would apply to the subject(s) most important to you.

Please circle the appropriate letter alongside the question. The letters stand for the following response:
A = this item is never or only rarely true of me
B = this item is sometimes true of me
C = this item is true of me about half the time
D = this item is frequently true of me
E = this item is always or almost always true of me

Please choose the one most appropriate response to each question. Choose the response that best fits your immediate reaction. Do not spend a long time on each item: your first reaction is probably the best one. Please answer each item.

Do not worry about projecting a good image. Your answers are CONFIDENTIAL.

1. I find that at times studying gives me a feeling of deep personal satisfaction.
2. I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied.
3. My aim is to pass the course while doing as little work as possible.
4. I only study seriously what’s given out in class or in the course outline.
5. I feel that virtually any topic can be highly interesting once I get into it.
6. I find most new topics interesting and often spend extra time trying to obtain more information about them.
7. I do not find my course very interesting so I keep my work to the minimum.
8. I learn some things by rote, going over and over them until I know them by heart even if I do not understand them.
9. I find that studying academic topics can at times be as exciting as a good novel or movie.
10. I test myself on important topics until I understand them completely.
11. I find I can get by in most assessments by memorizing key sections rather than trying to understand them.
12. I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra.
13. I work hard at my studies because I find the material interesting.
14. I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes.
15. I find it is not helpful to study topics in depth. It confuses me and wastes time, when all you need is a passing acquaintance with topics.
16. I believe that lecturers shouldn’t expect students to spend significant amounts of time studying material everyone knows won’t be examined.
17. I come to most classes with questions in mind and I want answering.
18. I make a pit of looking at most of the suggested readings that go with the lectures.
19. I see no point in learning material which is not likely to be in the examination.
20. I find the best way to pass examinations is to try to remember answers to likely questions.
Appendix 6: Kolb's Learning Style Inventory

**Learning Style Inventory** (Kolb 1985)

The Learning-Style Inventory describes the way you learn and how you deal with ideas and day-to-day situations in your life.

You will be asked to complete 12 sentences. Each has four endings. Rank the endings for each sentence according to how each one fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new. Then, using the spaces provided, rank a '4' for the sentence ending that describes how you learn best, down to a '1' for the sentence that seems least like the way you would learn. **BE SURE TO RANK ALL ENDINGS FOR EACH SENTENCE. DO NOT MAKE TIES (e.g. use 1,2,3,4 only once for each sentence).**

For example:

When I learn: __ I am happy __ I am fast __ I am logical __ I am careful

**REMEMBER:** 4 = most like you, 3 = second most like you, 2 = third most like you, 1 = least like you.

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<tr>
<th>Sentence</th>
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<tbody>
<tr>
<td>1. When I learn: I like to deal with my feelings, I like to watch and listen, I like to think about ideas, I like to be doing things.</td>
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<td>2. I learn best when: I trust my hunches and feelings, I list and watch carefully, I rely on logical thinking, I work hard to get things done.</td>
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<tr>
<td>3. When I am learning: I have strong feelings and reactions, I am quiet and reserved, I tend to reason things out, I am responsible about things.</td>
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<td>4. I learn by: feeling, watching, thinking, doing.</td>
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<td>5. When I learn: I am open to new experiences, I look at all sides of the issues, I like to analyse things, break them into their parts, I like to try things out.</td>
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<td>6. When I am learning: I am an intuitive person, I am an observing person, I am a logical person, I am an active person.</td>
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<td>7. I learn best from: personal relationships, observation, rational theories, a chance to try out and practice.</td>
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<td>8. When I learn: I feel personally involved in things, I take my time before acting, I like ideas and theories, I like to see results from my work.</td>
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<td>9. I learn best when: I rely on my feelings, I rely on my observations, I rely on my ideas, I can try things out for myself.</td>
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<tr>
<td>10. When I am learning: I am an accepting person, I am a reserved person, I am a rational person, I am a responsible person.</td>
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<tr>
<td>11. When I learn: I get involved, I like to observe, I evaluate things, I like to be active.</td>
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<tr>
<td>12. I learn best when: I am receptive and open-minded, I am careful, I analyze ideas, I am practical.</td>
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**TOTALS:**

*This data may be used for a PhD thesis. THANK-YOU for your participation.*
Appendix 7a: Focus Groups Questions

Focus Group 12 July 2000 (MMRC 7 students)

I. Opening Question -

1) Please remind me your English name and tell us why you enrolled in physiotherapy. (OMIT this session)

III. Transition Question (5-10 minutes)

In the following questions (3-5) examples of ‘interaction in a professional manner’ include activities you perform as a Physiotherapy student e.g. subjective examination, objective examination or teaching an exercise.

2) Think back to when you first entered the Physiotherapy programme (Sept 1998). How confident were you to interact/communicate with older people in a professional manner?

IV. Key Questions (research questions, 10-15 minutes per question)

3) What difficulties or challenges do you encounter (face) in the clinical setting when interacting with older people?

4) What are some of the characteristics of the most difficult type of older ‘patients’ to interact with in the clinical setting?

5) In the past 2 years, what learning experiences have best helped to improve your confidence to interact with older adults in a professional manner?

6) Compared to other university (academic) learning experiences, how did the Community-based Classroom (exercise with older adults) in Year 1 affect your confidence to communicate with older adults in a professional manner?

7) Compared to other university (academic) learning experiences, how did the Class Action Project in Year 1 affect your confidence to communicate with older adults in a professional manner?

8) Given that this learning experience requires travel time & money to go ‘off campus’ how would you feel if these experiences were no longer continued?

V. Ending Question (5 minutes)

9) 'All things considered' what recommendations do you have to improve PT students' confidence to interact with older adults?

10) How do you think your level of confidence affects your performance in clinical education?
Appendix 7b: Focus Group Questions

Focus Group 14 March 2001 (JCKRC 6 students)

- Consent Form
- Purpose of the Session: Programme/Curriculum Evaluation & Enhancement, PhD study

THEME: Characterization of Self-Efficacy to Interact with Older Adults in a Professional Manner.

'Interaction in a professional manner' includes activities you perform as a Physiotherapist or student e.g. taking a history (asking specific questions), conducting a test (ROM, MMT, pulse rate, balance scale), teaching a movement or exercise (individual or group).

I. Opening Question – (10 minutes)
   1) Please remind me your name then share with us what PROFESSIONAL INTERACTION means to you today and if this has changed since you were a First Year student i.e. Sept-Dec. 1998.

II. Transition Question (10 minutes)
   2) Think back to first semester of Year 1, to the Exercise Class in Wong Chuk Hang, Aberdeen (exercise partners with older adults) and the Home Visits & Day Camp (Class Action project). [Show pictures]. From your perspective, how valuable are these EARLY learning experiences for BEGINNING physiotherapy students?

III. Key Questions (research questions, 10 minutes per question)
   3) Has your confidence to interact with older people in a professional manner changed over the past 3 years? If yes, how? [Please describe with examples.]

   4) What learning experiences over the past 3 years have best helped to improve your confidence to interact with older adults in a professional manner? (OR what do you need to experience?)

   5) How do you think your level of confidence to interact in a professional manner affects your clinical performance?

IV. Ending Question (10 minutes)

   6) 'All things considered' what recommendations do you have to improve PT students' confidence to interact with older adults? How would you develop your confidence?
Appendix 8: Student Written Feedback Following Community-based Learning Experiences (Cycle 3)

Community-based Classroom: Exercise with Older Adults

Note: You may hand this page in separately, you do NOT have to sign your name.

1) Based on this experience, how confident are you that you can interact with older adults, as a Physiotherapy student, in upcoming Physiotherapy assessment and exercise procedures? (Select one)

<table>
<thead>
<tr>
<th>Very Confident</th>
<th>More Confident</th>
<th>No Change (Already Confident)</th>
<th>No Change (Still not Confident)</th>
<th>Not Confident</th>
</tr>
</thead>
</table>

Comments:

2) What is your current level of confidence to interact with older adults, as a Physiotherapy student, in upcoming Physiotherapy assessment and exercise procedures?

Level of confidence:

<table>
<thead>
<tr>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all Confident</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Completely Confident</td>
</tr>
<tr>
<td>Confident</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3) Overall assessment of your learning experience (Select One).

A Unique Experience----------Above--------Average----------Below-------No Educational Benefit for me

For me

Average

(Good)

Average

(Fair)

4) Do you recommend that this ‘community classroom’ learning experience be continued?

_____Yes _____No

Overall Comments:
Appendix 9: Questions for Academic Faculty

Exercise Partners with Older Adults, Wong Chuk Hang Multiservice Centre for the Elderly (Wah Kwai, Class Action Project)

1. How satisfied were you with the students’ ability to interact with the clients in a professional manner? (For example, teach exercises, assess movements, take pulse rate or other measures, listen to identify clients’ abilities/problems or other specific information, explain procedures, justify a particular approach).
   a. Very satisfied
   b. Satisfied
   c. Unsatisfied
   d. Very unsatisfied

Please provide comments:

2. What aspects of the class did you feel best-encouraged interaction between the students and clients?

3. What do you feel the students have learned in this environment that they could not have learned in the university classroom?

4. Do you feel this class should help improve students’ self-efficacy to interact with older adults in a professional manner?
   a. Yes
   b. No

   If yes, how?

   If no, why not?

5. If you were implementing the classes next year, what would you change?

6. What suggestions do you have to improve this learning experience?

7. Would you recommend that this community-based educational experience be continued?
   a. Highly recommend
   b. Recommend
   c. Do not recommend

8. What aspects of the learning experience do you feel were most beneficial to student learning?

9. What aspects of the learning experience do you feel were least beneficial to student learning?
Appendix 10: New Long Questionnaire

ALL OF THE FOLLOWING QUESTIONS RELATE TO OLDER ADULTS 60 years and older.

To respond, place a mark on the scale:

<table>
<thead>
<tr>
<th></th>
<th>Cannot</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify the main musculoskeletal problem.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Identify problems related to the client’s social or financial situation.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Identify relevant problems related to the client’s quality of life.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Identify problems related to the client’s work situation.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Get to know a client</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Identify a client’s stress or anxiety levels.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Identify problems related to the client’s functional limitations e.g. activities of daily living.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Gain relevant information from a client who is in extreme pain.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Gain relevant information from a client who wants to die.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Gain relevant information from a client who is uncooperative and angry.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Gain relevant information from a client who talks and talks about unrelated issues.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Gain relevant information from a client who has dysarthria.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Gain relevant information from a client who is depressed.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Gain relevant information from a client who cannot hear you.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Gain relevant information from a client who does not understand you and speaks a language that you do not understand.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Use language that is appropriate to the level of understanding of the client.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Express yourself in a clear, concise manner.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Teach an older person to perform a simple exercise.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Explain to you client your assessment findings.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Educate your client about his/her pathology.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Explain the client’s condition to the family.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Respond appropriately if your client asks how to treat another person’s condition.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Educate your client who thinks you are too young to be able to teach them anything.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Teach an exercise to a client who has difficulty remembering the exercise.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Educate a client who thinks that s/he knows more than you do.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Appropriately use touch to show support or concern for your client.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Comfort your client who is upset or crying.</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>
**Appendix 10 con't**

How *certain* are you, that through **professional interaction with an older client**, you CAN ....

<table>
<thead>
<tr>
<th>Development</th>
<th>Cannot</th>
<th>Moderate</th>
<th>Certain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop the trust of your client</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Show that you care about your client</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Show that you care about a client who has just refused your treatment</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Reduce the likelihood that a client will refuse your treatment</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Create a relaxed environment</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Motivate your client to perform an exercise that s/he does not want to do</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with a client who is uncooperative</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Listen attentively to your client</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Use gestures or eye contact to develop a trusting relationship with your client</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Use your tone of voice to develop a trusting relationship with your client</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate with your client about his or her feelings</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with a client who finds your treatment painful</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Adapt your communication style appropriately to your client</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Use demonstration to educate your client</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Help your client feel happy</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Help your client open-up and tell you his/her problems</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Combine verbal and movement communication to interact with your client</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Respond appropriately when your client asks you questions you don’t know the answers to</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with a cooperative client when your clinical educator is watching you</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with an uncooperative client when your clinical educator is watching you</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with a client who has complex problems and your clinical educator is watching you</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with a cooperative client when a family member is watching you</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with an uncooperative client when a family member is watching you</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with a client who has a condition you have not yet learned about</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with a client who has had surgery and there are a lot of precautions and contraindications associated with it</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with your client who has difficulty remembering the contraindications associated with recent surgery</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Communicate effectively with a client who is unconscious</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix 11: Consent Form

I, ________________________________ (name and class number) have been asked to participate in this study which is part of a project aimed to enhance curriculum development within professional and physiotherapy education. The purpose of this study is to examine the development of physiotherapy students’ self-efficacy to interact with older adults in a professional manner.

My participation is voluntary and I am aware that the group discussion will be tape-recorded. I agree to answer questions openly. I have the right to leave at any time. All personal information is kept confidential. Participants will be identified by number, (not student or class numbers), instead of name. Records will be kept in a locked cabinet. I will not be identified in any presentation related to the study.

The investigator, Ms. Cheryl Beach (tel: 1974 0599/email: cherylbeach00@hotmail.com) or Dr. David Kember in the Educational Development Centre at The Hong Kong Polytechnic University (tel: 2766 6274) will be happy to answer any questions that I may have about the study.

I agree to participate in this study. The investigator has explained the purpose of the study and we have reviewed the consent form together.

__________________________________________
Participant Date

__________________________________________
Investigator Date

__________________________________________
Witness to signing
Appendix 12: Lab Report

Aberdeen ‘Community Classroom’ – Laboratory Experience with Older Adults

Acknowledgement: This experience was made possible through the participation of professionals, staff and clients at Wong Chul Hang Multi-Service Centre for the Elderly, Aberdeen Kai-fong Welfare Association Social Service Centre.

The objectives in *Principles of Physiotherapy Practice* require that you utilize a life span perspective in applying both the principles and beginning level skills in communication, assessment and exercise / function. This report summarizes your application, in a four-hour session, of these principles and skills with older adults.

*(If you had two clients, please use #1, #2 to refer to them.)*

**REPORT of EXERCISE SESSION with OLDER ADULTS**
Wong Chuk Hang Multi-Service Centre for the Elderly

| Do you interact with older adults (>65 yrs)? | ____Daily ____Weekly ____Monthly ____Seldom |
| Client: #1 | Male | Female | Age: | Date of Session: |
| Walking Aid: | ____Yes ____No | If yes, what type? | 4 pt. Cane | Cane/Stick | Umbrella |

**Principles and Skills Utilized**

**Communication**
Did you find asking questions (interviewing) -- ____Easy or ____Difficult?
Did you find taking (sharing information) with the client -- ____Easy or ____Difficult?

A) Comment on your communication with this client in comparison to that with young adults:

Did your group write any Exercise Principles on the white board? ____Yes ____No

**What data did you document?**

| ____# Stand up-sit down / 10 seconds | ____Pulse Rate over time |
| ____Muscle strength with hand-held Dynamometer | ____Grip strength |
| ____# Repetitions/Each task | ____Pinch strength |
| ____Body Chart | ____Time/Each task |
| ____Health Status Questionnaire (SF-36) | ____Posture |
| ____Checklist of Balance Tasks | ____ |
| Other: | ____ |

**Teaching**
Types of Movement you observed or participated in: ____Active ____Active with Assistance ____Active against Resistance

Types of Contractions that you observed: ____Isometric ____Isotonic-concentric ____Isotonic-Eccentric

**Types of Feedback you used:** ____Demonstration ____Verbal Cues ____Tactile Cues

Consider your instructions to the client e.g. how to count her/his pulse in 10 sec or how to correctly perform a movement.

Did your instructions/feedback aid your client(s) in improving his/her performance? ____Yes ____No

B) Comment on your teaching approach with this client in comparison to that with young adults:
Variation of Pulse Rate over time: __ Pulse rate in sitting (#1) __ Pulse rate in sitting (#2)
Did the client's pulse rate change with increased activity? ____ (highest count #1) ____ (#2)
What is your pulse rate in sitting? _____
If you step, like your client, in place for 3 minutes, does it change? ___ Yes ___ No; ___ my pulse rate
How does your pulse rate in sitting and stepping compare to your client(s)?

C) How could you use pulse rate/heart rate to progress an exercise/activity for this client?

Observation of your client(s) in comparison to the other participants and yourself:
Range of Motion (trunk, upper & lower limbs):

Posture (head/neck/trunk, upper & lower limbs):

Willingness to Try the activities (Select one):
Enthusiastic------------------Willing to Try------------------Appeared Reluctant

Ability to Perform the Task (Select one):
Excellent Ability-----------------Good Ability-----------------Limited Ability – Cognitive or Physical?

Ability to Move Against Resistance (Select one):
Excellent Ability-----------------Good Ability-----------------Limited Ability – Cognitive or Physical?
Comment on the quality (smooth, jerky) of the client’s movements against resistance (Theraband: red<green<blue<black):

D) Based on your observations of this client, how could we improve the exercises for this person:
Flexibility exercise (any limitations for your client?// Can the client improve her/his posture with cues?)
Strengthening exercises (any priority exercises for your client?)
Endurance exercise (any need for this type of activity for your client?)

E) What did you learn about older adults, in general, or working with older adults that you could not have experienced in the university laboratory working with your classmates?
## Appendix 13: Class Action Report

**Physiotherapy Class Action Project of 1999**

*Acknowledgement:* This community-based experience was made possible through the participation of professionals, staff and clients of the Aberdeen Kai-fong Welfare Association Social Service Centre.


You are participating in this community-based project in your capacity as a future health care professional. Throughout this experience you will be practicing your observation and communication skills while carrying out your activities in a humane and caring manner. You will have the opportunity to further your understanding of the functional status of older adults in Hong Kong.

This is an **individual written report** with two parts. **Part One** relates to a summary of your observations/interactions with your client(s). **Part Two** represents your assessment of the experience.

### DUE: Saturday, December 11, 1999, 7:00pm.

Reports can be handed-in any time following the Home Visits to Dr. Vanden Noven or Ms. Beach. You may also leave your report on the designated shelf outside Dr. Vanden Noven’s office HJ521. You will receive a 1/2 of one grade deduction if you give the report to Dr. Vanden Noven after 7:00 pm on the Saturday, prior to her leaving the office. If not received by Dr. Vanden Noven or Ms. Beach until Monday, Dec. 13, one grade will be deducted. There will be a one grade reduction for each day thereafter.

Half a grade will be deducted if reports are not type written.

In this report, identify your client(s) with regards to gender, age, health status rating and life satisfaction rating (quality of life). Identify them as client #1-#4 in your report, do not use the individual’s name. For all the clients that you visited and yourself, complete the following:

<table>
<thead>
<tr>
<th>Client #1</th>
<th>male / female (circle one)</th>
<th>age: ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>How did this client rate his/her health? (circle one)</td>
<td>excellent</td>
<td>very satisfied</td>
</tr>
<tr>
<td>Quality of Life = ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall how did this client rate his/her life satisfaction?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</td>
<td>Very Dissatisfied</td>
<td></td>
</tr>
<tr>
<td>YOU: male / female (circle one)</td>
<td>age: ___</td>
<td></td>
</tr>
<tr>
<td>How do you rate your health? (circle one)</td>
<td>excellent</td>
<td>very satisfied</td>
</tr>
<tr>
<td>Quality of Life = ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall how do you rate your life satisfaction?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</td>
<td>Very Dissatisfied</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Client #2</th>
<th>male / female (circle one)</th>
<th>age: ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>How did this client rate his/her health? (circle one)</td>
<td>excellent</td>
<td>very satisfied</td>
</tr>
<tr>
<td>Quality of Life = ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall how did this client rate his/her life satisfaction?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</td>
<td>Very Dissatisfied</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Client #3</th>
<th>male / female (circle one)</th>
<th>age: ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>How did this client rate his/her health? (circle one)</td>
<td>excellent</td>
<td>very satisfied</td>
</tr>
<tr>
<td>Quality of Life = ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall how did this client rate his/her life satisfaction?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</td>
<td>Very Dissatisfied</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Client #4</th>
<th>male / female (circle one)</th>
<th>age: ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>How did this client rate his/her health? (circle one)</td>
<td>excellent</td>
<td>very satisfied</td>
</tr>
<tr>
<td>Quality of Life = ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall how did this client rate his/her life satisfaction?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%</td>
<td>Very Dissatisfied</td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**

Identify, using a * or ✓ which two (2) clients you will discuss in your report.
Appendix 13: cont’d

Background
A common goal in physiotherapy is for the patient/client to achieve the highest level of 'function'. In this context, the term 'function' refers to the whole individual rather than the improved function of a given joint or body part. Your participation in this community-based project will allow you to observe older adults. You will observe how these individuals function in a given environment.

The functional status of an individual (see attached figure) can be affected by different physical or psychosocial factors. You will be asked to comment on how your client functions in an indoor environment.

Consider four general components to an individual's functional status -- physical function, mental function, emotional function and social function. The interaction of these components within a given environment influences the individual's perception of his/her 'quality of life'. Examples of physical function = activities of daily living, walking, climbing stairs; mental function = intelligence, cognitive abilities, memory; emotional function = motivation, ability to adapt, coping with life, such as stress, anxiety, satisfaction; social function = interactions with family and community and any economic considerations.

PART ONE

1. Summarize your observations/information on your client's functional status. Present information on two of your clients as identified on the previous page. Support your evaluation with statements of evidence. [E.g. My client appeared depressed. She showed no facial expression during our talk. She did not make eye contact with either of us and mumbled her responses to my questions.]

   ➢ Mental function (as referred to above)
   ➢ Emotional function (as referred to above)
   ➢ Social function (as referred to above)
   ➢ Physical function:
     • Any activities of daily living (observed or discussed)
     • How the person moves (range of motion, speed, unsteady)
     • Current posture (in different positions)
     • Ability to vary from that posture
     • Breathing during movement and at rest
     • How the person responds to your questions or instructions
   ➢ Environment (assess the environment that your client functions in) e.g. architectural barriers, distance to stores, access/use of transportation, etc. How well does your client function in his/her environment? [E.g. client does not leave the flat without assistance of another person.]

2. How does your client refer to or describe his/her quality of life?

3. Overall Comparison
   Comment on how your identified clients compare in 'functional status' with all of the other clients who you visited. Are they similar or different?

4. Comment on what services, if any, your client is receiving. (medications, social service, etc.)

5. Did you provide any service to your client today? (e.g. assist to stand up/sit down)

6. Evaluation/recommendations of aspects of the client's condition which could be improved.
PART TWO

1. Performance of Objectives

Refer to your Year 1 Programme Outline for the Bachelor of Science (Honours) Degree in Physiotherapy.

Select five (5) objectives which this community-based experience has allowed you to achieve from the subjects of Development of Motor Behaviour (RS264), Principles of Physiotherapy Practice (RS263) and Professional Seminar (RS261). (You must select at least one objective from each subject).

For each objective you select, type out the objective in full and then discuss what specific aspects of your experience during the Home Visits allowed you to achieve this objective.

2. Discuss your perspective on aging.
Appendix 13 Cont'd

FEEDBACK

NOTE: This information will be analyzed separately, you do NOT need to write your name or class number.

Briefing Session
Community leaders from the Wong Chuk Hang Multi-service Center for the Elderly came to the university on November 30th to provide a briefing session to Year I Physiotherapy students. The briefing session was considered essential from the viewpoint of the Aberdeen Kai-fong Welfare Social Service Centre. According to their professionals, it provided a mechanism to insure that our Physiotherapy students were knowledgeable and capable of functioning in a professional and caring manner.

Did you participate in the briefing session, as required? ______ Yes ______ No
Comments:

If yes: From your viewpoint as a student in the health care professions, did the briefing session contribute to your successful performance (i.e., confidence) as a participant in the Home Visits in the following areas:

Knowledge of the task and your responsibilities: Yes / No
Guidelines on interviewing and communication skills to use with the elderly: Yes / No
Information on attitudes and caring behaviours for interacting with older adults: Yes / No

Comments for the community leaders who lead the briefing session:
Appendix 14: Walking and Talking with Older Adults Lab Report

Wah Kwai ‘Community Classroom’ – Second Laboratory Experience with Older Adults

Acknowledgement: This experience was made possible through the participation of professionals, staff and clients at Wah Kwai Day Care Centre for the Elderly, Aberdeen Kai-fong Welfare Association Social Service Centre.

The objectives of Principles of Physiotherapy Practice requires that you utilise a life span perspective in applying both the principles and beginning level skills in communication, assessment and exercise / function. This report summarises your application, in a four-hour session, of these principles and skills with older adults. (If you had two clients, please use #1, #2 to refer to them.)

REPORT of ASSESSMENT SESSION with OLDER ADULTS

Wah Kwai Day Care Centre for the Elderly

Do you interact with older adults (265 yr.)?  ____ DAILY  ____ WEEKLY  ____ MONTHLY  ____ SElDNo:

Client: #1 __ Male  ____ Female  ____ Age: ___  ____ Date of Session: ________________

#2 __ Male  ____ Female  ____ Age: ___

Walking Aid: ___Yes  ____ No  ____ If YES, what type? ___ Quadripod  ____ Canestick  ____ Umbrel

PRINCIPLES AND SKILLS UTILISED

Communication

Did you find asking questions (interviewing) -- ____ EASY  ____ DIFFICULT?

Did you find talking (sharing information) with the client -- ____ EASY  ____ DIFFICULT?

A) Which of the following assessments did you use with your client?

- General Health Status  ____ YES  ____ NO
- Vitality Plus Scale  ____ YES  ____ NO
- Folslein Mini Mental Test  ____ YES  ____ NO
- Activity Needs and Falls checklist  ____ YES  ____ NO

Did you find exchanging with the caregivers -- ____ EASY  ____ DIFFICULT?

Did you find communicating with the caregivers different than communicating with your client? ____ YES  ____ NO

What data did you document?

- Gait pattern & transitional movements observations  ____ Quads strength with dynamometer
- Vitality Plus Scale  ____ Grip strength with JAMAR
- Perceived exertion (Borg scale)  ____ Six-minute walk test
- Pain (Body Chart - VAS)  ____ Pulse rate
- General Health Status  ____ Clinical Step test
- Falls Checklist  ____ Timed Up & Go
- Abbreviated Mini Mental Test  ____ other: _____________________
Appendix 14 cont’d

Teaching

*During your interaction with the caregivers, what knowledge did you share?*

- How to prevent back injury during transfers and lifts? | YES | No
- Body mechanics | YES | No
- Exercise principles | YES | No
- Home exercise program | YES | No

Do you feel that the interaction between the students and the caregiver was mutually beneficial (i.e. each party learned something from the other)? | ___Yes | ___No

Types of feedback you used: ___Demonstration ___Verbal Cues ___Tactile Cues

*Consider your instructions to the client e.g. how to correctly perform a movement.*

Did your instructions/feedback aid your client(s) in improving his/her performance? | ___Yes | ___No

B) **Comment on your client’s perception of his/her health status.** During your interaction with your client, did you gather information that supports this perception. *Identify the client by his file number.*

C) **Comment on your client’s activity needs and risk for fall?** *Identify the client by his file number.*

D) **Comment on your client use of a walking aid** (type, is it used indoors and/or outdoors, height, which side is it used on, is it adequate or not). *Identify the client by his file number.*

Were height adjustments of the walking aid required? Why? Were they effective? Was the client comfortable with the adjustments?
Appendix 14 cont'd

Observation of your client(s) in comparison to the other participants and yourself:

**Strength**

**Sitting to standing / Standing to sitting**

Did you use an outcome measure to assess the ability of your client to stand from a sitting position and to initiate walking? If yes, which?

**Gait pattern**

During which activity did you observe your client’s gait pattern?

Comment on the static and dynamic balance of your client? Is he/she safe to walk independently?

**Willingness to participate in the activities (Select one):**

- Enthusiastic
- Willing to Try
- Appeared Reluctant

**Ability to Perform the Tasks (Select one):**

- Excellent Ability
- Good Ability
- Limited Ability
- Cognitive or Physical?

E) Based on your observations of this client, how could you improve the functional level of this person:
   - Strengthening exercises (any priority exercises for your client?)
   - Endurance exercises (any need for this type of activity for your client?)
   - Balance exercises (any limitations for your client?)

F) What did you learn about older adults, in general, or working with older adults that you had not experienced previously? *Please use back of page if required*