

Key elements for interprofessional education. Part 1: The learner, the educator and the learning context

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Abstract

This paper is the first of two that highlights key elements needed for consideration in the planning and implementation of interprofessional educational (IPE) interventions at both the pre and post-licensure qualification education levels. There is still much to be learned about the pedagogical constructs related to IPE. Part 1 of this series discusses the learning context for IPE and considers questions related to the “who, what, where, when and how” related to IPE. Through a systematic literature review that was conducted for Health Canada in its move to advance Interprofessional Education for Patient Centred Practice (IECPCP), this paper provides background information that can be helpful for those involved in an interprofessional initiative. A historical review of IPE sets the international context for this area and reflects the work that has been done and is currently being initiated and implemented to advance IPE for health professional students. Much can be learned from the literature related to the pedagogical approaches that have been tried and the issues that need to be addressed related to the learner, the educator and the learning context which this paper examines.

Keywords: *Interprofessional education, learning context, teaching strategies, patient-centred care and review.*

Interprofessional education: The international context

Internationally, the World Health Organization (WHO) has been proactive in moving interprofessional education (IPE) forward. For example, in 1973, an Expert Committee reviewing medical education saw interprofessional and traditional programs as being complementary. From this emerged a number of demonstration projects that resulted in this new approach to health professional education becoming entrenched in the WHO strategy to promote “Health for All by the year 2000” (WHO, 1978). Other international organizations such as the OECD (Organization for Economic Co-operation and Development) and the WFME (World Federation of Medical Education) adopted strategies to foster experiences in IPE. However, the degree to which these movements influenced national developments seems to differ. The greatest influence appears to be occurring in

smaller European countries (e.g., Finland, Sweden, Norway) and in developing countries (e.g., The Sudan, South Africa, Thailand) (Barr 2000).

In the United Kingdom, the emphasis on providing health care in the community led to a number of collaborative models of delivery. Through the 1970s, 80s, and 90s, many IPE initiatives were developed that covered a range of health issues. Government policies further reinforced the value of collaboration and thus the need for “shared learning” or “joint training”. The Center for the Advancement of Interprofessional Education (CAIPE) was founded in 1987 to provide a central resource to assist health professional educators in exchanging and discussing new ideas to assist them in creating new initiatives. In Australia, a number of IPE activities have been underway with the University of Adelaide taking a leadership role. The history of IPE in the United States has been marked by a succession of discrete attempts in response to specific needs in specific settings. Increasingly, networks are being established that are funded by private and public funds. Partnerships have been established that go beyond health care and use a community development model which involves a variety of disciplines in response to the needs identified by the communities. However, the lack of systematic study of both processes and outcomes related to IPE threatens the sustainability of these endeavours given government drivers of cost effectiveness and cost efficiency.

In Canada, there have been a number of initiatives supported by Health Canada related to collaborative care since the 1990s. The 2003 First Minister’s Accord on Health Care Renewal identified changing the way health care professionals are educated. Interprofessional education for collaborative patient-centred practice (IECPCP) has been identified both in the Accord and in the 2003 Federal Budget to address current and emerging health and human resource issues. It is also seen as a mechanism to ensure that health practitioners have the knowledge, skills and attitudes to practice together in an effective collaborative manner.

In order to provide advice to Health Canada on how to achieve this aim, the National Expert Committee for IECPCP was formed. The mandate of this committee includes: offering advice on current and emerging issues and trends in IECPCP and suggesting areas for further analysis; assisting in overseeing specific activities and projects; promoting this initiative and creating alliances and partnerships across disciplines and care sectors.

This paper is based upon a chapter written for the report for Health Canada (Oandasan et al., 2004), that provided a systematic review and environmental scan that examined the nature and impact of IPE. The aim of the chapter is to identify and understand the educational processes that support the development of IECPCP. The report, of which this paper amongst the others found in this supplement, serves as background information for the National Expert Committee on IECPCP in its task of promoting IECPCP in Canada.

Methodology

A search was conducted to obtain literature on competencies, attitudes, values, teaching methods, learning conditions, faculty development and training related to IPE. Due to the time constraints for completion of the systematic literature review, references from a key systematic review on IPE (Freeth et al., 2002) were used as a starting point. Because this review included primarily evaluation studies, a broader literature review in this field was necessary to capture both descriptive and evaluative references. A search was therefore conducted on Medline and CINAHL from 1990–2003 using the following search terms:

“interprofessional”, “multiprofessional”, “interdisciplinary”, “multidisciplinary” and “team”. This part of the search was combined with the following key words and phrases: “education”, “teaching methods”, “faculty development”, “attitudes” and “competency”.

A further search was also conducted in ERIC (Educational Resources Information Center) for the last 5 years (1998–2003) using the search terms described above combined with others, including, “values”, “educational environment” and “competency-based education”, “health”, “medicine”, “allied health occupations”. Appropriate wildcards were used in the searching to account for plurals and variations in wording.

In addition, a manual search was undertaken as well as a search for articles from the reference lists of papers. Helpfully, while the literature review was in progress, colleagues from Canada, the United Kingdom and the United States sent references for inclusion in the review. These included grey literature, published papers and articles yet to be published. These contributions were of great value.

After reading each of the articles, they were subdivided and arranged, according to their contents, in a number of themes, such as: “terminology”, “enablers/barriers to IPE”, “IPE competencies” and “attitudes, values, philosophies”. These themes are used, in the following sections of the paper, to provide an insight into the range of key issues reported by the IPE literature in relation to the learner, the educator and the learning context.

Towards a common language

One of the first things the literature reveals is that in bringing individuals together from different health backgrounds to participate in IPE, one needs to take account of their own understandings of interprofessionalism, teamwork and collaboration. Indeed, the literature reflects the notion that there are many terms in IPE, many of which are used interchangeably.

Using the suffixes “-Professional” vs. “-Disciplinary”

The term “discipline” is defined as a “subject that is taught” or a “field of study” whereas “profession” is described as “a calling requiring specialized knowledge and often long and intensive academic preparation” (Neufeldt, 1990). In general, there is an international movement towards the use of the suffix “-professional” in use in the IPE literature. It is argued by some that this movement has developed because of the need for clarity. In a field like medicine, one may have multiple disciplines within one profession. For example, it is not unheard of for a Faculty of Medicine to mount an interdisciplinary initiative inviting only physicians from different fields like internal medicine, psychiatry, and family medicine. By using the suffix of “-professional” in an “interprofessional” education initiative, it makes it clear that individuals from different health professions are included. Yet this suffix may exclude other health care practitioners (e.g., Native Healers, acupuncturists, massage therapists) from participating in an IPE initiative.

Using the prefixes “multi” vs. “inter” vs. “trans”

The prefixes of “multi” and “inter” are often used interchangeably with the suffixes listed above. “Multi-” can refer to partners working *independently* towards a purpose whereas “inter” implies a partnership where members from different domains work *collaboratively* towards a common purpose (MacIntosh & McCormack, 2001). “Trans” is another prefix that has been used commonly, although with less agreement than the “multi” and “inter”

prefixes. For example, some authors regard trans-disciplinary teams as those characterized by role blurring, where professionals undertake tasks outside their normal professional roles (Hall & Weaver, 2001). In contrast, others see trans-disciplinary teams as *interdisciplinary teams* that are functioning with high levels of interprofessional synergy (e.g., Connolly, 1995).

For the purposes of ease and clarity within this paper we use the following terms:

- (a) *Interprofessional-education (IPE)*: “occasions when two or more professions learn from and about each other to improve collaboration and the quality of care” (CAIPE, 1997 revised).
- (b) *Collaborative patient-centred practice*: “is designed to promote the active participation of each discipline in patient care. It enhances patient and family centred goals and values, provides mechanisms for continuous communication among caregivers, and optimizes staff participation in clinical decision making within and across disciplines fostering respect for disciplinary contributions of all professionals” (Health Canada, 2001).
- (c) *Pre-licensure/post-licensure education*: “pre-licensure” education occurs while a student is in their formal years of learning, before receiving a license to practice independently. “Post-licensure” education denotes education that occurs once a health professional is practicing independently. It often takes the form of continuing professional development. It also would include graduate education (e.g., Masters of Nursing or Masters of Social Work).
- (d) *Patient/client/service user*: are all terms used interchangeably in the literature. Usage is often defined by specific health professionals and their traditions and perspectives related to those of whom they provide health care. The term “patient” has been used more traditionally than term “client” or “service user”. These latter terms acknowledge issues of autonomy by individuals who are consumers of health care services. The authors respect the use of these terms and will use them interchangeably within this paper.

A spectrum of learning with others

Harden (1998) introduced the notion of a spectrum of learning within a health professional’s educational programme. On the one hand, there are profession-specific competencies that must be learned and therefore a *uni-professional* educational strategy would be the best method of choice to learn these competencies. *Uniprofessional learning* occurs when students learn within their own specific health professional programs with minimal contact with other students. This form of learning is the one that has been traditionally provided to health professionals.

Learning to become a collaborative practitioner demands interprofessional interaction (see CAIPE definition). There may be times, however, when it is more advantageous to use a *multi-professional* approach. *Multi-professional learning* occurs when students are brought together, to learn in parallel. They may work on or try to solve a specific problem but they do so within their own profession-specific paradigm.

In choosing whether to use a uni-, multi- or interprofessional learning strategy, educators must consider both the goals of the curriculum and the context of learning including: the phases/stages of education, the setting, the participants, the learning approach, and the topics or subjects to be taught (Harden, 1998; Johnston & Banks, 2000). While the primary aim of this paper is to consider the factors that relate to utilizing an interprofessional learning

approach, we acknowledge that there is a role for other learning strategies (uni-, multi- or trans-) given the specific goals and/or context of the educational intervention.

Learning and teaching issues

In considering the range of learning and teaching issues connected with IPE, educators are faced with a number of key questions which are discussed in this paper:

- How can theories inform the development of teaching and learning strategies?
- What teaching and learning strategies can be used?
- What types of learning settings can be used?
- What are the competencies (knowledge, skills and attitudes) that need to be taught?
- What type of role should faculty adopt and what type of faculty development is needed?
- When should IPE be introduced into health professional education programmes?

Theories that inform teaching and learning strategies

This section explores the various theoretical approaches that can be employed to inform the use of teaching and learning strategies for IPE.

Using educational theory

There is a strong call for educators to ground their IPE initiatives with educational constructs (Hall & Weaver, 2001). Educational theory can influence the types of teaching strategies that can be used and influence the success of initiatives. Classic theories of adult education (Knowles, 1980), reflection on practice (Schön, 1987), problem-based learning (Barrows & Tamblin, 1980) and experiential learning (Kolb, 1984) are examples of approaches that should be considered.

In addition, the use of teamwork models can contribute to the use of teaching strategies on an IPE initiative (e.g., Gilbert et al., 2000). An articulation with theory and its relationship to a teaching strategy can enhance the development, implementation and evaluation of an IPE initiative. Although all of these educational theories are important a few are highlighted to illustrate ways in which competencies, such as those described by Barr (1998) later in the paper, and teaching strategies can be blended to create pedagogically informed curricula.

Creating a non-threatening learning environment

For Knowles (1980) a key requirement for effective adult learning was the creation of a non-threatening learning environment in which students felt psychologically safe to express themselves openly. One helpful approach to creating a non-threatening learning environment has been the use of “contact hypothesis” (Tajfel, 1981). Contact hypothesis maintains that poor attitudes held by members of different (and/or opposing) groups can be improved through positive contact. According to Hewstone and Brown (1986), for contact hypothesis to operate successfully (i.e., to increase positive attitudes between individuals) a number of conditions are needed. These conditions include: institutional support, equal status of participants, positive expectations, a cooperative atmosphere, successful joint work, a concern for and understanding of differences and similarities, a perception that members of the other group are typical. In applying contact hypothesis, Carpenter (1995) also argued

that the development of positive attitudes requires students to be able to express themselves openly, share their opinions in a safe environment and be given time to reflect on their role in a team of equals. Research has indicated that using contact hypothesis to create a positive learning atmosphere can result in an improvement of attitudes of students who learn together on an interprofessional basis (e.g., Carpenter & Hewstone, 1996).

Developing reflective practitioners

Reflection is a key component of IPE teaching strategies (e.g., Clear 1994, Reeves & Freeth 2002, D'Amour et al., 2004). Schön's (1987) theory of reflective practice calls for health care practitioners to address the "swampy zones of practice" where "confusing problems which defy technical solutions" often lie (p. 3). IPE could be easily thought of as a "swampy zone". Students must grapple with a number of complex issues related to hierarchy, role blurring, leadership, decision-making, communication, respect – to name but a few. There are no easy answers to these concepts. Reflection offers a useful way forward though. Schön (1987) recommends that students need to be immersed in a practicum experience where they can engage in "reflection-in-action". This serves to reshape what they are doing while they are actually doing it. Schön also recommends opportunities to engage in "reflection-on-action" to look back on experiences and come to an understanding of how outcomes have come to pass.

Through self and group reflective exercises, within safe learning environments, students may begin to develop the reflective skills necessary for developing an appreciation and understanding of each other's roles, their unique backgrounds and the professional perspectives on clinical decision making that ensures each profession is distinctive (Drinka & Clark, 2000). Reflection can only occur if opportunities are provided for students that expose students to issues that they must grapple with. Such opportunities should be based on subject matter that relates to learners' immediate interests and concerns, as this has been shown to increase learner motivation (Schwenk & Whitman, 1987).

Creating relevant learning experiences

Offering students with relevant learning experiences is another key element of Knowles' (1980) theory of adult learning. Consequently, it is not surprising that within the literature, learners' reactions to IPE are more favorable when they see a direct relevance between their educational experiences and their current or future practices (e.g., Parsell & Bligh, 1998; Pirrie et al., 1998). Hence, many IPE initiatives employ learning approaches that are based in, or have a substantial part of the course based in, clinical practice (e.g., Van der Horst et al., 1995, Reeves & Freeth, 2002). Where IPE is located within higher education institutions, at the pre-licensure level, one often finds that these courses incorporate some form of clinical input, whether it is a clinical placement (Kipp & Pimlott, 2003; Wahlström & Sandén, 1998), the use of a simulated clinical environment (Freeth & Nicol, 1998) or meeting service users to talk about their health needs (Reeves, 2000). Hence the type of setting can influence the motivation of learners to engage in IPE activities.

There are three other issues related to relevance: perceived status, elective status and course credit. First, the perceived status of IPE amongst health professional practitioners and students may be an important consideration. Studies have shown that students sometimes feel that interprofessional learning was not as important as their profession-specific learning experiences (e.g., Dienst & Byl, 1981; Fallsberg & Wijma, 1999). Eliciting public support from professional leaders (Funnell et al., 1992) and recruiting high quality

tutors to deliver the education (Loxley, 1997) have been suggested as ways to improve the status of IPE. The second issue for consideration is whether an IPE initiative should be mandatory or elective. As an elective course, it gives the message that the material to be covered is not essential for health professionals to learn. Some authors would argue, however, that choice should be given to engage in IPE initiatives, as it will ensure that those participating will be more “interested and committed” (Lary et al., 1997, p. 68). The third issue relates to course credit. If IPE experiences are not assessed in a way that gives equal weight to other uni-professional courses, relevance again is often questioned around why health professionals and/or students should participate in IPE and motivation to learn may dwindle (e.g., Reeves, 2000).

In clinical practice settings, with post-licensure practitioners, introducing IPE initiatives can often be regarded with suspicion (Falconer et al., 1993). This is unsurprising, when one realizes that IPE is generally introduced into these environments to change and enhance *present* practice. It may therefore be assumed that current practices are not adequate. This may result in resistance to IPE. In addition, many practitioners currently undertake IPE on an elective basis. Consequently, there may be no explicit incentive for practitioners to participate in an IPE initiative, unlike pre-licensure students who may require credits to graduate. Nevertheless, resistance may also occur among pre-licensure students. For example, as IPE initiatives aim to improve collaborative practice for the future, students could perceive these aims as too remote for them given the focus on learning uni-professional content-specific knowledge and skills in their assessment procedures.

Employing a range of teaching and learning strategies

This section examines the different strategies that are employed in the delivery of IPE. In particular, it considers the issues related to small group learning (group balance, size and stability).

Small group learning. For Barr (2002) effective teaching strategies for IPE employs interactive methods such as case-based learning (Woodhouse & Pengally, 1992); observation-based learning (Likierman, 1997) and problem-based learning (Barrows & Tamblin, 1980). All these strategies use small group learning formats. Whenever a small group convenes, a learning environment develops which has the potential for participants to share tasks, which enable them to learn from one another (a further principle of adult learning) to help raise their self-awareness (Tiberius, 1990).

In devising IPE initiatives, whether utilizing a case or problem-based approach, simulated or real patients, the clinical problem that arises from the learning exercise is the vector through which learners come to an understanding of how to work together. Regardless of whether using a theoretical case or a real life case, there are some specific lessons using small group learning which can be helpful for IPE initiatives. The factors which need to be considered include: group balance, group mix and group stability.

(a) *Group balance.* For interactive learning to take place there is a need to attain and maintain a ‘balance’ within learning groups. By doing so, it is argued that one can promote good interprofessional interaction (e.g., Funnell et al., 1992; Gill & Ling, 1995). For these authors, a crucial element in achieving group balance is to ensure that there is an equal mix of professionals. It is also argued that if the group make-up is skewed too heavily in favour of one profession, it will inhibit interaction, as the larger professional group can dominate

(Funnell et al., 1992; Gill & Ling 1995). In post-licensure educational initiatives, for example, it is difficult to group balance. Often, within the clinical practice setting there a disproportionate number of health professionals working together in a team. For example, on the hospital ward there may be more nurses and physicians compared to pharmacists and social workers.

(b) *Group size.* For effective learning to occur, Gill & Ling (1995) recommend that a learning group should consist of around 8–10 members. Where groups are over 10 members, problems related to poorer quality interactions can be encountered (e.g., Hughes & Lucas, 1997).

Looking more widely at the literature, one can see that IPE initiatives generally report group sizes of between 5–10 learners (e.g., DePoy et al., 1997; Freeth & Nicol, 1998; Reeves 2000). Indeed, on occasions, IPE course provide opportunities for dyads of learners to work together (Green et al., 1996; Nash & Hoy, 1993; Way & Jones, 1994). Nevertheless, fiscal restraints may cause difficulties in creating such small group learning formats (e.g. Barr, 1994; Miller et al., 1999).

(c) *Group stability.* Interaction is enhanced if learners work together within a group where there is stable membership with little “turnover” in terms of established members leaving and new ones joining (Loxley, 1980; Forbes & Fitzsimons, 1993). From the literature this issue can be especially difficult to achieve for post-licensure IPE activities. For example, when an IPE course is conducted over a number of weeks, workloads may deter practitioners from attending and hence are disruptive to group stability (e.g., Hart & Fletcher, 1999; Freeth et al., 2000). For learners undertaking full-time pre-licensure education, effective timetabling across professional courses is the key to creating group stability. However, discussions related to small group learning assume that this format of learning can be easily established, particularly in the pre-licensure years. Part 2 of this paper reveals how logistical problems represent the most difficult barriers in implementing IPE.

Exploring learning settings for interprofessional education

As discussed above (see Creating relevant learning experiences), both pre-licensure and post-licensure IPE initiatives commonly use clinical settings for their learning activities. The literature gathered for this review revealed that, the most common clinical settings that have incorporated information about IPE initiatives fall within the fields of:

- Geriatrics (e.g., Drinka & Clark, 2000; Hyer et al., 2000),
- Primary health care (e.g., Long, 1996; Way et al., 2001),
- Rural medicine (e.g., Connolly, 1995; McNair et al., 2001),
- Rehabilitation medicine (e.g., Wahlström & Sandén, 1998; Reeves & Freeth 2002).¹

A review by Zwarenstein et al. (2004) indicated that there is evidence to show that collaborative practice improves patient outcomes in the following areas: substance abuse, sexually transmitted infection screening, adult immunization, geriatric evaluation and management, and acute care for abused women in the emergency room. These might be areas where future IPE initiative could therefore be located.

Indeed, finding models of collaborative practices in both hospital and community health settings will be important for the future development of IPE. D’Amour et al. (2004) provide

models which can help find and develop collaborative practice settings that can be used to train health professional learners by employing the determinants and processes found in their empirical work.

Informal settings. In addition to the IPE that takes place in formal clinical settings, a number of papers have stressed the importance of informal learning (i.e., learning that occurs outside the formal curriculum) in creating collaborative teams of learners (Freeth & Nicol, 1998; Green et al., 1996; Howkins & Allison, 1997). Indeed, this factor appears to have relevance for pre-licensure IPE, as it may have an impact on changing professional students' socialization processes (Erkel et al., 1995; Salvatori & Berry, 2003). (We discuss this issue later in the paper).

Pryce and Reeves (1997) found that medical, nursing and dental students continued to discuss aspects of their learning whilst socializing together after their formal education was completed. Time in the local cafeteria or time together car-pooling can be useful settings for sharing informal experiences among learners (Casto, 1994; LaSala et al., 1997). It may be important to set aside time in the structured learning environment in order to create informal learning opportunities.

Community settings. The literature also revealed IPE initiatives where health professional learners, particularly those in the early years of their education, are exposed to service-learning activities using a community-service model. Service-learning is described as a structured learning experience where students provide direct community service but also learn about the context in which the service is provided and understand the connection between this service and their academic coursework (Seifer, 1998). Service-learning has been able to meet the needs of both the community and those of the students, through structured educational opportunities that promote uni-professional and interprofessional learning objectives (e.g., Lough et al., 1996; Russell & Hymans, 1999). The notions of community health and health promotion are topics that seem to cross health professional education programs. As a result, there is an opportunity to introduce ways of having students learn together while meeting social accountability responsibilities for higher education institutions (Health Canada, 2001).

Examining the nature of 'what' is it that should be taught

This section considers the issue of what should be taught to learners during their IPE programs. It specifically explores the nature of curriculum goals and the range of competencies required to collaborate in an effective manner.

Curriculum goals. For Harden (1998), if the goal of IPE is to teach collaborative practice, then, the content must be on interdisciplinary knowledge, skills and attitudes. He maintains that one must not confuse teaching medical content foci (or any other profession specific content) with the primary goals of collaborative practice. In essence, health professional students may be brought together to study about HIV management, but unless they are learning "how to work together" in the management of HIV they will be learning in parallel. This is a classic example of multi-professional learning. When students use a topic, like HIV management, as a vector to learn how to work in synergy with one another, they are engaged in interprofessional learning. The primary goal of IPE is therefore to develop students who have the knowledge, skills and attitudes to become collaborative practitioners who work together in an effective collaborative fashion.

Collaborative competencies. It is useful to consider what definitions are being used by health professions' accreditation bodies to describe the teaching of roles related to teamwork and collaboration. Using the definition of collaboration as "an interprofessional process of communication and decision making that enables the separate and shared knowledge and skills of care providers to synergistically influence the client/patient care provided" (Way et al., 2001), we searched for what expectations accreditation bodies for medical education programs had in Canada for teaching the role of collaborator to offer an example into this issue.

There are two accreditation bodies for medical training programs: The College of Family Physicians of Canada (CFPC) and The Royal College of Physicians and Surgeons of Canada (RCPSC). In the CFPC's Accreditation Standards for Residency Programs (College of Family Physicians of Canada 2002, p. 21) it describes collaborator-like competencies related to having "knowledge of and willing to draw upon the community's resources including medical consultants, health professionals and community agencies" (p. 21). With respect to competencies for caring of the elderly, it states that residents "should learn to be effective team members by participating in multidisciplinary geriatric teams" (p. 19).

The RCPSC have identified that all of their students must demonstrate that they are competent in carrying out the role of the "Physician as Collaborator" before they complete their residency programs (The Royal College of Physicians and Surgeons of Canada, 2000). The role of the "Physician as Collaborator" is one of seven roles for which specialists must demonstrate competency. To be competent as a "Collaborator" the specialist should be able to:

Effectively consult with other physicians and health care professionals [implying the development of management plans] in partnership with the patient and care providers. [The specialist] recognizes the roles and expertise of the other individuals involved and explicitly integrates the opinions of the patient and caregivers into management plans" (The Royal College of Physicians and Surgeons of Canada, 2000, p. 6).

The definitions and descriptions of competencies related to the notion of collaboration by educational accreditation bodies are important as they drive educational objectives and curriculum development. In our review, other than medicine, it was difficult to find specifically defined competencies related to collaboration amongst other health professional educational accreditation bodies in Canada. Whether or not collaborator competencies exist among them and whether or not those who do list collaborator competencies define them appropriately, is questionable. When we are able to define the competencies more definitively, we will be able to teach and evaluate this construct more successfully.

The literature provides a good source of information to define the types of competencies that may be required of health professionals to work collaboratively. For example, Way et al. (2001) in their work with physicians and nurse practitioners found that there were seven essential elements which are required for successful collaborative practice: cooperation, assertiveness, responsibility/accountability, autonomy, communication, co-ordination, mutual trust and respect.

Using a systematic review of the teamwork literature, D'Amour et al. (2004) describe key determinants for collaborative practice involving team members sharing:

- Knowledge of each other's roles;
- Good communication including negotiation skills;
- A willingness to work together;

- Trust related to self-competence and competence in other's abilities;
- Mutual respect implying knowing other health professionals and their contributions to patient care.

Hall and Weaver (2001) effectively discuss content specific issues for IPE, stating that students should learn issues related to professional role demarcation vs. role blurring, group skills (forming, storming norming and performing), communication skills, conflict resolution skills and leadership skills.

Barr (1998) outlines interprofessional education competencies highlighting specific knowledge, skills and attitudes (see Box 1). Many of the content specific areas relate to the elements described above from the literature. In relation to knowledge, most were related to an understanding of one's own professional role and the professional roles of others. Skills were related to methods of working with other health professionals, resolving conflict and providing patient care. Respect, tolerance and the willingness to work with others were attitudinal competencies.

It is incumbent upon health professional educators to determine whether IPE competencies are competencies that all health professional students must share. In developing interprofessional initiatives across health professional programs, one might argue that the discussion of competencies for students should be shared amongst all health professional faculties, licensing, and certification and accreditation bodies involved. This approach has been taken by the Institute of Medicine (IOM) in the United States, which brought together health professionals, educators, consumers, policy makers, regulators and students to meet at a Health Professions Summit in June of 2002 (Greiner, 2003). During the Summit participants developed a core set of competency requirements in teamwork for health professionals in training and for educational programs to teach students the knowledge and skills required to work together more effectively. In addition to the requirements for working within teams, the participants in the Summit identified the following four competencies that should be mastered by all health professional students: patient centred care, evidence-based practice, quality improvement, and informatics.

The move towards competency-based IPE is clearly underway. Its shape will be determined by the context and the educational leaders who bring forth the competencies they want their students to adopt into practice. How these are taught depends upon a number of factors embedded within the context of learning for health professional education

Box 1. Collaborative competencies (amended from Barr, 1998, p. 181)

- Describe one's roles and responsibilities clearly to other professions.
- Recognize and observe the constraints of one's role, responsibilities and competence, yet perceive needs in a wider framework.
- Recognize and respect the roles, responsibilities and competence of other professions in relation to one's own.
- Work with other professions to effect change and resolve conflict in the provision of care and treatment.
- Work with others to assess, plan, provide and review care for individual patients.
- Tolerate differences, misunderstandings and shortcomings in other professions.
- Facilitate interprofessional case conferences, team meetings, etc.
- Enter into interdependent relationships with other professions.

programs. It is through careful consideration of all of these factors that the best pedagogical approach to teaching IPE can be developed.

The role of faculty

Faculty (e.g., teachers, tutors) play a key role in creating an environment that is supportive of the goals for IPE and indeed can act as role models for trainees (Gill & Ling, 1995; Waugaman 1994; Parsell & Bligh, 1998). Writing from a medical perspective, Lingard et al. (2002) noted that for surgical resident learners to develop a sense of their professional roles, they echo “the surgical community’s prominent discourse patterns [...] as a way of advertising community membership: ‘I walk and talk like you, therefore I am worthy of belonging’”. In relation to IPE, the perceived status or importance of an interprofessional initiative can be negatively affected if faculty do not ‘walk the talk’ (Falconer et al., 1993; Mathias & Thompson, 1997; Graham & Wealthall, 1999). The implications for this process of professional socialization, through discourse role modeling, needs to be reflected upon by health educators, particularly as discussions that do relate to negative opinions about other health professionals may be overheard by students in informal learning settings such as cafeterias or hallways.

The interprofessional facilitator. In IPE, the traditional notion of the ‘expert teacher’ needs to be replaced by that of a “facilitator” (Fox, 1994) or “coach” (Schön, 1987). Instead of “teaching” to learners, facilitators need to “work with” learners. This approach is advocated within adult learning theory (Knowles, 1980). Two issues related to facilitation are worthy of discussion: facilitation strategies and facilitator preparation.

The role of the interprofessional facilitator is regarded as pivotal in the IPE literature (e.g., Barr, 1994; Parsell & Bligh, 1998; Cleghorn & Baker, 2000). As Barr (1996, p. 244) argues:

[The interprofessional facilitator needs to be] attuned to the dynamics of interprofessional learning, skilled in optimizing learning opportunities, valuing the distinctive experience and expertise which each of the participating professions brings.

It is argued that in order to positively affect interaction between learners, facilitators need to pay attention to facets of facilitation that involve both team formation and team maintenance. In doing so, it is argued that the opportunities for enhancing the knowledge and skills for collaboration can be maximized (e.g., Headrick et al., 1998; Parsell & Bligh, 1998). Facilitators must be ready to encounter interprofessional friction between learners when they are working together (Hammick, 1998). It is felt that problems can arise between learners particularly over ‘sensitive’ areas such as a misunderstanding over professional roles. Offering more autonomy to groups during their learning can help to optimize good interaction between learners. This allows for the development of self-directed learning opportunities, particularly if the group has a mature system of facilitating their own discussions (Thomas, 1995). This method works particularly well for post-licensure practitioners (e.g., Howkins & Allison, 1997). However, the literature offers little in the way of empirical accounts of the effectiveness of these facilitator approaches, consequently there is a need for research into which facilitation methods work best.

In considering the type of preparation for facilitators, the IPE literature again falls short. Although a number of authors stress the need for good interprofessional facilitation, little is offered in terms of suggestions which could actually inform potential facilitators. Much of the literature, although sparse, states that facilitators should have knowledge and experience

of facilitating small groups and working in an interprofessional fashion (e.g., Perkins & Tryssenaar, 1994; Funnell, 1995; Lary et al., 1997). Some authors also state it is important that facilitators understand issues of power and hierarchy which are connected to the everyday practice of the health care teams (Thomas, 1995; Miller et al., 1999). Therefore it seems that good facilitator preparation is central to the success of an interprofessional initiative but it is not yet known what type of preparation is needed.

Introducing interprofessional education

Within the literature there has been much debate about when to introduce IPE into the educational programs of health professionals. One recommendation has been that it should take place in the early phases of their pre-licensure education – within the first two years (Horak et al., 1998; Leaviss, 2000). For these authors, introducing IPE at this point means that the development of negative stereotypes and attitudes of other health professionals (that are difficult to revert) should never develop in the first place. Nevertheless, many students do enter their health professional programs with such stereotypes (Tunstall-Pedoe et al., 2003). Despite this, encouragingly, it has been found that learners early in their educational programs are ready and willing to engage in interprofessional learning activities (Hind et al., 2003). Research has also found that attitudes can be changed in the later stages of a students' pre-licensure program (e.g., Carpenter & Hewstone, 1996). One of the main arguments for introducing IPE early in a students' education is that it can effect how they come to know other professionals and relate to them through the development of positive attitudes and behaviours. Indeed, if there is a willingness to learn together early in their professional education, then perhaps this too is a reason to capitalize on initiating IPE early on.

Counter-arguments have been made that IPE is better placed to occur later in a learner's education. Proponents of this approach feel that individuals must first be secure in their professional roles before they can function effectively as team members (e.g., Petrie, 1976; Parsell & Bligh, 1998). In thinking about an educational session where senior students may be involved, one can see that if a particular student is unable to contribute to the problem for which the group of learners has been tasked, it could potentially reinforce negative stereotypes of the other health professions. Consequently, being confident in sharing the knowledge and skills of one's profession may be undermined. The notion of involving senior level students may not be as clear cut as it first appears. In a recent study with senior students from six health professions, a variation was found between students who had had significant clinical exposure in their training versus those with less exposure. Despite being at similar stage of their education, differences emerged in relation to the types of clinical training they had undertaken (Oandasan et al., 2003). These findings suggest that the introduction of IPE for senior students requires much thought and careful planning.

Harden's (1998) notion of a spectrum of learning is being adopted by movements such as the New Generation Project in the United Kingdom where students from a number professions including medicine, nursing, occupational therapy, physiotherapy and radiography have begun sharing learning experiences in their first years of pre-licensure (undergraduate) education (University of Southampton, 2003). In this project, students are exposed to the traditional uni-professional models of learning to gain specific health profession competencies. In addition, they are given opportunities for shared learning using multiprofessional and interprofessional learning strategies based in clinical or service settings in the latter years of their courses. Course content and goals reflect the need to reduce the development of negative stereotypes early in their education, while ensuring role

identification and confidence are developed before introducing IPE initiatives to students later in their professional programs.

The notion of a continuum of learning, with the introduction of different types of shared learning opportunities using uni-, multi- or interprofessional models may be one way of considering the age-old question, “When should IPE be introduced?” Let us move beyond this question and refine it to ask:

- What are the goals we are trying to achieve in having students learn together?
- Based upon these goals, when should we introduce the learning to students?
- What strategy of learning (uni/multi/inter/trans-professional learning strategies) should be used to accomplish these goals?

Post-licensure interprofessional education

Although most of the discussion to this point seems to relate primarily to students in their pre-licensure education, attention also needs to be focused on the IPE that takes place in post-licensure settings. Indeed, findings from a review of IPE evaluations (Freeth et al., 2002) revealed 76% of the 217 articles that qualified for inclusion in the review were located in post-licensure settings, compared to only 24% being located in pre-licensure settings. This finding implies that either a significantly lower number of initiatives are being developed at the pre-licensure level, or the evaluations of these initiatives are not being undertaken. The latter was the more likely conclusion, as was noted by Hammick (2000), and this will be discussed further in Part 2 of this paper.

At the post-licensure level, according to the findings of Freeth et al. (2002), these articles described IPE in which professionals engaged in quality improvement activities and staff development activities (e.g., workshops, short-courses or problem-solving groups). These findings reveal that a range of different types of educational initiatives can be used with post-licensure for health professionals in practice.

In relation to our earlier discussion on curriculum goals, if the goal of post-licensure IPE is to teach collaborative competencies, then the content should be focused on enhancing interprofessional knowledge, skills and attitudes that can affect the way health professionals practice together. Therefore, different professionals may be brought together to learn how to improve their management of congestive heart failure using the latest clinical guideline – an activity that may be classified as (multiprofessional) continuing education. However, when these professionals come together to learn *how each can contribute and work together with others* in the management of congestive heart failure in order to develop new ways of collaborating in improving patient care, herein lies the difference between multiprofessional continuing education and (interprofessional) team development. In the latter, there is a requirement to understand different roles, a willingness to incorporate other professionals in the management of patient care and mutual respect/trust to ensure that collaborative working relationships can be fostered. These types of “interactional determinants” described by D’Amour et al., (2004) can optimize collaborative practice. If these determinants are not in place, IPE has an important role in helping practitioners enhance their knowledge, skills and attitudes to enable them to work together in an effective collaborative manner.

Concluding comments

The “recipe” for IPE is interesting at this juncture of time. We know many of the ingredients that are needed, but may not be sure how best to mix them together to create

effective IPE. Part 1 of this paper has offered an overview of a range of issues related to the learner, the educator and the learning context in relation to IPE. There is much more to learn. In terms of future directions, we offer a few more questions that should be answered during the development of any new IPE initiatives. The questions are meant to provoke further discussion to advance IECPCP and its understanding:

- Is there an expectation that all health professional students share the same collaborative competencies?
- Is there a common definition amongst all health professional training programs about the competencies related to collaboration?
- Is it feasible to introduce a spectrum of learning opportunities for health professional trainees during their health professional programs to include uni-, multi- and inter professional educational strategies?
- Are we aware of best practices that are in existence for collaborative practices within our own health care communities?
- Are we optimizing our opportunities to find and utilize these collaborative practice ideal settings for learners?
- What opportunities exist for using service-learning as a way to teach interprofessional education?
- How can we develop ways to improve our understanding of methods of facilitation and facilitation preparation through faculty development?

Part 2 of this paper begins to address the challenges that educators face in implementing IPE curricula and the key factors for its success. It also considers the need for sound evaluation of any IPE initiative to advance the field and ensure we learn from each other in order to teach how to work together with each other.

Note

1 The citations mentioned are meant to provide examples of references from the settings listed but are no means representative of all the articles that have been written within each of these settings. The authors recognize that there are other settings where IPE has been situated as well.

References

- Barr, H. (1994). NVQs and their implications for interprofessional education. In A. Leathard (Ed.), *Going interprofessional: Working together in health and welfare*. London: Routledge.
- Barr, H. (1996). Ends and means in interprofessional education: towards a typology. *Education for Health, 9*, 341–352.
- Barr, H. (1998). Competent to collaborate: Towards a competency-based model for interprofessional education. *Journal of Interprofessional Care, 12*, 181–187.
- Barr, H. (2000). *Interprofessional education 1997–2000: A review*. London: CAIPE.
- Barr, H. (2002). *Interprofessional education: Today, yesterday and tomorrow*. London: LTSN.
- Barrows, H. S., & Tamblyn, R. M. (1980). *Problem based learning*. New York: Springer Publications.
- CAIPE (1997). *Interprofessional education—A definition*. London: Centre for the Advancement of Interprofessional Education.
- Carpenter, J. (1995). Implementing community care. In K. Soothill, L. Mackay, & C. Webb. (Eds.), *Interprofessional relations in health care* (pp. 75–87). London: Edward Arnold.
- Carpenter, J., & Hewstone, M. (1996). Shared learning for doctors and social workers: Evaluation of a programme. *British Journal of Social Work, 26*, 239–257.
- Casto, M. (1994). Education for interprofessional practice. In M. Julia (Ed.), *Interprofessional care and collaborative practice*. Belmont: Brooks/Cole.

- Clark, P. G. (1994). Learning on interdisciplinary gerontological teams: Instructional concepts and methods. *Educational Gerontology, 20*, 349–364.
- Cleghorn, G., & Baker, G. (2000). What faculty need to learn about improvement and how to teach it to others. *Journal of Interprofessional Care, 14*, 147–159.
- Connolly, P. (1995). Transdisciplinary collaboration of academia and practice in the area of serious mental illness. *Australian and New Zealand Journal of Mental Health Nursing, 4*, 168–180.
- D'Amour, D., Beaulieu, M. D., San Martín Rodríguez, L., & Ferrada-Videla, M. (2004). Chapter 3: Key elements of collaborative practice & frameworks: Conceptual basis for interdisciplinary practice. In I. Oandasan, D. D'Amour, M. Zwarenstein, et al. (Eds), *Interdisciplinary education for collaborative, patient-centred practice: Research & findings report*. Ottawa, ON: Health Canada.
- DePoy, E., Wood, C., & Miller, M. (1997). Educating allied health professionals: An interdisciplinary effort. *Journal of Allied Health, 26*, 127–132.
- Dienst, E., & Byl, N. (1981). Evaluation of an educational program in health care teams. *Journal of Community Health, 6*, 282–298.
- Drinka, T. J. K., & Clark, P. G. (2000). *Health care teamwork: Interdisciplinary practice and teaching*. Westport, CT: Auburn House.
- Erkel, E. A., Nivens, A. S., & Kennedy, D. E. (1995). Intensive immersion of nursing students in rural interdisciplinary care. *Journal of Nursing Education, 34*, 359–365.
- Falconer, J., Roth, E., Sutin, J., Strasser, D., & Chang, R. (1993). The critical path method in stroke rehabilitation: Lessons from an experiment in cost containment and outcome improvement. *Quarterly Review Bulletin, 19*, 8–16.
- Fallsberg, M., & Wijma, K. (1999). Student attitudes towards the goals of an interprofessional training ward. *Medical Teacher, 6*, 576–581.
- Forbes, E., & Fitzsimons, V. (1993). Education: The key for holistic interdisciplinary collaboration. *Holistic Nurse Practice, 7*, 1–10.
- Fox, N. (1994). Self-directed approaches to multidisciplinary health studies. *Journal of Interprofessional Care, 8*, 247–254.
- Freeth, D., Hammick, M., Koppel, I., Reeves, S., & Barr, H. (2002). *A critical review of evaluations of interprofessional education*. London: LTSN.
- Freeth, D., & Nicol, M. (1998). Learning clinical skills: An interprofessional approach. *Nurse Education Today, 18*, 455–461.
- Freeth D, Nicol M, Reeves S, Wood D. (2000). Clinical governance: An interprofessional approach. *Journal of Interprofessional Care, 14*, 292–293.
- Funnell, P. (1995). Exploring the value of interprofessional shared learning. In K. Soothill, L. Mackay, & C. Webb (Eds.), *Interprofessional relations in health care*. London: Edward Arnold.
- Funnell, P., Gill, J., & Ling, J. (1992). Competence through interprofessional shared learning. In P. Pace (Ed.), *Developing and measuring competence (Aspects of Education and Training Technology XXV)*. London: Kogan Page.
- Gilbert, J. H. V., Camp, R. D., II, Cole, C. D., Bruce, C., Fielding, D. W., & Stanton, S. J. (2000). Preparing students for interprofessional teamwork in health care. *Journal of Interprofessional Care, 14*, 223–235.
- Gill, J., & Ling, J. (1995). Interprofessional shared learning: A curriculum for collaboration. In K. Soothill, L. Mackay, & C. Webb (Eds.), *Interprofessional relations in health care*. London: Edward Arnold.
- Graham, J., & Wealthall, S. (1999). Interdisciplinary education for the health professions: Taking the risk for community gain. *Focus on Health Professional Education, 1*, 49–69.
- Green, R., Cavell, G., & Jackson, S. (1996). Interprofessional clinical education of medical and pharmacy students. *Medical Education, 30*, 129–133.
- Greiner, A. (2003). *Health professions education: A bridge to quality*. Washington, DC: National Academies Press.
- Hall, P., & Weaver, L. (2001). Interdisciplinary education and teamwork: A long and winding road. *Medical Education, 35*, 867–875.
- Hammick, M. (1998) Interprofessional education: Concept, theory and application. *Journal of Interprofessional Care, 12*, 323–332.
- Hammick, M. (2000) Interprofessional education: Evidence from the past to guide the future. *Medical Teacher, 22*, 461–467.
- Harden, R. M. (1998). AMEE Guide No. 12. Multiprofessional education: Part 1—Effective multiprofessional education: A three-dimensional perspective. *Medical Teacher, 20*, 402–408.
- Hart, E. & Fletcher, J. (1999) Learning how to change: A selective analysis of literature and experience of how teams learn and organisations change. *Journal of Interprofessional Care, 13*, 53–63.
- Headrick, L., Wilcock, P., & Batalden, P. (1998). Interprofessional working and continuing medical education. *British Medical Journal, 316*, 771–774.

- Health Canada (2001). *Social accountability: A vision for Canadian medical schools*. Ottawa: Health Canada.
- Hewstone, M., & Brown, R. (1986). Contact is not enough: An intergroup perspective on the “contact hypothesis”. In M. Hewstone & R. Brown (Eds), *Contact and conflict in intergroup encounters*. Oxford: Blackwell.
- Hind, M., Norman, I., Cooper, S., Gill, E., Hilton, R., Judd, P., & Jones, S. C. (2003). Interprofessional perceptions of health care students. *Journal of Interprofessional Care*, 17, 21–34.
- Horak, B., O’Leary, K., & L., C. (1998). Preparing health care professionals for quality improvement: the George Washington University/George Mason University experience. *Quality Management Health Care*, 6, 21–30.
- Howkins, E., & Allison, A. (1997). Shared learning for primary health care teams: A success story. *Nurse Education Today*, 17, 225–231.
- Hughes, L., & Lucas, J. (1997). An evaluation of problem based learning in the multiprofessional education curriculum for the health professions. *Journal of Interprofessional Care*, 11, 77–88.
- Hyer, K., Fairchild, S., Abraham, I., Mezey, M., & Fulmer, T. (2000). Measuring attitudes related to interdisciplinary training: Revisiting the Heinemann, Schmitt and Farrell ‘attitudes toward health care teams’ scale. *Journal of Interprofessional Care*, 14, 249–258.
- Johnston, G., & Banks, S. (2000). Interprofessional learning modules at Dalhousie University. *Journal of Health Administration Education*, 18, 407–427.
- Kipp, J., & Pimlott, J. (2003). Meeting the challenges of an interprofessional clinical placement program. Paper presented at The 5th Alberta Meeting on Medical Education, Jasper, Alberta.
- Knowles, M. (1980). *The modern practice of adult education—From pedagogy to androgogy* (revised). Chicago: Follett Publishing Co.
- Kolb, D. A. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice-Hall.
- Lary, M., Lavigne, S., Muma, R., Jones, S. C., & Howeft, H. (1997). Breaking down barriers: Multidisciplinary education model. *Journal of Allied Health*, 26, 63–69.
- LaSala, K., Hopper, S., Rissmeyer, D., & Shipe, D. (1997). Rural health care & interdisciplinary education. *Nursing and Health Care Perspectives*, 18, 292–298.
- Leaviss, J. (2000). Exploring the perceived effect of an undergraduate multiprofessional educational intervention. *Medical Education*, 34, 483–486.
- Likierman, M. (1997). Psychoanalytic observation in community and primary health care. *Psychoanalytic Psychotherapy*, 11, 147–157.
- Lingard, L., Reznick, R., DeVito, I., & Espin, S. (2002). Forming professional identities on the health care team: Discursive constructions of the ‘other’ in the operating room. *Medical Education*, 36, 728–734.
- Lough, M. A., Schmidt, K., Swain, G. R., Naughton, T. M., Leshan, L. A., Blackburn, J. A., & Mancuso, P. J. (1996). An interdisciplinary educational model for health professions students in a family practice center. *Nurse Educator*, 21, 27–31.
- Loxley, A (1980). A study of a multi-disciplinary in-service in the interests of health care. *Social Work Service*, 9, 35–43
- Loxley, A. (1997). *Collaboration in health and welfare: Working with difference*. London: Jessica Kingsley.
- MacIntosh, J., & McCormack, D. (2001). Partnerships identified within primary health care literature. *International Journal of Nursing Studies*, 38, 547–555.
- Mathias, P., & Thompson, T. (1997). Preparation for interprofessional work: trends in education, training and the structure of qualification in the United Kingdom. In J. Øvretveit, P. Mathias & T. Thompson (Eds), *Interprofessional working for health and social care*. Basingstoke: MacMillan.
- McNair, R., Brown, R., Stone, N., & Sims, J. (2001). Rural interprofessional education: Promoting teamwork in primary health care education and practice. *Australian Journal of Rural Health*, 9(Suppl. 1), S19–S26.
- Miller, C., Ross, N., & Freeman, M. (1999). *Shared learning and clinical teamwork: New directions in multiprofessional practice*. London: ENB.
- Nash, A., & Hoy, A. (1993). Terminal care in the community – an evaluation of residential workshops for general practitioner/district nurse teams. *Palliative Medicine*, 7, 5–17.
- Neufeldt, V. (1990). *Webster’s new world dictionary*. New York: Simon & Schuster Inc.
- Oandasan, I., D’Amour, D., Zwarenstein, M., Barker, K., Purden, M., Beaulieu, M. D., Reeves, S., Nasmith, L., Bosco, C., Ginsburg, L., & Tregunno, D. (2004). *Interdisciplinary education for collaborative, patient-centred practice: Research & findings report*. Ottawa, ON: Health Canada.
- Oandasan, I., Kwan, D., Waters, I., Barker, K., Nasmith, L., Jorgenson, D., Herr, G., Revoredo, A., & Dickson, A. (2003). *Interdisciplinary care training program pilot project*. Toronto, Ontario.
- Parsell, G., & Bligh, J. (1998). Interprofessional learning. *Postgraduate Medical Journal*, 74(868), 89–95.
- Perkins, J., & Tryssenaar, J. (1994). Making interdisciplinary education effective for rehabilitation students. *Journal of Allied Health*, 23, 133–141.

- Petrie, H. G. (1976). Do you see what I see? The epistemology of interdisciplinary inquiry? *Journal of Aesthetic Education*, 10, 29–43.
- Pirrie, A., Wilson, V., Elsegood, J., Hall, J., Hamilton, S., Harden, R., Lee, D., & Stead, J. (1998). *Evaluating multidisciplinary education in health care*. London: Department of Health.
- Pryce, A., & Reeves, S. (1997). *An exploratory evaluation of a multidisciplinary education module for medical, dental and nursing students*. Final Project Report. City University, London.
- Reeves, S. (2000). Community-based interprofessional education for medical, nursing and dental students. *Health and Social Care in the Community*, 8, 269–276.
- Reeves, S., & Freeth, D. (2002). The London training ward: An innovative interprofessional learning initiative. *Journal of Interprofessional Care*, 16, 41–52.
- Russell, K. M., & Hymans, D. (1999). Interprofessional education for undergraduate students. *Public Health Nursing*, 16, 254–262.
- Salvatori, P., & Berry, S. (2003). Implementing interprofessional education in Ontario: A pilot study. Paper presented at the 5th Alberta Medical Education Conference, Jasper, Alberta, Canada.
- Schön, D. (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass Publishers.
- Schwenk, T. L., & Whitman, N. (1987). *Physician as teacher*. Baltimore: Williams & Wilkin.
- Seifer, D. S. (1998). Service-learning: Community-campus partnerships for health professions education. *Academic Medicine*, 73, 273–277.
- Tajfel, H. (1981). *Human groups and social categories*. Cambridge: Cambridge University Press.
- The Royal College of Physicians and Surgeons of Canada. (2000). *Can MEDS 2000 project: Skills for the new millennium: report of the societal needs working group*. Ottawa, ON: The Royal College of Physicians and Surgeons of Canada.
- Thomas, M. (1995). Learning to be a better team player: Initiatives in continuing education in primary care. In K. Soothill, L. Mackay, & C. Webb (Eds.), *Interprofessional relations in health care*. London: Edward Arnold.
- Tiberius, R. (1990). *Small group teaching: A trouble shooting guide*. Toronto: OISE Press.
- Tunstall-Pedoe, S., Rink, E., & Hilton, S. (2003). Student attitudes to undergraduate interprofessional education. *Journal of Interprofessional Care*, 17, 161–172.
- University of Southampton: New Generation Project. (2003). *Integrating common learning in pre-registration health and social care professional programmes*. University of Southampton, UK. www.commonlearning.net (Retrieved February 4, 2004).
- Van der Horst, M., Turpie, I., & Nelson, W. (1995). St. Joseph's community centre model of community-based interdisciplinary health care team education. *Health and Social Care in the Community*, 3, 33–42.
- Wahlström, O., & Sandén, I. (1998). Multiprofessional training ward at Linköping University: Early experience. *Education for Health*, 11, 225–231.
- Way, D., Jones, L., & Baskerville, N. B. (2001). *Improving the effectiveness of primary health care through nurse practitioner/family physician structured collaborative practice*. University of Ottawa.
- Way, D. O., & Jones, L. (1994). The family physician-nurse practitioner dyad: Indications and guidelines. *Canadian Medical Association Journal*, 151, 29–34.
- WHO (1978). *The Alma Ater Declaration*. Geneva: World Health Organization.
- Woodhouse, D., & Pengally, P. (1992). *Anxiety and the dynamics of collaboration*. Aberdeen: Aberdeen University Press.
- Zwarenstein, M., Reeves, S., & Perrier, L. (2004). Chapter Two: Effectiveness of pre-licensure interdisciplinary education and post-licensure collaborative interventions. In I. Oandasan, D. D'Amour, M. Zwarenstein et al. (Eds.), *Interdisciplinary education for collaborative, patient-centred practice: Research & findings report*. Ottawa, ON: Health Canada.

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