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Key elements of interprofessional education. Part 2: Factors, processes and outcomes

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Abstract
In the second paper of this two part series on Key Elements of Interprofessional Education (IPE), we highlight factors for success in IPE based on a systematic literature review conducted for Health Canada in its "Interprofessional Education for Patient Centred Practice" (IECPCP) initiative in Canada (Oandasan et al., 2004). The paper initially discusses micro (individual level) meso (institutional/organizational level) and macro (socio-cultural and political level) factors that can influence the success of an IPE initiative. The discussion provides the infrastructure for the introduction of a proposed framework for educators to utilize in the planning and implementation of an IPE program to enhance a learner's opportunity to become a collaborative practitioner. The paper also discusses key issues related to the evaluation of IPE and its varied outcomes. Lastly, it gives the reader suggestions of outcome measurements that can be used within the proposed IPE framework.

Keywords: *Interprofessional education, learning context, teaching strategies, evaluation, framework and review.*

Introduction

There are a number of factors that can act as either barriers or enablers for success in IPE. These factors can be subdivided into issues directly related to the learner, the teaching environment and the institutional environment. This paper considers salient factors at the micro level (socialization processes), meso level (administrative challenges for learners and faculty that affect the teaching environment and the role of local leaders) and macro level (the need for senior management and government political support) that can influence the successful development and delivery of IPE. The paper aims to provide a better understanding of some of the factors that affect IPE. By doing so, it is hoped that readers will be better equipped to be able to overcome the challenges associated with this type of education.

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Micro level factors

Socialization and its effects on IPE

In considering key sources of resistance in IPE, the effect of socialization[1] must be addressed. Individuals who enter a particular health profession have a series of attitudes, beliefs and understandings of what that profession means to them, and how they see themselves in a professional role in the future. Through the direct transfer of profession-specific attitudes, knowledge and behaviours, a professional culture is developed during a learner's pre-licensure education, which continues well into the post-licensure working years. In this section of the paper we outline the notions of how socialization practices impact on learners and how they often have a negative effect on their involvement in an IPE initiative.

In most higher education institutions, health professionals are trained separately with minimal interaction with other health professional trainees. This undoubtedly affects the socialization processes of identity formation, as Drinka and Clark (2000, p. 66) argue:

> The new 'inductees' in health professions training programs are usually protectively housed in different buildings on campus – where they can be free from the potentially contaminating and threatening influences of students and faculty from other fields.

The effect of each profession's socialization can play an important role in how they approach interprofessional collaboration. For example, for medical students, part of their socialization process is the need to develop a "cloak of competence" where they feel they must learn how to be authoritative in professional and interprofessional situations (Haas & Shaffir, 1991; Headrick, Wilcock et al., 1998). Differing types of professional knowledge and the value that each profession places on either the natural sciences or social sciences can also create distinctly different professional cultures. This can isolate professionals from one another and impede their collaborative learning and practice opportunities (e.g., Freeth & Nicol, 1998; Reeves & Pryce, 1998). In addition, professional or "turf" protectionism is another cultural factor which has negatively impacted students and practitioners in participating in IPE (Itano et al., 1991; Skovholt et al., 1994; Connolly, 1995; Pirrie et al., 1998).

As a result of their socialization, learners pass through their pre-licensure programs with stereotypes of their own professional identities and those for other professions (e.g., Carpenter 1995a; Tunstall-Pedoe et al., 2003). Indeed, such professional stereotypes present a particular challenge for IPE. For example, in an evaluation of an IPE module for pre-licensure medical, nursing and dental students Reeves (2000) found that nursing students generally felt they had lower academic status and their intended profession was less "prestigious" than medicine. For them, medical knowledge was regarded as "higher" status. Based on these views, the differing students had constructed a range of stereotypical notions of how the "other" students would behave towards them during their interprofessional learning. Encouragingly, these views were observed not to have any profound affect on the interaction of these students during their interprofessional experiences. However, this research emphasizes the notion of stereotypical attitudes and beliefs that may impact on IPE.

Learners in the health and social professions aim to gain competence in the knowledge, skills and attitudes required to be proficient in their own professional practices. While IPE can provide opportunities to influence the types of attitudes learners' develop, as we discussed in Part 1 (The role of faculty) it is important for faculty to recognize that their own

attitudes and stereotypes may negatively impact an IPE initiative. Just as the socialization process for learners has an effect on IPE, its effect is heightened for faculty, as many may be unwilling to change their attitudes and/or may be unwilling to learn different ways of practicing and/or teaching (Parsell & Bligh, 1998).

The impact of interprofessional education on the socialization process could increase opportunities for students to learn together and begin to collaborate more effectively together. By doing so, it may be able to diminish early negative stereotypes and positively influence the development of new and more positive attitudes toward themselves and others, as learners move through their health professional programs and graduate into practice settings.

Meso level factors

The impact of administrative processes on IPE

It is generally agreed that organizing interprofessional education is a difficult task to achieve with numerous administrative or logistical obstacles which need to be overcome (e.g., Collier 1981; Lough et al., 1996; Pryce & Reeves, 1997; Miller et al., 1999). In particular, organizing pre-licensure courses across health professional programs involves overcoming a number of what Pirrie et al. (1998) refer to as ''internal inhibitors'' (e.g., inequalities in the number of students, geographical isolation from one another, differences in curricula which cause timetable clashes) and ''external inhibitors'' (e.g., securing joint validation and accreditation, agreeing on joint financial arrangements). This complex range of factors all need to be negotiated and agreed before courses can be delivered.

The way interprofessional education is planned may be a major determinant of the success of the initiative. It is important to identify who the key partners are in the initiative and involve them in the planning and implementation from the very beginning (Nasmith et al., 2003). Creating a collaborative initiative requires collaborative planning by all representatives of the health professions involved.

Figure 1 offers an account of the key issues (in the form of a series of questions) that need to be taken account in the planning of an IPE initiative. This ''Interprofessional Education/ Collaborative Practice Initiative planning guide'' (Nasmith et al., 2003) lists basic questions adapted from issues identified by Kotter (1995) for leading change initiatives within business environments. These questions are meant to guide individuals through the change process encountered when introducing IPE initiatives. Each question is meant to build upon the next. By overlooking any one of the questions, difficulties may be faced that could potentially be avoided.

Another factor that can inhibit the development of interprofessional education is that this type of activity is usually undertaken on top of a normal workload by a committed few (e.g., Sommer et al., 1992). It is therefore generally agreed that only staff who are both committed about interprofessional education should be invited to undertake this type of work (e.g., Boyer et al., 1977; Collier, 1981; Lough et al., 1996). Indeed, it is argued that such staff will be prepared to devote their time, energy and enthusiasm overcoming the various educational, professional and logistical difficulties associated developing an interprofessional education initiative. However, as Freeth (2001) points out, where interprofessional education is dependent upon the input of a few key enthusiasts, it can encounter problems of continuity when these individuals move on. When group turnover occurs, an initiative is likely to wither away.

1. What are *the external/internal drivers* influencing the development of this program?
2. Who are your potential *partners*?
3. What is the *overall goal* of this activity at the interprofessional and profession-specific levels, i.e., attitudes, skill development, team building?
4. What are the *opportunities* within the *current learning context*?:
   - the patient population
   - the practice site(s)
   - the learners in terms of disciplines and level of training
   - the timing (scheduling, length of program)
5. What *barriers/difficulties* do you anticipate and how can you overcome them?
6. Who are the *key players* in designing this intervention?
   - how will you involve them?
   - what will be their roles and responsibilities?
   - how will you build group trust and cohesiveness?
   - how will you ensure good communication?
   - how will you resolve conflict?
7. What are the *specific objectives* of this activity?
   - content
   - essential elements of interprofessionalism
8. What *teaching methods and tools* will you use to operationalize these objectives?
9. How will you *evaluate* the activity?:
   - reactions/satisfaction
   - learning (Knowledge-Attitudes-Skills)
   - behaviours
   - results (impact)
10. How will you ensure the *sustainability* of this program?
   - funding
   - challenging the culture

Figure 1. Key issues in planning interprofessional education/collaborative practice initiatives (Nasmith, Oandasan, Purden, 2003).

Leadership and IPE

Within the literature, there is consensus that the success of any interprofessional initiative depends on attracting commitment from both institutional and political leadership. We highlight the issue of institutional leadership first. At the level of the academic institutions it is noted that support is needed from senior administrators who have the power to decide on educational policies and control resources (e.g., Shaw, 1994; Goble, 1994; Carpenter, 1995b; Edwards et al., 1997; Pirrie et al., 1998). They can implement changes in course structures, conjure up faculty support through academic incentives, provide funding to operate IPE budgets and have a major role to play in the long-term sustainability of initiatives. Getting support from key senior administrators can be a challenge but with their backing it is possible for interprofessional education to become a priority issue.

Macro level factors

Political and institutional support

It is also argued that political (government) support for interprofessional education can help create the necessary ''incentive'' for educational institutions to begin to operationalize interprofessional activity (e.g., Parsell & Bligh, 1998; Freeth, 2001). Barr (2000) provides a useful illustration of the effect of this type of political support when the National Health

Service (NHS) in the United Kingdom (UK) called for a partnership amongst health care workers to ensure seamless service for patient-centred care. At the heart of this policy was the development of a "new core curriculum" that aimed to give everyone working in the NHS the skills and knowledge to respond collaboratively to the individual needs of patients (Barr, 2000). In effect, this government policy provided the necessary political support for universities and higher education colleges to provide interprofessional education.

Academic institutions are also influenced by accreditation, certification and licensure bodies. As mentioned in Part 1 of this paper, the Institute of Medicine in the United States (US) has utilized this lever to try to encourage health professional programs to adopt the five competencies which they feel health professionals need to master to provide the best care to the US population (Greiner, 2003). Similarly, in the UK, the Quality Assurance Agency has agreed upon "benchmark statements" to describe the "nature and standards of study" for nursing, midwifery and the professions allied to medicine in the pre-licensure years of training (Barr, 2001). In both the UK and the US, extensive consultations were required amongst the various stakeholders in order for agreement to be reached. However, once consensus is made, these levers, arguably, become very powerful movers for academic institutions to enact change.

Despite offering some helpful "clues" into what types of support are required to develop interprofessional education in the pre-licensure years using a micro, meso and macro level, the literature provides only a limited understanding of the negotiation processes involved in securing this support. This is a literature gap that needs to be filled.

Evaluation and outcomes

Having examined the micro, meso, and macro level factors related to the development of interprofessional education, the paper now discusses the issue of evaluation and outcomes associated with this type of education. There are two forms of evaluation that are required of any educational initiative. The first is an evaluation of the *program* itself, the other an evaluation or assessment of the *learner* and the knowledge, skills and/or attitudes gained from the educational program. These two types of evaluation processes are described below.

Outcome measurements

One of the important outcomes to measure in relation to interprofessional education is its impact on patients/clients. Indeed, this is what Zwarenstein et al. (2001) set out to find when they conducted a Cochrane review of the literature on IPE. Findings from this systematic review revealed that there was no evidence (in respect to randomized controlled trials, controlled-before-and-after or time interrupted series studies) for the effectiveness of IPE on patient/client outcomes. Another more recent review for Health Canada's IECPCP Report (Zwarenstein et al., 2004) which is summarized in this supplement (see Zwarenstein et al., 2005) again produced similar (negative) findings. Although these findings are discouraging, Zwarenstein et al. (2001) go on to stress that: "no evidence of effectiveness is not evidence of ineffectiveness".

Employing a more inclusive approach to understanding the impact of IPE, another review was instigated. This review aimed to examine the literature that would have been excluded from the Cochrane Review due to its rigid evaluation standards but nevertheless could still provide useful information. They launched their own systematic review entitled the "Jet Review" (Freeth et al., 2002). Three questions were asked of the literature:

- What are the interprofessional learning experiences and processes of learning?
- What are the outcomes of interprofessional education?
- How can the impact of interprofessional education be measured?

In reviewing the literature, Freeth et al. (2002) included other outcomes measures (beyond patient/client care outcomes), all which were of importance in understanding issues related to interprofessional learning. To capture the different outcomes, Freeth et al. (2002) re-classified Kirkpatrick's (1967) typology of educational outcomes from four to six outcomes of IPE (see Figure 2).

While Freeth et al. (2002) found 217 evaluations of IPE (using a search strategy including Medline 1996–2000, CINAHL 1982–2001, and British Education Index 1964–June 2001), only 53 articles were found to be of good quality for consideration of reliability (trustworthiness) or validity (authenticity).

In the last few years since the Freeth et al. (2002) paper, apart from an increasing body of research literature, little has changed in relation to evaluations or outcomes of IPE (Barr et al., forthcoming). However, we are learning more about the components related to teaching IPE (see Part 1 of this paper). Nevertheless, there is a continuing need to develop and test effectiveness measurements through rigorous evaluation methods (Mattick & Bligh, 2003). The learning curve is still steep in forming better pedagogical constructs of the "how" to teach IPE. The use of qualitative research methods has been proposed by Zwarenstein et al. (2004) in order to help inform us better about these constructs. Not only is there a need to employ teaching constructs, educators and researchers must find ways to rigorously evaluate them to show their true impact on IPE. Currently, most studies have measured changes in attitudes as the method of outcome measurement (e.g., Freeth et al., 2002). But as we can see from Figure 2, there are other methods beyond attitudinal shifts that can measure impact of IPE. Ultimately, improvement of patient outcomes is one of the key strategies for advancing IPE and we need to strive for ways in which evaluations of IPE can be conducted which meet the methodological criteria of systematic reviews (Hammick, 2000).

1. Reaction	Learners' views on the learning experience and its interprofessional nature
2a. Modification of attitudes/perceptions	Changes in reciprocal attitudes or perceptions between participant groups. Changes in perception or attitude towards the value and/or use of team approaches to caring for a specific client group.
2b. Acquisition of knowledge/skills	Including knowledge and skills linked to interprofessional collaboration
3. Behavioural change	Identifies individuals' transfer of interprofessional learning to their practice setting and changed professional practice
4a. Change in organizational practice	Wider changes in the organization and delivery of care.
4b. Benefits to patients/clients	Improvements in health or well-being of patients/clients.

Figure 2. Modified Kirkpatrick's Model of Educational Outcomes for IPE (from Freeth et al. (2002, p. 14).

The literature is also sparse related to how we can assess knowledge and skills competencies required for collaborative practice. However, as noted earlier, many assessments have been conducted in the area of measuring attitudinal shifts (e.g., Luecht et al., 1990; Baggs, 1994; Parsell & Bligh, 1998; Hyer et al., 2000). There needs to be emphasis placed in developing ways to measure all types of competencies (knowledge, skills and attitudes) for interprofessional education..

A conceptual framework for interprofessional education

Based on a detailed analysis of the findings of the literature review, we offer a conceptual framework for educators to consider when engaging in the development of interprofessional education initiatives (see Figure 3).

This educational conceptual framework describes only one part of moving the IECPCP agenda forward. D'Amour and Oandasan (2004) have developed "A Framework for Interprofessional Education for Collaborative Patient-Centred Practice" which recognizes the interdependence of Interprofessional Education with Collaborative Practice. In their article (D'Amour & Oandasan, 2005) which describes "interprofessionality", their evolving framework provides a necessary foundation to consider a new area of inquiry that describes the determinants and processes necessary for moving IECPCP forward across international borders.

Educators and administrators within academic institutions are responsible for the training of competent health professionals who are able to practice independently and carry with them the knowledge, skills and attitudes which will ensure the provision of good patient-centred care. It is for this reason that the learner is situated at the centre of the conceptual framework.

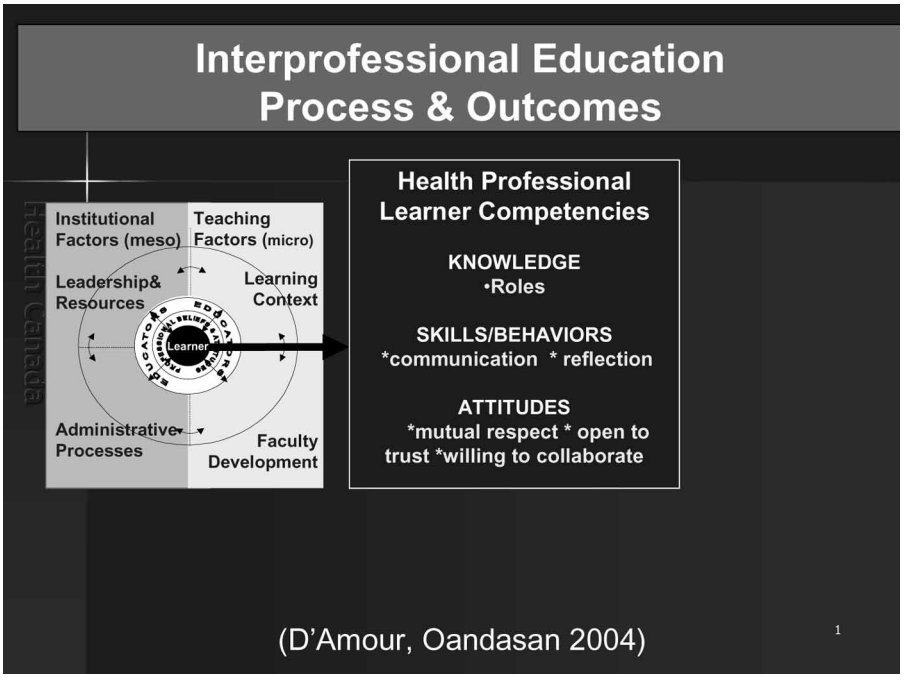

Figure 3. Interprofessional education processes and outcomes.

Directly influencing the learner is the educator. As the reader will note, professional belief and attitudes are presented in between both the learner and the educator in the framework because both learners and educators carry with them beliefs and attitudes about their own profession and often stereotypes of other professions. In planning interprofessional education activities, this important realization must be addressed. Because professional stereotypes and professional beliefs and attitudes are inherent within society (at a systems level) they tend to influence learners and reinforce behaviors of educators/practitioners. This too, must also be recognized in planning IPE initiatives.

Hence there are three key issues that emerge from the D'Amour-Oandasan education component of their evolving framework (2004):

- Learner, educator and the learning context issues (see Part 1 of this paper) should all be addressed at the micro level of planning an IPE initiative.
- At the meso level, leadership and administrative processes must be factored into the development of an IPE initiative.
- Systemic (macro level) factors, particularly related to professional body education accreditation standards and licensing body expectations also play a crucial role in IPE as they can help provide an incentive for institutions to support IPE. Similarly, government policies can also drive the movement of IPE in ways which support health system reform requiring health professionals to work effectively in team based collaborative practices.

All of the factors within this framework influence each other. Ultimately the interactions between them influence the major outcome of interest to educators which is the learner. The Learner should leave his or her pre-licensure program with specific competencies related to the knowledge, skills and attitudes of practicing in a collaborative manner with other health professionals.

The proposed framework helps to identify who needs to be involved and what needs to be addressed in the development of an IPE initiative within an academic institutional setting. It highlights the need to consider the interface between the learner and the educator and the necessary educational interventions that must be given to both. The framework also provides a guide for considering research questions that can help educators move IPE forward. The processes of learning and teaching, the organizational and administrative management issues and the outcomes of IPE all need to be further understood. This framework provides a beginning to consider these issues and in time, as we learn more, the framework should evolve and move us in more focused pedagogical directions.

Concluding comments

This paper has provided insight into some of the essential factors necessary for success in the development and implementation of IPE. The conceptual framework provides educators with a helpful overview into how the micro, meso and macro level factors interplay to influence the planning and implementation of IPE. The framework prompts educators and academic institutional administrators that their specific goal in IPE is to develop health professionals who leave their training programs as competent collaborative patient-centred practitioners. This goal is envisioned as a key factor for health system reform in Canada. Educators are key stakeholders in the IECPCP agenda and must understand what specific role they play in advancing this agenda forward. Time and

research will tell whether patient care outcomes are definitively improved with the use of IPE interventions (particularly at the pre-licensure level of training). Until then, there is significant value for cross-sectoral and international collaboration in sharing our understanding of IPE and further delineating the necessary essential elements that are required for its success.

Note

1 The process whereby attitudes, beliefs and behaviours are transferred from established members of a community to new entrants – see Becker et al. (1961) or Sinclair for detailed accounts of the socialization process of medical students and Melia (1987) for an account of nursing student socialization.

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