Reflecting on reflection in interprofessional education: Implications for theory and practice*

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Abstract

Interprofessional education (IPE) involves learning, and learning requires reflection. Educators need to “reflect more on reflection” if they are to be effective teachers in ensuring the learning outcomes essential for teamwork and interprofessional practice (IPP), including incorporating both theory and practice into the development of educational interventions. First, this discussion surveys the IPE-relevant literature on reflection, and then defines and refines the multidimensional concept of reflection as it relates to IPE in developing and implementing teamwork learning programs and experiences. Second, specific methods to promote reflection are presented and explored, including self-assessments, journaling, and written papers. Actual samples from student journals and assignments provide examples of the impacts of using these methods on participant reflection and learning. Finally, implications for an expanded understanding and application of reflection for IPE will be discussed, and recommendations made for educational practice and research in this area.

Keywords: Reflection, interprofessional, education, theory, practice

Reflective thinking is always more or less troublesome because it involves... willingness to endure a condition of mental unrest and disturbance.
John Dewey (1910, p. 13)

He who knows others is wise; he who knows himself is enlightened.
Lao Tzu (Chan, 1963, p. 159)

Introduction

Interprofessional education involves learning, and learning requires reflection. Advocates for interprofessional education (IPE) need to think more clearly about how learning is to occur in “occasions when two or more professions learn with, from, and about each other to improve collaboration and the quality of care” for interprofessional practice (IPP) (CAIPE, 1997; cited in Barr et al., 2005). Teamwork educators tend to focus more on specifying the
outcomes of IPE in terms of the knowledge and skills needed by health and social care students and professionals to work collaboratively, rather than on designing the processes that should be implemented in educational settings to ensure their acquisition. It is the learning processes in IPE that determine the success of the educational outcomes in equipping students to work together as professionals in IPP.

As a key factor in many theories of learning, reflection is a prime candidate for more exploration in the IPE literature. Thus, we need to “reflect more on reflection” if we are to be effective teachers in promoting the educational outcomes essential for teamwork and collaborative practice. In particular, there are two critical elements in this learning process, as captured in the quotations above, that will provide a thematic thread to this discussion: (i) conflict is a key ingredient in both the process of reflection and the cycle of experiential learning, and (ii) while it is essential to learn about other professions’ backgrounds and perspectives in IPE, it is equally important to gain insight into one’s own self, profession, and abilities for teamwork.

The purpose of this discussion is to combine both theoretical and practical elements in reflecting on and implementing reflection in IPE; that is, educational theory will be presented, but so too will concrete, practical methods to integrate theory into educational practice. Both elements are essential if we are to advance the field of IPE. This analysis will, first, define and develop the concept of reflection as it relates to IPE, in particular how it may be useful in considering how to design and implement teamwork learning programs and experiences. This discussion will be situated within the general literature on reflection in health and social care. Second, specific methods to promote reflection will be justified and explored, including (i) self-assessment instruments for personality type, learning style preferences, conflict management skills, and leadership ability, (ii) the use of journaling methods to create a structured place, space, and time for reflection, and (iii) written papers based on the journal to expand the opportunity for reflection. Samples from actual student journals and assignments will be used to provide examples of the impacts of using these methods on participant reflection and learning. Finally, implications for an expanded understanding and application of reflection for IPE will be discussed, and recommendations made for practice and research in this area.

**The nature of reflection for IPE applications**

Reflection has emerged as a key concept in educational theory and learning, especially in the health and social care professions (e.g., Moon, 1999; Redmond, 2004). For example, reflection is used extensively in nursing education, where it is often tied to journaling methods (e.g., Chirema, 2006; Epp, 2008; Harris, 2007; van Horn & Freed, 2008); but it is also seen as a relevant thread in social work (e.g., Tsang, 1998), physiotherapy (e.g., Wessel & Larin, 2006), and other health professions (e.g., Tate & Sills, 2004).

In the interprofessional literature, reflection is often cited as a key ingredient in effective teamwork education and practice (e.g., Barr et al., 2005; D’Eon, 2005; Parsell & Bligh, 1998; Pirrie et al., 1998; Tsang, 1998). Historically, some of this literature has been more multi- than interprofessional, focusing more on reflection within the different health professions in parallel (e.g., Tate & Sills, 2004) than on IPE itself (e.g., Karban & Smith, 2006). Generally, the precise meaning and nature of reflection have not been fully developed within an IPE framework, an omission affecting our ability to use IPE to teach the knowledge and skills essential for interprofessional practice (IPP).

**The meanings of reflection**

Traditionally, and in common usage, the term “reflection” has multiple meanings (Moon, 1999). First, it relates to learning and the (re)presentation of learning, of thinking about
something in more detail. Second, it suggests a purpose, goal, or outcome. And third, reflection involves higher order mental processes than, for example, simply recalling something; that is to say, it relies on complicated mental processing of issues or problems for which there is no easy or obvious solution (hence the reference to unrest and disturbance in the quotation from John Dewey above). The term “critical thinking” is sometimes used to capture this sense of the concept: “the term is used to pull together a broad range of previous thinking or knowledge in order to make greater sense of it for another purpose that may transcend the previous bounds of personal knowledge or thought” (Moon, 1999, p. 5). A common expression of this meaning includes “stepping or sitting back” from a situation to review it.

The American educational philosopher John Dewey (1933) described this process as consisting of turning a subject over in one’s mind and giving it serious thought. Dewey (1933) defined reflection as “active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends” (p. 9). Reflection allows individuals to see through the habitual way that they experience everyday life (Redmond, 2004). Based on Dewey’s definition of education, Rodgers (2002) suggests that reflection is the process of “reconstruction and reorganization of experience which adds to the meaning of experience” (p. 848).

**Reflection and the learning cycle**

In the IPE field, collaborative and experiential learning – such as a group of students from different backgrounds working together on a clinical case – is the cornerstone of many methods of teaching teamwork. In this context, learning is a process or a cycle, not a product or an outcome; the knowledge and skills acquired by the participants are the learning itself (Clark, 2006). As Kolb (1984) suggests, experiential learning is a conflict-filled process, which students enter with different learning styles and backgrounds, based on personal and professional factors. In the experiential learning cycle, there are two sets of polarities: (i) concrete experience (CE) – “feeling” – versus abstract conceptualization (AC) – “thinking”, and (ii) active experimentation (AE) – “doing” – versus reflective observation (RO) – “watching.”

Learning as a process includes all these elements. Learners must be able to participate in new experiences (CE), reflect on and observe their experiences from different perspectives (RO), create concepts that integrate their observations into logical theories (AC), and use these theories to make decisions and solve problems (AE). For Kolb, reflective observation involves careful examination before making a judgment, viewing things from different perspectives, and looking for the meaning of things.

**Types of reflection**

A question raised by the Kolb experiential learning cycle is whether “true” reflection is tied more to the reprocessing of previous learning than to the initial processing of raw experience. In the former case, reflection involves real-life events in a situation; in the latter, reflection is tied more to the images and thoughts that have been developed about the events (Moon, 1999). A similar distinction has been made by Schön (1987) between reflection-in-action, which occurs during action and guides it through knowledge or theory in use, and reflection-on-action, which occurs after action and relates to thoughts about the action that has been taken.

This differentiation between what we may call “primary” and “secondary” reflection has been applied to the IPE field by Wackerhausen (2006). He suggests that primary or first-order reflection is too closely allied with one’s own personal and professional views and perspectives, with one’s own ways of seeing the world – what Clark (2006) has called
"cognitive" and "normative" maps. Rather, what is needed for transformative IPE learning is secondary or second-order reflection that requires stepping back from oneself and professional perspective to be able to consider one’s own self. Mezirow and Associates (1990) use the term “perspective transformation” to capture the process through which an individual becomes aware of his or her own frames of reference or meaning perceptions, a process that they suggest requires “critical reflection” (p. 12).

This stepping back and considering is linked to the Piagetian concept of “decentering”, of becoming aware of points of view other than one’s own (von Glasersfeld, 1997). This outcome is achieved through the social or shared dimensions of IPE, of learning “with, from, and about” others (Clark, 2006); and it entails the enrichment, deepening, modification, and elimination of knowledge on the part of its participants (Dahlgren, 2006). This outcome is dependent upon the achievement of “metacognitive competence”, of being able to “think about one’s own thinking” and that of others. We may extend this concept to reflection, and consider being able to “reflect on one’s own reflection” or “meta-reflection” as an example of the kinds of processes needed for effective IPE experiences.

Reflection and journaling

Reflection, and particularly the higher order reflection necessary for effective IPE, does not happen on its own; however, conditions can be established that encourage it to take place. In an educational setting, a structure is needed to ensure that there is a place, a space, and a time for it to occur. In addition, there needs to be both guidance and the expectation of outcomes in order for effective reflection to happen (Moon, 1999). Also essential is the “quality of being present to the nature of the experience and an openness to its potential meanings” on the part of the individual (Rodgers, 2002, p. 850). The use of structured journaling is considered to be an effective method to provide the necessary conditions for effective reflection.

For example, Holly (1989; cited in Moon, 1999) refers to the metacognitive effects of journal writing, and Moon (1999) goes on to suggest that “such reflection might require a particular form of guidance and structure to ensure that both of the stages of initial observation and later reflection on reflection can occur” (p. 188). The connection between reflection and journaling in nursing education was previously mentioned at the beginning of this section. In particular, structured journals that accompany experiential or fieldwork assignments may be useful in encouraging students to apply established theories or develop their own to make meaning out of those experiences – an outcome particularly important in IPE.

In addition to journals, there are other methods for exploring oneself and others that can enhance learning “with, from, and about” them. In this context, it is important to recognize that IPE can include gaining more insight into oneself even as one learns about others – an outcome sometimes overlooked in this field. In this context, self-assessment tools for personality type, learning style preferences, conflict management skills, and leadership ability – all these may be useful in furthering the acquisition of the knowledge and skills important for teamwork.

Promoting reflection

Taking the theoretical dimensions of reflection and applying them to actual learning contexts and experiences can be a challenge. As suggested earlier, not all individual students and health and social care providers are equally reflective, given their different personalities and professions. For example, in my own experience I have noted that nursing and social work students seem more comfortable with reflection than those from pharmacy and
medicine. This observation is consistent with Kolb’s (1984) and Smith and Kolb’s (1985) work, suggesting that in the health professions, nursing and social work are “divergent” professions, emphasizing concrete experience and reflective observation, while medicine is “convergent” and relies more on abstract conceptualization and active experimentation.

Thus, methods to encourage and structure reflection are necessary to promote its use in IPE. These include self-assessment instruments, journaling, and reflection papers that have been used for several years in a course I teach on interprofessional teamwork for health and social care students at my university, and the use of which helps to inform this discussion. These methods of encouraging reflection were initially chosen and subsequently continued because of their (i) basis in the literature on teamwork (described below), and (ii) proven popularity and success over time in promoting the teamwork learning experience for the students in the course (see student comments to follow).

This elective course on interprofessional teamwork, taught over the past 25 years, typically recruits 6–8 advanced undergraduate and graduate students from the health and social care professions – including nursing, social work, pharmacy, medicine, nutrition, dental hygiene, and counseling – who are interested in learning more about health and social care teamwork (Clark, 1994). The course combines (i) a weekly seminar based on readings and discussion on teamwork theory dealing with such topics as communication, conflict, and leadership, with (ii) problem-based learning cases in which the students collaborate in small groups to work on patient/client assessment and care plan development.

Self-assessment instruments

There are many dimensions to IPP that represent key areas for knowledge and skill development, but there are four that are particularly important for teamwork functioning and educational practice: (i) personality type, (ii) learning style preferences, (iii) conflict management skills, and (iv) leadership ability. These core topics are consistent with both the more theoretical literature in the IPE field (e.g., Drinka & Clark, 2000) and the more applied curricula that have been developed for interprofessional teamwork training in the US (e.g., Hyer et al., 2001; Long & Wilson, 2001). Each of these areas has a self-assessment corresponding to it, which will be presented in general terms and its use justified by the literature.

(i) Myers-Briggs Type Indicator (MBTI), a widely used personality measure, divides personality into 24 basic types, arrayed on two axes: introversion vs. extraversion, and sensing vs. feeling (Myers, 1993). The MBTI has been used in interprofessional health care teams to facilitate collaboration and communication among members (Allen & Brock, 2000; Cashman et al., 2004).

(ii) Kolb Learning Style Inventory (LSI), based on Kolb’s (1984) experiential learning framework discussed earlier, assigns learners to four categories: converger, diverger, assimilator, and accommodator based on the two axes of concrete experience (CE) – “feeling” – versus abstract conceptualization (AC) – “thinking”, and active experimentation (AE) – “doing” – versus reflective observation (RO) – “watching” (Smith & Kolb, 1985). The LSI was chosen for use in the course because of its emphasis on reflection as a key component of the learning cycle and its relevance, based on Kolb’s research, to the health professions.

(iii) Thomas-Kilmann Conflict Mode Instrument (CMI) characterizes styles of dealing with conflict into five types (competing, collaborating, compromising, avoiding, and accommodating) based on the two axes of assertive vs. nonassertive and cooperative vs. uncooperative (Thomas & Kilmann, 1974). The CMI has been used in training programs
for interprofessional teamwork to promote the development of more effective conflict management skills (Clark et al., 1997).

(iv) Bolman and Deal Leadership Orientation Instrument (LOI) assesses leadership styles in four orientations: the structural, human resource, political, and symbolic frames (Bolman & Deal, 2008). The LOI has been used in educational workshops focusing on the acquisition of expanded leadership definitions and roles for health care teams (Drinka & Clark, 2000).

Without going into extensive detail on these self-assessments, their overall importance is that they provide insight into both one’s own self and the other individuals on the team or in the class. Their application in the IPE context provides “a place and a space” for both self-reflection and reflection on how others are different from oneself. As the quotation from Lao Tzu says, “He who knows others is wise; he who knows himself is enlightened”.

Following are some illustrative samples of actual student comments on the power of insights gained from completing the self-assessments described above:

Self-reflection is necessary to becoming a better team member. The various self-assessments we did this semester were very important in helping me better understand myself, especially with respect to teamwork. These inventories forced me to reflect on what styles of learning, conflict and leadership are, how these styles differ from those of others, and the strengths and weaknesses of each style.

I think that the surveys and self-assessments were some of the most important tools and a necessary step for working in teams. They served as an eye-opening realization in regards to some of the aspects of my character and how that could influence my work with others in an interdisciplinary team. What was equally important was witnessing other classmates’ results in comparison to my own to see how their approaches may differ. Recognizing this is essential if you have hopes of working well in a team with other professionals.

The types of learning outcomes suggested by these student comments relate to the importance of understanding both self and others, especially how they might be different from oneself, personally and professionally. Terms such as “eye opening” suggest the “ah ha!” experience of gaining personal knowledge and then comparing it to what one has learned about others who are different from oneself with regard to personality type, learning style preferences, conflict management skills, and leadership ability. In my experience, the dual need for understanding of self and others is seen by students as a key factor in IPE.

Journaling

In the course I teach on interprofessional teamwork, keeping a journal on their experiences in the class (including working with others on a problem-based learning, PBL, case) is the core requirement for students, and it serves as the educational linchpin of their coursework. Students are required to write in their journal any time they have contact with other students in their team, read course materials, or attend class sessions. This journal requires a specific format outlined in Schatzman and Strauss (1973) using three different types of notes. This format was chosen because of its congruence with the Kolb Learning Cycle, requiring both (i) observation and reflection, and (ii) the application of theory to practice (Clark, 1994).

Observational notes (ONs) are statements about events experienced through watching and listening, but they contain as little interpretive material as possible. They are the classic “who, what, when, and where” of people’s activities.
Theoretical notes (TNs) represent the observer’s attempt to make sense or meaning of what has been seen or heard, including the use of concepts or theories that may help in this process.

Methodological notes (MNs) are statements that serve as instructions, reminders, and notes to the observer, a kind of written bulletin board for keeping the observational/reflective process on track.

Importantly, the three types of notes are entered in a pattern that evolves as the journal process unfolds. A student may record a series of ONs on a particular day, and then attempt to link them together by a TN. Alternatively, he or she may recognize a pattern in ONs over several days’ time and insert a TN to explore their significance. This journal format facilitates an ongoing developmental dialogue on the part of the participant. As Schatzman and Strauss (1973) suggest:

The record can be regarded... as confronting the recorder during different stages in his own development. Therein lies an important interactional process through which the researcher discovers new properties in scenes and in relationships hitherto unnoticed though “recorded,” and through which he will, hopefully, develop concepts and propositions about the nature of the scene. (p. 98)

As mentioned earlier, this particular journal format was chosen because it captures the experiential learning cycle by requiring reflection on the experience and leading to the development of explanatory theories that can then be tested empirically. In addition, it represents for the students an ongoing educational story or narrative, peopled with both their own internal dialogue and that between themselves and the other participants. Often, this narrative is based on intrapersonal, as well as interpersonal, conflict, i.e., conflict that is both internal and with other members of the team or class (Drinka & Clark, 2000) – capturing the essential principle articulated earlier that conflict is an essential ingredient for both experiential learning and reflection. The journal encourages the students to reflect on and to recast, reinterpret, and reinforce their emergent ideas and insights. The written nature of the journal is very important, as writing itself is a fundamental component of meaning-making; it renders our thoughts visible and concrete, and enables us to interact with and change them as part of an ongoing developmental process (Emig, 1977; Fulwiler, 1982).

The importance of journaling for students in my IPE course is captured in the following statements from their coursework:

I learned that the journal served as a way to document our individual growth. When I wrote in my journal, it forced me to reflect back on the events, feelings, encounters, and interpretations that I experienced. I was able to attempt to make sense of them and analyze different approaches to handling these different events... I began to try to look at situations from the point of view that the other people may have had. I enjoyed looking back at my journal from the entire semester; I thought about where I came from, and where I have now come.

Journaling is the class; it is the teacher of the course... It forces thoughts to the forefront. If the thoughts were not written down, the observer may doubt their importance, and push them to the back of the mind... When forced to look at these thoughts and thought processes, one begins to learn from them. The knowledge gained from the observation and study of one experience leads to experimentation with alternative solutions the next time that situation arises. Ultimately, this can lead to the growth of the team.
The process of journaling became a tremendous source of insight for me throughout the semester. It ultimately enriched my academic and team experience, giving "life" and meaning to many of those thoughts [to which] I would ordinarily have paid little attention. Journaling also facilitated my learning process by enabling me to connect theory with actual practice and experience.

Reflection papers

In addition to the journals required in my course, I ask the students to write two, short reflection papers, each 3–4 pages in length, based on their journals. These papers allow them to expand their thinking on issues and patterns that arise from the different types of notes in their journals. Typically, the students choose topics related to the course themes of communication, conflict, and leadership. The reflection papers encourage secondary reflection, because the students engage in reflection on their primary reflection captured in their journals’ ongoing developmental dialogue. In this regard, the papers create an opportunity for synergy among the self-assessments, the journal, and further reflection on their significance for the students in learning about each other as well as about themselves. This additional level or layer of reflection encourages the kind of "reflection on reflection" or meta-reflection described in the earlier theoretical discussion.

Learning outcomes for the students suggest deeper insight and understanding, as captured in the following observations:

Although I have been keeping a journal frequently through the semester, I never realized how strong a team was until I wrote my reflection paper. The paper helped organize my thoughts and made it very clear to me that there is a tremendous power in an interdisciplinary team.

In general, the reflection papers were another worthwhile portion [of the course] due to the fact that they made you think deeper about certain topics that you made note of in your journal. It was not always easy to reflect on certain matters, but in the process of actually sitting down and thinking about certain team-related issues I was able to better understand a lot of the course concepts. My reflection papers were where I made the majority of my conclusions regarding the course and how it could be applied to actual situations.

These comments suggest that the papers provide an enhancement of the reflective process through an additional and expanded opportunity for the students to delve more deeply into the observational and thought processes represented in their journals, to recognize patterns of growth and development in the experiences of the course over time.

Implications and recommendations

Though a key factor in learning in general and especially in interprofessional teamwork learning, reflection has been inadequately explored in the IPE literature in terms of both its theoretical and its practical implications. This discussion has attempted to highlight its central importance and to explore what it means and how it can be encouraged. The implications of this analysis include: (i) encouraging transformative learning, (ii) addressing intrapersonal and interpersonal dimensions, (iii) creating a place, a space, and a time for reflection, and (iv) fostering further research on the processes necessary for effective IPE.
Transformative learning

First of all, reflection is essential for the type of transformative learning required in IPE in which the participant achieves metacognitive competence by thinking about his or her own thinking and that of others. This “stepping outside” of one’s own cognitive and normative maps that provide the basis for one’s own self and profession, and beginning to understand how other team members and professions see themselves, is a key learning outcome for IPE. While IPE is often described as “occasions when two or more professions learn with, from, and about each other to improve collaboration and the quality of care,” it also paradoxically requires the development of self-insight and understanding – a fact that is often overlooked and not discussed as a critical component of teamwork learning. For example, in my IPE course I have had students tell me that they really did not know themselves (with regard to their teamwork skills) and their profession (in terms of how they see the world) until they took my course. As a result, they learned as much about themselves as about the other students from different backgrounds.

Thus, effective IPE relies on achieving metacognitive competence regarding oneself, the other professions on the team, and the team itself. Importantly, this theoretical insight needs to be embodied in actual instructional methods that encourage the application of these principles to the “real world” of education. The use of self-assessment instruments, journaling, and reflection papers have all proven to be effective methods to achieve this outcome, and it is recommended that IPE advocates apply these and similar methods as a key component of the effective teaching of teamwork skills.

Intrapersonal and interpersonal dimensions

Secondly, and as a corollary, reflection involves both intrapersonal and interpersonal dimensions, including the element of conflict. Specific methods, such as journaling, should be used to encourage intrapersonal reflection; that is, introspection on oneself and one’s traits and qualities related to collaboration and teamwork – including how one deals with and addresses conflict, or how one sees oneself as a team leader. Similarly, self-assessments related to personality type, learning style preferences, conflict management skills, and leadership ability should be utilized as an aid to understanding oneself. In addition, the outcomes of such assessments can be shared in a group, providing important insight into why others behave the way they do in terms of such characteristics as their personalities and leadership styles. This dual quality of reflection, as both intra- and interpersonal, is related to the concepts of metacognitive competence and transformative learning explored earlier – again combining theory and practice in teaching reflective skills in IPE settings.

A place, a space, and a time for reflection

Thirdly, effective reflection requires a place, a space, and a time for it to occur. Self-assessments, journals, and reflection papers are all methods that I have used, but there are undoubtedly others that may have similar impacts on learning in IPE. The important insight, however, is that there needs to be a mechanism and the encouragement for it to occur. Just as the learning in IPE is socially determined – in the sense that the educational outcomes rely on the process of collaborating for their attainment – so too is the learning dependent on processes that channel reflection in the direction of awareness of oneself and of others. These processes are built around specific, concrete activities or assignments, such as keeping a journal. Thus, it is recommended that IPE instructors consciously develop
methods to foster the essential reflective processes necessary for effective learning of teamwork skills and that these be built into courses and workshops designed to foster IPP in the clinical setting.

Further research

Finally, as more attention and resources are devoted to supporting successful IPE leading to effective IPP, more research is needed into studying the kinds of learning processes (such as reflection) that lead to the optimal development of knowledge and skills for collaborative practice. This “looking inside the educational box” requires asking researchable questions about the means and methods that are most effective in IPE settings for ensuring the attainment of the tools essential for IPP after graduation and licensure. For example, what are the most effective methods for encouraging reflection among participants in an IPE program? Are there different levels of reflection that need to be attained for IPE to be effective? Importantly, this recommendation is based on a broader recognition of the need to devote more attention to both theory and research in both IPE and IPP.

In summary, at its heart IPE is a journey, not an outcome. The collaborative and experiential learning at the core of IPE requires reflection as one of its essential components. This discussion has provided a closer examination of what such reflection can and should entail – both theoretically and practically. As a key element of transformative learning, reflection emerges as the conceptual underpinning of effective instruction for teamwork. For this reason, “reflecting on reflection” can lead us to new and better methods for IPE and, ultimately, improved outcomes in IPP.

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