Conscious Competence in Interprofessional Learning in Healthcare Education

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**Categories:** Educational Strategies, Educational Theory

Received: 12/02/2018  
Published: 15/02/2018

**Abstract**

The delivery of effective, high-quality patient care is a highly complex activity, demanding health and social care professionals to collaborate in an effective manner. Interprofessional learning (IPL) is professionally relevant, intellectually stimulating and evidence based. New learning paradigms for healthcare professionals explore new ways to combine expertise, delivering IPL programmes where patient safety and quality of care can be improved (WHO 2010). Intervening early in the health professional's career with collaborative activities with IPL is now considered important in healthcare training. Development of multidisciplinary student centred ideas hopefully results in the enhancement of patient-centred care. Conscious competence in understanding the benefits of IPL is needed to recognise those that are naïve to IPL and competent professionals who are able to design new curricular and deliver training to address unconscious incompetence to IPL. There are many diverse theories applied to IPL where theory is observation of practice, confirmed by practice. Much development and consolidation of IPL theory is needed.

No one healthcare profession can give complete healthcare single-handed.

**Keywords:** Interprofessional learning, collaboration, healthcare professionals, human factors, healthcare cultural barriers

**Defining interprofessional learning, collaboration and practice**

Working with other disciplines clearly instils a mutual respect of other professionals with shared values, who perform effectively in different team roles and provide patient-centred care that is safe, timely, efficient, effective and equitable. (Barr H, Low H, 2012)

Firstly, to establish a definition of Interprofessional Learning (IPL), which is when individuals improve knowledge and competence during interprofessional education. Interprofessional education (IPE) occurs when two or more professions learn, with or about each other, aiming to improve interprofessional collaboration (IPC) and the quality
of care (CAIPE, 2008). IPE in health professions pursues the goal of enabling IPC (CAIPE, 2011). Some core competencies have been identified for interprofessional practice.

Intervening early in healthcare training is considered important in healthcare education within the health professionals’ career pathway, using collaborative activities and IPL. Experienced professionals who engage in advanced professional practice by continued professional development (CPD) are considered to be advanced practitioners.

Effective teaching is an essential requirement for effective IT. When addressing an interprofessional curriculum to deal with differences as well as the interprofessional commonalities, common broad headings and knowledge bases need to be identified. The different cognitive maps of the different disciplines need to be understood in order to differentiate the teaching for each of the professional groups, which may have alternative starting points and abilities (Anderson E, 2009; Ruiz MG, 2013).

Sharing knowledge, skills and attitudes from different perspectives, where excellent learning relationships develop, is highly beneficial to improving interprofessional practice (IPP) where IPL compliments IPP.

‘Whenever people listen to one another humbly and openly, their shared values and aspirations become all the more apparent. Diversity is no longer seen as a threat, but as a source of enrichment.’ (Pope Francis).

Collaboration between health care professions is not always such standard practice and the developments of multidisciplinary ideas, with the enhancement of patient-centred care, are the main benefits to these working relationships. Working with other disciplines required the mutual respect of shared values. Collaboration between optometry and ophthalmology is generally standard practice but collaborations between optometry and other health care professions are not so common. Similarly, dentists refer patients to clinical consultants when they observe signs and symptoms of diseases, such as, cancer.

**Values, ethics and team building**

Considering the values and ethics associated with IPL involves participants gaining mutual respect for each other and their roles and responsibilities but also in shared values and concern for their patients. Being clear about the respective roles that each professional plays, in responsively addressing the needs of the patients, is an important factor in understanding respective responsibilities. Performing effectively and equitably in different team roles, providing patient-centred care, in an efficient way, can be extremely effective professional behaviour. Building teams in this way requires an understanding of team dynamics and leadership values. A new openness, enabling social influence allowing for adjustment is required. Enthusiastic attitudes to new ways of working and novel experiences towards new organisational goals, that embrace new concepts are important, where professional stereotypes are not reinforced. Five elements have been identified to support this; participation, training in group skills, networking, information sharing and lastly critical reflection (Glikey MB, 2006).

The delivery of effective, high quality patient care is a very complex activity, demanding health and social care professionals to collaborate in an effective manner that is professionally relevant, intellectually stimulating and evidence based (Hammick M, 2007).

‘All health professionals should be educated to deliver patient-centered care as members of an interprofessional team, emphasizing evidence-based practice, quality improvement approaches, and informatics.’ (Institute of Medicine Committee on the Health Professions Education Summit, 2003).
The deficiency of team skill development in undergraduate training for healthcare professionals is apparent and most of these skills are learnt 'on the job'. When undertaking year one problem based learning (PBL) sessions for medical students, we always made a point of referring to the interprofessional team as a clinical skills and professional learning issue where skills and roles where identified, in different circumstances. Introducing the interprofessional context to their learning enabled students to become aware of IPP at an early stage, especially is some students could contribute to the discussion some personal experiences from working in a healthcare environment. However, considering the number of learning issues generated by the group and the time constraints to address them, some students did not appreciate these discussions. Perhaps, interprofessional student tutorials would value the discussions on the healthcare team to be more relevant. This is an area to investigate further (Low H. Stone J. (2009). One recent study addresses the attributes of good doctors includes non-cognitive attributes where ability to be a good team player scored quite highly (Lambe P. Bristow D, 2010).

A study of an effective healthcare team, has highlighted perceptional differences between male and female health service managers that may influence the behaviours in the team, ultimately affecting their team effectiveness. There are gender differences in the perceptions of effective teamwork competencies. The female participators in one study gained their power from personal characteristics and tended to be more transformational and negotiate their position, with positive attitudes and self-awareness of their strengths and weaknesses being apparent. The male leaders however, were more transactional in their attitude identifying an ability to influence as a key teamwork skill rather than negotiate. (Interprofessional Education Collaborative Expert Panel, 2011; Leggat SG, 2007).

Teamwork that shares complimentary competencies with sustained collaborative practice towards common goals is considered to be best practice in the clinical arena. The team dynamics is so important in building the necessary values and desired relationships, required for IPL and IPP to take place. The understanding of team formation, not only from the leaders of the team but also from the team members, is a key to its success (Mullins LJ, 2005). The model proposed for group formation by Bruce Tuckman describes the forming of good team dynamics, where it is possible to help a new team to become effective through understanding of roles within the team. Tuckman's group dynamics is one of the most popular of the theoretical models (Tuckman 1965, 84). During the first stage of group ‘forming’, there is considerable testing in order to identify the boundaries of intrapersonal and task behaviours, establishing group leadership orientation and dependant followers. The second stage of ‘storming’ is where interpersonal issues polarise, often accompanied by conflict with an emotional response to differences. As new roles are established and the group responds cohesively new standards evolve and this is described as ‘norming’, thus resistance is overcome. There is also a freedom at this stage to express intimate personal opinions with relationships established and resistance overcome. During the fourth stage, interpersonal structures are established and the group is described as ‘performing’. The group is focussed on the task and have flexible and functional. A fifth stage was added in 1977 of ‘adjourning’ or sometimes called grieving or mourning, where roles are terminated and the task is completed (Tuckman and Jenson 1977). This model is linear with successive stages whereas other group dynamic models describe a cyclical process and do not necessarily proceed in a linear fashion (Forsyth, D. R.1990, 1998). Bales, R. F. (1965)

‘... the sum total of the possessions, ways of thinking and behaviour which distinguishes one group of people from another and which tend to be passed down from generation to generation ...’ (Colin Murray Parkes 1997).

When these group dynamic principles are applied to IPL, considering the cross professional activities ventured by different health professions, key hindrances come into play, such as, historical and cultural factors. Culture is described as the social heritage of a community (Hall P, 2005). The evolution of professional cultures has developed as the individual professions have developed and are influenced by gender and social class issues. Some critics of healthcare state that the professions ‘monopolize knowledge and mystify their expertise for purposes of power and
control’ (Illich I, 1970; Hall P, 2005). There are clearly distinct professional boundaries for each healthcare profession with a heritage of values, beliefs, attitudes, customs and behaviours (Hinshelwood RD, Skogstad W, 2000).

Barriers to interprofessional learning, historical and cultural

‘such things as attitudes and beliefs, patterns of relationship, the psychosocial context in which we work and how people collaborate in doing it.’ (Isabel Menzies Lyth).

Menzies Lyth’s ideas were about how institutions develop and the roles and work techniques in a cultural context. She believed that it is very difficult to change established institutions.

‘Anxiety has been a central issue, how anxiety, its experience and expression and the related defences, adaptations and sublimations are a major factor in determining personal and institutional behaviour.’ (Isabel Menzies Lyth).

Research continues to suggest that collaboration between these health professionals can be problematic and that professional jealousies can come to the fore when these groups coalesce. It is reported that there is a level of discomfort in working and communicating with other healthcare practitioners, particularly at the training stage (Pippa Hall, 2005; Hinshelwood, RD, Skogstad W, 2000). Comprehending the concept of forming and storming must be key factors to take into account for persevering with IPL and multi-disciplinary education (MDE) activities. Identifying barriers and devising strategies to overcome them are important areas for development with this regard. It also must be recognised that there is a dynamic nature of many healthcare teams due to frequent changes to the team. Sometimes training rotations or new individuals involved in projects can mean that team members need to form quickly and efficiently, integrating in an effective manner. Healthcare teams are often complex with this regard and have unclear boundaries (Stanton E, Lemer C, 2010).

Different university regulations have alternative methods of study and assessment, both within university disciplines and between universities. Hafferty suggests that there is a hidden curriculum that needs to be identified and considered. Four areas have been mentioned, institutional policies, evaluation activities, resource allocation decisions and institutional “slang” (Hafferty FW, 1998). Within the clinical workplace, some gaps in collaboration were found around role clarification and collaborative leadership (Hepp SL, 2015). Networking between clusters has been described as ‘bridging capital’, enabling individuals to profit from resources and new knowledge not accessible within their own professional group or discipline. (Stanton E, 2010). Further, Stanton speaks of a new model of professionalism that is evolving by working in a multidisciplinary way. The new model places a stronger emphasis on accountability, which recognizes the benefits of creating a different dynamic between patients and professionals, assuming a greater sense of responsibility for healthcare quality (Stanton E, 2011).

Exploitation of opportunities that ease the perceived barriers and constraints of collaboration, in healthcare, should improve healthcare through the enhanced relationships developed through the IPL experience.

Delivering interprofessional learning in healthcare training

PBL is an excellent vehicle to deliver collaboration in IPL and MDE. IPL and PBL are described as a marriage made in heaven by Dhalgren (Dhalgren 2009). Other activities that promote co-construction of knowledge between
professions are those using role-play exercises and, indeed, role reversal in some of these sessions, promoting a deeper understanding of skills and responsibilities of other colleagues in a healthcare team. The use of case studies to be explored by mixed groups of healthcare roles in workshops and seminars can enlighten participants to the alternative perspectives owned by each professional role (Low H, Stone J, 2009).

The small group setting is an ideal environment where students can share their knowledge. We often learn best with other people, as learning is a social activity for many students. It is tremendously exciting to consider the possibilities of interdisciplinary opportunities in health care professional training.

Overcoming the early stages of inter-professional co-operation of forming and storming in the development of collaborative learning communities, provides deepened inter-professional understanding and improved group cohesion when roles are established and the group performs effectively. Developing relationships that share intimate story telling of experiences and trust are also an aid to memory in student learning (Paliadelis PS, 2015).

One anecdotal example of IPL in the context of a PBL group was reported in a Middle Eastern University, where medical students joined nurses in PBL sessions, the medics were not comfortable with the situation whereas the nurses enjoyed the experience immensely. There are cultural gender issues with this scenario as well as professional differences, which may ‘muddy the waters’ as to its suitability as a valid example of barriers to overcome (P Hall 2005).

As a personal observation, medical students in PBL sessions, who had previous nursing experience on hospital wards, have commented on the dynamics between nurses and doctors and expressed the value of a highly experienced nurse to a junior doctor. They have an excellent understanding of respecting the experience, knowledge and skills of different members of the team, whereas medical students without this previous hospital experience express surprise that professionals, who are not trained doctors, can contribute so knowledgably and share skills within their role in the medical team. Anecdotally, nurses have remarked that doctors who have early nursing experience make much better doctors. A recent study explores these attitudes showing significant differences between students from different healthcare professions (Maharajan MK, 2017).

Some obvious examples of shared workshop sessions for all healthcare professionals could be resuscitation, first aid, health and safety or manual handling sessions. Anatomy and physiology is shared by many of the professions and combinations of different healthcare students could share case study workshops. A shared lecture by guest speakers on current issues in a social context is an environment that may initiate networking relationships. Also extracurricular, shared community action experiences with mixed professional groups, that do not directly align with one particular profession, would be a useful activity.

Considering the different kinds of combinations and dynamics of inter-professional teams mean that the student experience will not be static over their training. This fluidity may be disruptive but is more reflective of healthcare teams in the workplace as they tend to be affected by rotations in training and other staff changes (Stanton 2010, Freeman S, 2010).

Although aligning professional programmes can be problematic, one of the tasks for the academic collaboration is in the remodelling of the curriculum for content structure and scheduling with shared study blocks. One obvious shared objective is that all learning is patient and student-centred, however, each discipline requires an extended scaffolded progression within their specific discipline (Hogan K, 1997).

Just as Tuckman’s group dynamic theory applies to IPL with healthcare students, so it probably applies to separate healthcare curricular leads for each profession or discipline. Joint ventures require the innovative team to overcome
cultural barriers and, sometimes, interprofessional jealousies. Meeting in a social context may help to overcome this, developing good relationships by gaining trust and mutual understanding is a key step in the academic interprofessional group forming process. The task of this group of academics would be to explore opportunities for IPL, to identify specific barriers and determine strategies to overcome them for their own collaborative activities. Once achieved, they arrange interprofessional sessions for their students. This multidisciplinary action-planning team assess a starting point and the required differentiation of delivery, using their respective complimentary skills. In this capacity, leadership could be a shared activity with a shared set of performance goals and where accountability can be collective (Greenberg 2003).

It is possible to have shared learning objectives, resources, materials, framework and developmental process for multiple combinations of healthcare professions, bringing economical savings to the universities concerned.

The focus of medical educational scholarship of discovery into IPL integrates fresh insights from other disciplines (Bligh J, Brice J, 2009). Democratic leadership to manage the change, required for IPL, needs to give a clear vision communicated with meaning and purpose. Active listening to all concerned is essential, taking on board all points of view and any leadership team must be well prepared to face conflict and manage that well, especially in the ‘storming’ period of the collaboration (Khoshhal KI, Guraya SY, 2016). Evaluation of the process is important in order to determine the impact of change. Using qualitative methods, it can be determined what went well or needs to be changed and the experiences of the students. Staff feedback is also valuable to determine, while student assessments indicate how much the students have understood during the process.

‘Collaborations are the black holes of knowledge regimes. They willingly produce nothingness, opulence and ill behaviour. And it is their very vacuity that is their strength...It does not entail the transmission of something from those who have to those who do not, but rather the setting in motion of a chain of unforeseen accesses.’ (Florian Schneider).

Meaningful opportunities for professional engagement

Negotiation between the different disciplines is required in order to integrate interprofessional learning environments, making the best use of knowledge delivery and technical equipment for teaching with shared decision making. There are many meaningful opportunities for interprofessional engagement with this regard but this process takes time and tenacity in order to achieve the shared desired outcomes (Walsh K 2015). The leadership teams who are making decisions should also be interdisciplinary from their participating health professional schools (Hall LW 2014). Professional development for staff is also important, not only for working in interdisciplinary leadership teams but also for student supervision in an interdisciplinary environment (Martin P 2017). Several academic institutions run masters programmes on inter-professional collaboration.

Academic interdisciplinary healthcare teams have organisational goals that have social and cultural influence on the outcomes. Aiming for an improved openness with an increase in shared sophisticated concepts of working relationships in the healthcare environment between these teams is crucial to interprofessional learning. Cultivating trust and respect with mutual awareness that counters ignorance, prejudice and rivalry, contributes to the process of culturally constructed learning, as a result of considering other different professional perspectives (Barr H, 2016, Barr and Gray 2013).

‘Interdependence in learning may pave the way for interdependence in practice.........’ (Barr H).
Key pedagogical competencies for the interprofessional medial educator

The role of the medical educator in this innovative environment is multifaceted with key pedagogical competencies (Houldsworth 2016). The goals that we set should inspire, motivate, stretch and challenge all the students regardless of their career pathway. It is important to consider curriculum development changes that have an element of risk, the impact of which must be carefully assessed and evaluated for the impact that it has on student learning.

Consciously competent interprofessional practitioners are needed, who can recognize where professionals are unconscious of their incompetence with regard to interprofessional learning. Trained reflectively competent experts in this field are able to alert and educate other healthcare professionals to a new understanding about interprofessional learning, developing a new curriculum in order to address these needs (Howell WS, 1982). (Figure 1)

It is generally recognized that assessment is an extrinsic motivation to a student's sense of achievement but sometimes assessment can make the experience intrinsic and may be a motivation for students to engage in IPL by designing formative or summative ways of measuring developmental progress (Hudson JN, Bristow DR, 2006).
Interprofessional group assessments, where teamwork can be assessed or monitored, is one way forward. As part of the evaluation process, it is important to assess the impact of IPL on the experience of the patients their treatment and their safety. Thus longitudinal evaluation studies are needed to inform the development of interprofessional learning.

A key area of IPL for improved IPC is improved communication, using a shared language and vocabulary within an enriched curriculum, where materials and resources are shared, may give substantial economic advantages to the University. Along with shared values there are common objectives and frameworks for the developmental processes. There will also be a mutual respect and understanding of perspectives, roles and responsibilities (Houldsworth A, 2016). However, a substantial amount of time and staffing is required for the development and teaching of the learning sessions by different disciplines, requiring much organization and co-ordination (Wilson R, 2015), which may account for the heterogeneity of IPL inclusion in healthcare professions (Mett M, 2016). In a recent study, despite a shared narrative of common purpose between cardiology teams and nephrology teams, fluid management tools and techniques formed sites of collaborative tension. In particular, care activities involved asynchronous clinical interpretations, geographically distributed specialist care, fragmented forms of communication, and uncertainty due to clinical complexity. These practices of interprofessional engagement potentially highlight some of the current difficulties in IPC and some of the tensions that can present within intra/interprofessional care for patients with complex, chronic disease (McDougall A, Goldszmidt M, Kinsella EA, Smith S, Lingard L. 2016).

**Theoretical underpinning of interprofessional education**

Although there is considerable interest in the theoretical underpinning of IPE and some tentative models have been suggested for this subject in healthcare professions, much further development is needed to evolve the theory and practice surrounding this subject (Hean S, 2009, 2016). Hean suggests that adult learning theory, and exploring the rationale and importance of problem solving, facilitation and scaffolding are required in the design of interprofessional curricula (Hean S, 2013). West-Burnham’s concept of shallow, deep and profound learning in adult educational theory may be a relevant concept to consider here (West-Burnham J, Coates M, 2005). (Figure 2)
What is Interprofessional Learning for Healthcare Professions?

**What?**

- Shallow
  - Rote learning recall without understanding
  - Less application in clinical practice or understanding interprofessional collaboration
  - Basic knowledge and professional practice met

- Deep
  - Knowledge with understanding and reflection
  - Interprofessional engagement understanding roles and responsibilities in clinical environment
  - Co-construction of knowledge
  - IP collegiate practice
  - Learning communities
  - Competency based
  - Intrinsic motivation

- Profound
  - Intuitive thinking
  - Independently creative
  - Advanced professional Practitioners
  - Interprofessional understanding
  - Competent HCT
  - Improved patient outcomes
  - Enhanced working relationships
  - Moral motivation

**How?**

- Didactic
- Experiential learning
- Advanced practice
- Independent SDL

**Why?**

Figure 2. Overview of effect of interprofessional learning on healthcare team training
Adapted from Modes of learning (West-Burnham & Coates 2005) HCT, healthcare teams; SDL, self directed learning; IP, interprofessional
As IPL evolves, two key families of learning theory have been associated with IPL, including behaviourism and constructivism (social and cognitive). Understanding the relationship between these theories and how they relate to learning outcomes in IPL may facilitate further the development of IPL in healthcare professions (Hean S, 2009).

Theory is informed by practice and professional knowledge of interprofessional learning is being created as interprofessional collaborative learning is practiced. Theory is observation of practice, which is then confirmed by practice and there are many diverse theories being applied to IPL, including aspects of anthropology education, psychology, sociology and other academic disciplines (Barr H, 2013).

Thus, in order to improve healthcare through relationships, we need to exploit the opportunities that are available and ease the constraints that are encountered.

Improving healthcare through inter-professional relationships and partnerships in sharing IPL sites between educational and clinical leaders, are key factors in the development of IPL (Hall and Zieler 2015).

Concluding statement

After all it should be noted but no one healthcare profession can give complete healthcare single-handed. Today, there is a renewed desire for primary and secondary healthcare along with post treatment social care to coordinate more effectively in our society. Interactions that involve the quality of care needs for safe-guarding children, community mental health services, older people's services and services for disabled children require seamless multi-professional teams (Carpenter, J. & Dickinson, H. (2008), Canadian Interprofessional Health Collaborative. (2010).

"Alone we can do so little; together we can do so much" (Helen Keller).

Take Home Messages

- Defining interprofessional learning, education, collaboration and practice
- Exploring core competencies for Interprofessional learning
- Team building and dynamics applied to interdisciplinary learning
- Gender differences in the perceptions of effective teamwork competencies
- Barriers to collaboration and historical and development of ‘bridging capital’
- Multidisciplinary action planning and educational scholarship of interprofessional learning
- Further development is needed to evolve the theory and practice

Notes On Contributors

Dr Houldsworth is an experienced, effective and enthusiastic university lecturer in medical science subjects, a Chartered Scientist with a PhD in biomedical science and an international research reputation with extensive interprofessional experience, both in research and teaching. She has extensive skills and knowledge in immunology, physiology and education and an excellent reputation with peers and students. A highly organised and efficient individual, whose thorough and precise approach to projects has yielded excellent results. Recent achievements with
my current employer include curriculum development and assessment design with excellent feedback from students and peers while lecturing in Exeter and Plymouth University medical schools.

Acknowledgements

This project is self funded based on personal professional experiences while researching and teaching in interprofessional environments associated with Plymouth University and Derriford Hospital.

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Quotations

Pope Francis
Ann Landers
Menzies Lyth
Parkes et al.
Florian Schneider
Barr H.
Helen Keller

Appendices

Declarations

The author has declared that there are no conflicts of interest.

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