Chapter 1

General introduction

‘Coming together is a beginning. Keeping together is progress. Working together is success.’

Henry Ford
Background

Globally, healthcare is facing an increasing demand on its resources, expanding technology and more specialisation among its professionals. The World Health Organization (WHO) has signalled the growth of ageing populations with more comorbidity as a challenge that might overwhelm health systems (WHO, 2006). Provide good-quality healthcare requires the patient’s problems to be addressed in an integrated manner, rather than healthcare providers (HCPs) working in isolation to offer just part of the solution. Interprofessional education (IPE) is considered a necessary step in preparing a ‘collaborative practice-ready’ health workforce that is better prepared to respond to local health needs (Frenk et al, 2010; WHO, 2010a). Interprofessional collaboration (IPC) is a specific form of cooperation: not only do HCPs work together, but different professions share the same goal and align their efforts to achieve it (WHO, 2006). IPE concerns the learning with, from, and about other professions, to enable effective IPC and improve health outcomes (WHO, 2010a).

The research in this thesis was conducted in the Netherlands and started in 2012. In the same year, the audit committee for medical schools (QANU) published its ‘State of the Art’ report, stating that none of the schools exhibited initiatives in IPE (Hillen, 2012).

Learning for interprofessional collaboration: Interprofessional education

In healthcare education, traditionally a substantial part of the training is through workplace learning (Dornan et al, 2007; Manley et al, 2009). Several reports and studies have indicated that in healthcare the collaboration between HCPs from different training and professional backgrounds is difficult (Lingard, 2016; McGrail et al, 2009; Romijn et al, 2018). IPC is intended to have all HCPs share their perspectives and values in the decision-making process, both among areas of specialist expertise and with the individual patient (Vyt, 2008). To achieve this, HCPs must be trained in knowledge about the other healthcare disciplines and achieve interprofessional competencies. In many healthcare systems, HCPs have yet to find ways and means to enhance their IPC (Chan & Wood, 2010; Paradis & Whitehead, 2018; van der Lee et al, 2011). This implies that a suboptimal healthcare system shares the responsibility of educating students for IPC.

As defined by the Centre for the Advancement of Interprofessional Education (CAIPE),¹ IPE (training for IPC) occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care (Barr, 2002; CAIPE).

D’Amour and Oandasan (2005) have devised a framework to put IPE in the perspective of IPC. Both concepts are placed within their social setting and respective culture (D’Amour & Oandasan, 2005). This framework, named the ‘Interprofessional education for collaborative patient-centred practice’ (framework for IECPCP), is illustrated by two circles and their interdependence (see Figure 1). One circle shows the educational system – centred around the learner, surrounded by institutional and teaching factors. The other circle shows the professional system – centred around the patient, surrounded by organisational and interactional factors. Because of the interdependency of IPE and IPC in this model, intended interprofessional learning (IPL) outcomes from the educational system eventually improve outcomes from the professional system regarding patient-centred care and better outcomes for the providers of care and their organisations. Conversely, it is possible that

¹ https://www.caipe.org/
better IPC in the professional system forms a good role model for students during workplace learning (D’Amour & Oandasan, 2005).

**Figure 1.** Framework for interprofessional education for collaborative patient-centred practice (with permission from the authors)(D’Amour & Oandasan, 2005).

The IECPCP framework makes it possible to look at IPL and IPC in three ways: from a sociological, a psychological, and an educational angle. The sociological angle concerns the interactions between stakeholders and their organisations, as investigated by various researchers (Kitto et al, 2011; Reeves et al, 2009). Looking at IPE and IPC from the psychological angle concerns the beliefs and changes in behaviour; some principles and implications have been described in the literature (Sargeant, 2009). The educational perspective on IPC and IPE integrates elements from the sociological and psychological stances: the interactions, the learning, and teaching guidance, which are described for medical education in general (e.g. (Kaufman et al, 2000) and for IPE specifically (e.g. (Anderson et al, 2009).

This thesis focuses on the affective domain of IPL, using the educational perspective to examine interactions, learning, and teaching guidance. We aimed to investigate the elements in IPL and IPC that have an impact on the emotions of students, using the framework for IECPCP.

The following components of the IECPCP framework will be addressed in this thesis: the learner, teaching factors, and various aspects of the learning outcomes.
Interprofessional education: The learner

The ability to learn requires knowledge and skills in language and thinking, techniques to plan and evaluate learning, and positive attitudes and emotions towards learning (Conley & French, 2014). Learning and teaching are therefore considered to span the following three domains (ten Cate et al, 2004):

- **Cognitive domain** – the knowledge and skills to process information and the knowledge as a result of this processing, i.e. content.
- **Metacognitive domain** – the skills to plan study activities, to evaluate study progress and to monitor where gaps in knowledge exist, belong to the metacognitive regulation activities.
- **Affective domain** – the attitudes, motivation and values involved in learning (Miller, 2005).

Although the ‘cognitive and affective domains interact significantly in instruction and learning’ (Martin & Briggs, 1986, p.3), any behaviour that has an emotional component lies within the affective domain.

Attitudes will generally be stronger when the link between their cognitive and affective components is consciously recalled (See et al, 2008). In this thesis, three affective variables and their association with IPL were explored: readiness for IPL, empathy, and motivation.

Readiness for interprofessional learning

Readiness is defined as the willingness to learn with, from, and about other professions in combination with developing a professional identity. Therefore, it is considered a specific affective learning outcome of IPL. The concept was introduced by Parsell and Bligh, when they developed the Readiness for Interprofessional Learning Scale (RIPLS) (Parsell & Bligh, 1999). Readiness for IPL encompasses three components that impact on attitudes (Morison et al, 2010):

- **Knowledge and skills** for collaborative learning, teamwork, and more specifically being aware of the roles and responsibilities of others.
- **Professional identity**, specifically in relation to other professions.
- **Personal development**, which results from IPL.

Empathy

Quality healthcare requires the HCP to understand the concerns, experiences, and perspectives of the patient; communicate this understanding; and convey the intention to help (Hojat & LaNoue, 2014a). In the patient–HCP relationship, empathy is mutually beneficial: Costa et al. note that perceived empathy from the HCP is associated with greater patient satisfaction. This may improve adherence to therapy and the patient’s trust in the HCP’s expertise – which in turn can encourage the exchange of information, facilitating diagnosis and shared decision making. For the HCP, improved patient cooperation and trust may encourage more confident clinical judgment and increase job satisfaction (Costa et al, 2017). Martela et al (2016) describe ‘prosocial’ behaviour – spontaneous interpersonal support – which has a similar positive effect and is associated with enhanced well-being (Martela & Ryan, 2016).
Motivation

The ‘Self-Determination Theory’ (SDT) (Ryan & Deci, 2000b) describes several states of motivation, distinguished by the way it is regulated or by a lack of it. Rigby and Ryan (2018) describe a motivational quality continuum (Rigby & Ryan, 2018):

- **Amotivation** – a lack of motivation.
- **External pressure** – externally regulated, the person anticipates rewards or punishments from others.
- **Internal pressure** – or introjected regulation: the person has internal pressure for carrying out an activity or a set of tasks.
- **Personal value** – or integrated regulation: the person engages in an activity because the activity has personal value, or the activity forms an integral part of the person’s value system.
- **Intrinsic motivation** – the activity in itself holds the person’s interest.

When an activity has **personal value** for a person, it means that their behaviour is aligned with their own intentions (Figure 2).

For the best quality of motivation to occur, three basic psychological needs must be fulfilled (Deci & Ryan, 2002):

- The need for **autonomy** (the perception of choice)
- The need for **competence** (feeling capable of doing something)
- The need for **relatedness** (emotional support of relevant others; in education, these are usually peers and teachers).

Higher motivational quality is suggested to lead to higher study effort, more meaningful or deeper learning, and better academic performance (Kusurkar et al, 2011; Ratelle et al, 2007; Vansteenkiste et al, 2009).

**Figure 2. Motivational quality (MQ) continuum.**

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Interprofessional education: The teaching factors

In our focus on factors that enhance IPE, paying attention to the role of the teacher is paramount. The Learning-Oriented Teaching (LOT) model (ten Cate et al, 2004) describes how teachers can activate students for their learning. This model offers an answer to three questions from a student:
What to learn? Why learn? How to learn? – and three questions from a teacher: How to teach? How to motivate a student? How to guide a student in learning? Through phases of guided learning, shared guidance of learning, and student-guided learning, an LOT approach aims to prepare students for independent learning after graduation.

A specific way of guidance is scaffolding the learning of students, aiming at ‘just-in-time’ support which is tailored to the needs of a student or a small group of students. These needs are regarding the what, why, and how of learning (van de Pol et al, 2010). Strand et al. (2015) draw attention to preconceptions about learning that supervisors may have, such as ‘learning and teaching about and for work’ or ‘learning in and through supported participation’. Furthermore, the authors point out that empirical studies have demonstrated that participation without intentional guidance does not result in effective learning in the workplace (Strand et al, 2015, p.532). Chipchase et al. (2012) studied how medical and allied health students and supervisors perceived interprofessional clinical supervision. Their findings suggest that having supervisors from a different professional background than the student can result in more diverse learning strategies, including self-directed learning and peer guidance through formal and informal discussions (Chipchase et al, 2012). In this way, interprofessional supervision can enhance active learning. To effectively scaffold the learning, it is important for supervisors to obtain a clear picture of the student’s level of development, in order to adapt their level of guidance appropriately to encourage active learning. However, in a mixed-methods study, clinical supervisors reported that they felt least capable to assist students in exploring strengths, weaknesses, and learning goals compared with their self-identified relatively strong interpersonal skills (Bearman et al, 2018).

**Interprofessional education: Towards learning outcomes**

In the framework for IECPC (Figure 1; (D’ Amour & Oandasan, 2005)) the learning outcomes are professional beliefs and attitudes, as well as the capability to provide patient-centred care. In researching this thesis, we specifically investigated elements of professional identity development and interprofessional communication.

**Professional identity**

Students develop their professional identity while acquiring the required knowledge and skills to specialise their chosen field. Professional identity development concerns individual identity, which at any moment in time is influenced and developed through components in three domains (Cruess et al, 2015):

- **Individual domain** – personal characteristics, beliefs about the self, and the effect of life experiences.
- **Relational domain** – relations with significant others (e.g. mentors and peers).
- **Collective domain** – the identity of the group this individual belongs to or wishes to join.

An individual’s identification with a social group – in this case, a chosen profession – results in a specific cognitive map directed towards that goal (Langendyk et al, 2015). The establishment of a professional identity occurs predominantly by socialisation into the profession and is influenced by factors such as life experiences, personality traits, and development across the career and life span (Hershey, 2007). Professional identity results from learners interacting with individuals both within their professional education programme (faculty and students) and in professional practice (Arndt et al, 2009).
Interprofessional communication

To facilitate interaction among multidisciplinary groups, IPC has been part of the set of competencies that were set for the training of medical doctors (Neufeld et al, 1998), in which being a team member is described as an important component of IPC, along with clear patient communication. In 2015, the ability to communicate with other professions was explicitly added to the role of Collaborator in the CanMEDs2 (Frank et al, 2015) for medical students. It is also found in the 2016 version of the set of nursing competencies (see(CZO, 2016)). However, this set of competencies is often trained in professional silos: medical students go to medical school, while nursing and allied health students are educated separately. A professional training brings about ‘professional socialisation’, through which an individual acquires the culture of a particular professional group and context. It also involves ‘learning the language’ of a profession. By learning the common parlance of their discipline, students construct identities as members of that profession (Brown & Duguid, 1991). Next to having a language of its own, a professional culture also implies that each profession has its own perspective on the problem(s) of the patient. According to Pecukonis et al. (2008), professional culture begins during the education of HCPs and is then transferred into the practice setting. Among others, a HCP-specific culture determines accepted customs, core values, symbols, what symptoms mean, and how treatment success is defined. Therefore, it is argued that profession-centrism must be counterbalanced by curricula that promote interprofessional cultural competence (Pecukonis et al, 2008), or by development of an ‘interprofessional identity’ (Khalili et al, 2013) – that is, being comfortable with the customs, values, symbols, and so on that make up the cultures of other groups. In this respect, IPE is vital for IPC. In 2011, the Interprofessional Education Expert Panel published the core competencies for IPC (IPEC, 2011), which were updated 5 years later (IPEC, 2016). This set of competencies is intended to serve as an ‘interface’ for all professions.

In an attempt to standardise terminology across professions, the WHO introduced the International Classification of Functioning, Disability and Health (ICF), to serve as a conceptual framework for patient-centred care, taking a holistic and integrated approach to the individual’s biological, psychological, social, and spiritual needs (WHO, 2001). To give an example: patients with diabetes type II may suffer not only from high blood glucose levels (endocrine, digestive, and metabolic) but also from overweight (influenced by metabolic and possibly environmental factors) and long-term effects of this condition, causing diabetic ulcers on their feet and the risk of neuropathological problems. Against such a complex background, a whole range of professional perspectives must be combined to deliver optimal patient-centred care. Thus, the ICF was intended as a catalyst for HCPs to become acquainted with the roles and responsibilities of other professions. Professionals could combine their perspectives: the ICF could facilitate IPC by offering the classification as a common language (Allan et al, 2006; Snyman et al, 2016). Demographic trends, including the rise in obesity and increasingly ageing populations, have resulted in HCPs being confronted with patients whose comorbidities cannot be addressed by just one individual professional. Without IPC, an HCP can be limited to offering the care they were trained to provide, rather than the care the patient really needs. Recognising the importance of IPE to enhance interprofessional practice (IPP), a multitude of IPE initiatives have been implemented. However, reliable evidence that IPE leads to behaviour changes subsequently leading to IPP is difficult to measure and therefore hard to locate in the existing literature.

2 CanMEDs is the set of competencies or roles: medical expert, communicator, collaborator, manager, health advocate, scholar, and professional.
Evaluations of interprofessional initiatives

Outcome evaluations, to determine whether a student has successfully achieved the defined learning objectives for a programme, are usually done in the short term, because of funding, difficulties following up on learners and the multitude of potentially confounding variables that can diminish the wider value of the initiative. Many researchers insist that IPE and IPC should be evaluated in terms of their impact on improved population health, reduced healthcare costs, and better alignment of health professions education and clinical practice (Freeth et al, 2008; Reeves S et al, 2013; Thistlethwaite et al, 2015). In a perspective paper, Lutfiyya et al. (2016) note that although various research methods are available, any meaningful evaluation of the influence of IPE or IPC on patient outcomes would require more carefully formulated research questions and larger study numbers (Lutfiyya et al, 2016). Reviewing 90 studies, Thistlethwaite et al. (2015) found most IPE evaluations to be at the Kirkpatrick 2a level and level 2b (see Table 1). Level 2a entails ‘Changes in perception or attitude towards the value and/or use of team approaches to caring for a specific client group’ whereas level 2b concerns knowledge and skills linked to IPC (Hammick et al, 2007b; Thistlethwaite et al, 2015). Such evaluations do not inform us about the mechanisms by which IPE can be successful or unsuccessful (Reeves S et al, 2013).

Table 1. Kirkpatrick’s four-level model to evaluate educational interventions (Hammick et al, 2007).

<table>
<thead>
<tr>
<th>Level</th>
<th>Educational outcome</th>
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<tbody>
<tr>
<td>1</td>
<td>Learner reaction</td>
</tr>
<tr>
<td>2a</td>
<td>Modification of learner attitudes and perceptions</td>
</tr>
<tr>
<td>2b</td>
<td>Learner acquisition of knowledge and skills</td>
</tr>
<tr>
<td>3</td>
<td>Change in learner behaviour</td>
</tr>
<tr>
<td>4a</td>
<td>Change in organisational practice; Wider changes in the organisation and delivery of care</td>
</tr>
<tr>
<td>4b</td>
<td>Benefits to patients/ clients; Improvements in health or well-being of patients/clients</td>
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Research questions

The broad research questions that informed this thesis were: What are facilitators of and barriers to IPE? How can IPE impact on the value system of students and result in (intentions for) interprofessional collaboration? More specific research questions for each study evolved as follows:

- Chapter 2 – What are the perceptions and attitudes of nursing and medical students and residents towards interprofessional education?
- Chapter 3 – How are empathy, motivation, and professional identity associated with readiness for interprofessional learning in medical students?
- Chapter 4 – Which elements of the IPE ward experience affect feelings of autonomy, competence, and/or relatedness? Which elements hold value for the students, thus influencing their motivation for interprofessional collaboration or interprofessional practice in the future?
- Chapter 5 – How do supervisors experience the scaffolding of students’ clinical reasoning to come to interprofessional patient care plans? How do supervisors perceive the effects of this scaffolding on students?
**Outline of this thesis**

In this thesis, the affective component of interprofessional learning is explored through a review of the literature. Qualitative methods are used to gain an insight into the mechanisms of interprofessional learning and teaching. A quantitative method is used to provide insight into whether and how readiness for interprofessional learning is associated with concepts that are well known in healthcare and healthcare education.

Chapter 2 reports on a review of the literature, which identified 65 studies regarding IPE initiatives in the hospital setting. Facilitators of and barriers to IPE for residents and medical/nursing students participating in IPE together with students from other professions were investigated.

In chapter 3, a quantitative method is applied to elucidate the notion of ‘readiness for interprofessional learning’ by studying its association with concepts that are already well established in healthcare education. These are surveyed among medical students in all study years who have no official prior experience with IPE.

In chapter 4, Self-Determination Theory is used as a theoretical framework to focus on the motivation of students for learning with, from, and about other professions in the setting of an IPE ward. Through interviews with students, we explored whether they perceive value in an IPE ward experience. Theoretically, a student who recognises the benefits of IPE will integrate its importance into their value system, and be more likely to engage in interprofessional collaboration in the future. Interviews with the IPE ward supervisors were used to corroborate or contrast with feedback from the students.

Chapter 5 reports on midwifery and nursing supervisors involved in the guidance of students regarding the decision-making processes on an obstetric ward, where the physician was the project leader and medical supervisor. We were interested in whether and how supervisors could help to scaffold the learning of students from another profession and the interprofessional learning of all students.

Finally, in chapter 6, the findings with regards to the affective domain in interprofessional learning and teaching are considered in light of the existing body of literature. We describe the seven IPE characteristics that we found to positively impact on the affective factors of interprofessional learning. This chapter further includes a reflection on the strengths and limitations of the thesis. This chapter also explores the practical implications of the findings and suggests areas for further research.

As this thesis consists of papers published in or submitted to peer-reviewed journals, some repetition across the chapters is inevitable.
References


Interprofessional education: effects on professional practice and healthcare outcomes (update). (2013).IOM.


