Extending conceptual understanding: how Interprofessional Education influences affective domain development

Abstract

Background:

Interprofessional learning (IPL) can influence affective domain development of students, through teaching activities that facilitate learning with, from and about other professions. Current quantitative evidence offers limited explanation of how this learning is achieved within IPL programmes. This original paper tests a conceptual framework drawn from theories on IPL and affective domain development (attitudes, values and behaviours) to explain what works for whom, when and in what circumstances.

Methods: The objectives of the study were twofold: to evaluate the impact of the IPL programme on the student's attitudes and values, and identify behaviour changes in clinical practice towards interprofessional working. Using an action research approach, based in practice, an IPL programme was delivered over six weeks. Students from five professional disciplines: nursing, radiography, physiotherapy, social work, and podiatry (n=63) participated over the two action research cycles and in semi structured focus groups (n=37).

Results: The recorded personal experiences of the IPL activities on the students were examined in relation to the: type of activity; impact on the affective domain of learning (attitude, value, or behaviour) and self-reported outcome on application to their practice. Modification in affective domain development was measured to identification or internalisation stage for 30 of the students. Self-reported outcomes on application to

practice included direct impact on patient care, personal resilience building, improved communication and ability to challenge practice.

Conclusion: This paper presents a conceptual framework not evident in current research, in regards to what IPL works for whom, in what circumstances and when. IPL Activities that address a personal reward or incentive and are delivered over 4 weeks, imitating 'circles of care,' that explore self-assessment, team building and reflection can lead to sustained change in values, attitudes and behaviours.

Keywords Action Research, Interprofessional Education, Interprofessional learning, Health and Social care, Collaboration.

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Introduction: *IPE and IPL – what works for whom, when*

The World Health Organization (WHO, 2010) recognises Interprofessional Education (IPE) as a central component in strengthening health systems, responding to the increasing complexity within the health and social care sector. The assumption being that if health professionals are trained together, they should be better placed to work collaboratively post qualifying. Elements of IPE are encouraged in all aspects of health and social care and mandatory within many pre-qualifying educational programmes (Forte and Fowler 2009; Cusack and O'Donoghue 2012). The significance of IPE in undergraduate programmes is

recognized globally and has been implemented and evaluated in many developed countries notably: Canada, Australia, the United States of America, and across Europe (Sunguya, Hinthong, Jimbo, and Yasuoka 2014). At least two thirds of Universities, in the United Kingdom (UK), include IPE within their health and social care programmes, a significant component of professional training (Barr, Helme, and D'Avray 2014).

Evidence from robust IPE evaluations provide a strong rationale to support delivery (Thistlethwaite, Kumar, Moran, Saunders, and Carr 2015; Reeves, Boet, Ziegler, and Kitto 2015) with IPE activities shown to impact on professional knowledge and skills, change attitudes, and improve communication and confidence (Reeves, Perrier, Goldman, Freeth, and Zwarenstein 2013). Interprofessional Learning (IPL), the desired outcome of IPE, has been demonstrated to reduce clinical errors and improve patient outcomes (Oandasan and Reeves 2005a; Oanadsan and Reeves, 2005b). Despite this, current evidence does not explain how IPL influences a change in student attitudes and values; *'what works for whom and in what circumstances'* (Olson and Bialocerkowski 2015, p.242). Evidence is inconclusive with respect to IPE achieving sustained attitude, value and behaviour change on university based students (Lapkin, Levett-Jones, and Gilligan 2013). One off IPE events are unlikely to change attitudes whereas, repeated IPE or a longitudinal programme will lead to attitudinal change (Stephens 2015). There is however, still limited evidence that demonstrates the transferability of IPE outcomes to a student's clinical practice setting (Lapkin et al. 2013). This paper provides new evidence.

Background: Measuring IPL outcomes and affective domain learning

Educational taxonomies often underpin health and social care programmes from curriculum design, developing learning objectives, and measuring attainments (Bloom, Mesia, and Krathwohl 1964; Steinaker and Bell 1979; Anderson and Krathwohl 2001). Taxonomies are based upon the characteristics of knowledge, skills, and attitudes otherwise known as the domains of cognitive, psychomotor and affective learning. The affective domain is considered by many as vague or ill defined (Neumann and Forsyth 2008, Brett et al. 2003). However, a systematic review, identified through content analysis that the most common components of the affective domain are the development of attitudes, values, motivation, beliefs, and emotions (Savickienė 2010). That is attitudes can be defined as both positive, and negative appraisal of an object, individual, group, and theory (Savickienė 2010). Values, a concept, or ideal that one feels intensely about, which affects the way one comprehends or construes events (Kaplan 1986). Motivation, a deliberate form of positive, or negative engagement with the learning process (Brett et al. 2003). Beliefs, the individual's perception of reality (Maier-Lorentz 1999) and emotions, which when defined comprise of three subcomponents; feelings, cognition and behaviour (Rungapadiachy 1999). According to Epstein (1977) learning in the affective domain can be characterised by a three-staged process that measures the influence of types of communication on the development and assessment of student values, attitudes and behaviour (Table 1).

Table 1: Three-staged process for affective domain learning here

The first two stages of development (compliance and identification) are types of conformity and can revert to previously held attitudes and values, as they are both extrinsically motivated and require constant reinforcement. However, the third stage internalisation is when a student embraces the new values and they become part of their belief system (Epstein 1977). Limitations of the framework are apparent: it was developed in 1959 and the original study tested the framework on the effect of communications and social influence on black Americans before the process of desegregation. Other frameworks for pharmacists, social workers and nurses have subsequently been developed however, non-provide a measure for the degree of affective domain development nor have been tested in the field (Brown and Ferril's 2009; Neuman, Allen, and Friedman 2010; Miller 2010).

Grounded in theories of social psychology and applied to nurse education from an original research study (Kelman 1958) stages one and two of Epstein's framework are attitudinal, however stage three is value based. Within the Theory of Planned Behaviour (Azjen 1989) attitudes are affected by social norms and factors that limit translating attitude into behaviour. For example, if colleagues all agree that IPW is marvellous students will normally confirm to that attitude to meet perceived pressure from social norms. However, if students are subsequently mistreated by other professions they may change their attitude, as this impacts on how they behave to those who have little regard for them. Values on the other hand attain a higher order in social psychology. Internalisation is reached as attitudes and values become congruent. Therefore, because one professional from a different group to the students is rude and offensive, the student would recognise this is not representative of others and their positive attitude to IPW remains intact.

Research studies measuring the outcomes of IPE on attitudinal change (Norris et al. 2015; Reid, Bruce, Allstaff, and McLernan 2006; Parsell and Bligh 1999) utilise pre-validated interprofessional instruments which limit the psychometric integrity, validity or reliability of the tool (Oates and Davidson 2015). Predominantly these instruments rely on collecting quantitative data at attitudinal level only and are therefore unable to reveal subtle and intricate nuances in affective domain development captured using qualitative methods (Schreiber et al. 2014). A qualitative approach that is more reflexive, drawing on theories measuring attitudinal and behavioural change would be more sensitive. Epstein's (1977) conceptual framework has been used to measure change in values and attitudes of 755 student nurses across seven countries, engaging in enrichment activities including IPE/L. A judgement was made about the level of change in student's values, attitudes and beliefs by extracting student citations from the included papers and when applied within a meta synthesis the findings provided a deeper understanding of the impact IPE/L activities has on student affective domain development (Stephens, 2015). Four dependent variables were uncovered which were mapped in diagrammatic form to aid further analysis *'Educational activities, based on cultural encounters within real clinical situations, that are repeated over time and enable the student to evaluate and reflect on their own learning directly influence affective domain development'* (p.8)

This paper reports the findings of a study that tested and extended the application of Epstein's (1977) conceptual framework in practice: measuring the influence of an IPL programme on student affective domain development, assessing changes in values, attitudes, and student behaviour.

IPL programme

Academics and Practice Education Facilitators (PEF's) (University and National Health Service based) developed an IPL programme for final year pre-registration/qualification students (Chaffe et al. 2013). The programme was built upon theories later encapsulated by Barr's (2013, p.4) *'coherent, compatible and inclusive frame of reference'* including: adult learning (Knowles 1984), reflection (Schon 1983), contact theory (Tajfel 1981), identity theory (Vygotsky 1978), and situated learning (Lave and Wenger, 1990). Learning outcomes focused on interprofessional knowledge, attitudes, and skills (Figure 1); objectives of the programme were exploration of communication, team building, therapeutic relationships, and clinical/professional skills. The programme was six weeks in length and each session lasted two hours with weekly homework activities. The IPL programme was delivered across three NHS sites, in two cycles: first in 2012 and again in 2014. IPE activity that preceded the programme was varied from a module in year one for some healthcare professions, to one off days for others.

Figure 1: Structure of the IPL programme for final year pre-registration students here

Methods

The project aim was to evaluate the impact of the IPL programme on the student's affective domain development, and the objectives twofold:

- Evaluate the impact of the IPL programme on the student's attitudes and values.
- Evaluate the impact of the IPL programme on self-reported behaviour changes in clinical practice towards IPW.

Action research was the chosen method of inquiry as the project involved the participation and partnership of stakeholders from higher education and practice who co-produced, delivered, evaluated and reshaped the IPL programme to transform attitude change (Stringer 2014). Using action cycles the researchers explored the impact of the IPL programme on attitudes and behaviours of students, using the findings from the first cycle to shape the second. Advantages of action research in this context included: high level findings of direct practical relevance and application of the project to academics and practice education staff; the interrogation of real time qualitative data by all members of the group developing research capabilities of those involved; and increased understanding of programme issues and impact of IPL activities within education and practice arenas (Waterman and Hope 2008). The complexity of action research was challenging, particularly experiencing delays working within a group involving stakeholders and organisations as membership fluctuated (Bennet 2004). Each study member had to become reflective and analytical about their own practice in the development, delivery and evaluation of the study programme and the impact on practice. This is based upon the element of 'reconnaissance', within action research cycles requiring analysis and reflection of the situation instead of simply investigating the issue (Elliott 1991). There was a need to recognise that homogeneity across groups can lead to competing, contested and changing versions of the programme and lack of repeatability of the studies (Bryman and Bell 2011).

Sampling

The self-selecting target population consisted of 700 third year students across a range of pre-registration programmes within the professions of nursing (adult, child, mental health, and learning disabilities), physiotherapy, podiatry, radiography, and social work. Some of

the students were undertaking a joint programme of study (learning disability nursing/social work).

In total over the two IPL programme cycles 63 students from five different professions were recruited and allocated to one of the three NHS sites, where the programme was delivered. Fifty-five were women and eight men; aged between 20-48 years (Table 2). The sample size, rather than seeking generalisation, provided rich qualitative data related to the impact on affective domain development, student experience, learning and impact of the IPL programme (Baker and Edwards 2012).

Table 2: Student Sample demographics here

Data collection

A total of six focus groups were conducted (three during each programme/action cycle at week six) to provide an opportunity for students to describe their experiences in a time limited, discursive and interactive environment (Gustavsen 2001). Group interviews enabled the researchers to explore similarities and differences in student attitudes and values towards IPW and the impact of any behaviour change on clinical practice.

Focus groups were: held on NHS sites, semi-structured, 40 – 45 minutes in length, digitally recorded (with consent) and confidentiality pre/post session reinforced. Interviews were facilitated by academics and clinicians involved in programme development and delivery, but to avoid bias, not undertaken at the site where data was collated. An interview guide was used to keep the discussion focussed across the three groups, but allowed students flexibility to share their experience about the content, style of delivery, added value, and

involvement in the programme. Discussions were recorded and transcribed verbatim, but also managed to ensure one or two individuals did not dominate the sessions inhibiting others speaking (Holloway and Wheeler 2010).

Data analysis

Epstein's (1977) three stage process was used as an analytical framework and applied to the collective student responses from the two action research cycles. For example, the personal experiences of the IPL activities on the students were examined in relation to the type of activity, the impact on the affective domain of learning (attitude, value, or behaviour), the self-reported outcome on application to their practice, then a stage from Epstein's framework coded to each comment. Table 3 provides examples of data collated; to assess the influence of the programme on the changes in values, attitudes, and behaviour of the students involved. Rigour in this process was established through a second independent researcher analysis, establishing thematic and analytical code consensus (Higginbottom 1998). For example it was agreed that internalisation was measured when a quotation from a student reported a change in values or behaviours that was congruent with their value system

Table 3: Impact on the affective domain and self-reported application to clinical practice

Ethical considerations

Ethical approval was granted from the University's Ethical Approval Panel and from the NHS National Research Ethics Service (NRES). Written and verbal consent was obtained from all the participants in accordance with the Data Protection Act (1998).

Findings and Discussion

The findings and discussion within the paper are presented concurrently within three core themes:

- Affective domain development through IPL: what works for who, when.
- Outcomes on patient/client care - evidencing impact of the IPL.
- Conceptual framework for IPL and affective domain development.

Affective domain development using IPL: what works for who when

Timing of any IPE was initially recommended after qualification *'when practitioners had found their respective identities and had experience under their belts to share'* (Barr 2002, p.8). Since 2002, IPE has progressed to include all years of undergraduate, pre-registration education programmes (Barr and Low 2013). Within this study however, final year students reinforced the appropriate timing of the programme close to qualification suggesting a maturity and readiness to look outward, receptive and confident to take part in interprofessional learning (Barr 2002).

The action research cycle findings demonstrated ways in which the affective domain, particularly student attitudes and values to IPW and changes in self-reported behaviour in practice, were modified as direct result of IPL. The first cycle of action research established four key themes of what themes the IPL programme should encompass and these were used as a model for the second cycle. From data saturation four sub-themes emerged: Identifying what good collaborative practice is; Professional identity; Learning alliance; and Circles of care

Identifying what good collaborative practice is

Significant modification of affective domain to internalisation stage from both cycles of the study was influenced by the student's comments about their observations and reflections of themselves and others working interprofessionally in practice. The students related their thoughts to theories of IPL that they had been introduced to during their attendance on the programme, for example Table 3 (3.7) an adult student nurse reported on seeing the theories of learning styles and team roles come alive. Students wanted to know what good collaborative practice was to assist in their future careers and the delivery of team work, joining the programme to learn more about different professional roles and responsibilities:

'*I felt in a better position to appreciate the diverse roles of other professions, which would help when making referrals and when in multidisciplinary meetings.'* (S2)

One student who had a negative interprofessional experience in practice during the programme surmised her thoughts:

'I think it was interesting looking at the different dynamics of a team and looking at how, like, why some teams work and some teams might not work so well and looking at the reason behind that and how you can…like you said before about your team, how you can help yourself, either to fit into that team to find a role that you can take to be part of that team or if it doesn't work so much and you're kind of an outsider to the team, you can kind of understand why; it might not be, like, necessarily a fault of your own, it might just be the way that that team works' (S20)

The IPL programme enabled the students to identify what good collaborative practice was, having the 'space' to discuss with others and reflect on what they saw in practice. In both cycles of the study the students reported that when they returned to their placement areas they could reflect in action from the knowledge and skills they had developed (Table 3, 3.6 and 3.10 adult student nurses). One student (S30) reflected on her observations of role blurring between an Occupational Therapist a physiotherapist and nursing staff recognising and conceptualising this concept from the explicit theoretical discussions in the programme (Barr and Lowe, 2013); IPW becoming explicit not implicit.

"The one that I'm on now is really good because the Physio's and the Occupational Therapists are based on the ward and the Nurses, staff, I mean, they all really work together as a team and it's not: Oh well that's job, that's my job, they all pitch in, so, it has been good to see it in a positive light after attending these sessions as well" (S4)

Professional identity

Affective domain development to identification and internalisation stage occurred in both cycles of the programme from activities that developed self-awareness and how this might impact on working together for the benefit of patients and clients. The changes students described demonstrated an element of reflective practice was being used to determine professional growth.

Students demonstrated affective domain development to identification level as comments suggested maintenance of a satisfying relationship within the group. They remarked that the programme (learning style, personality type, team work and self-perception inventories applied to team work activities) increased self-awareness – being final level students they had a good understanding of their professional identity;

> '*…more self-aware…because I came in here feeling a lot more like a professional… having fun, but representing our individual professions as well"* (S7)
> '*I think it increases self-awareness, it's been a big thing for me'* (S13)

Evidence of affective domain development to internalisation level was demonstrated when a student described how one of the activities from the programme had helped her realise she had the potential for leadership, which surprised her:

> *'I completed a ward round audit…the activities I've done from here…made me more aware of my abilities and the importance of communication with the doctors… Normally I wouldn't communicate that much with the doctors…I had to ensure …links…between nurses and the doctors and whichever patient were involved …It was useful' (S13)*

Affective domain development for some was being reinforced, from personal insight into a nurse's role and responsibilities a physiotherapy student's views were changing as a result of persuasion (Table 3, 3.2). For others it was being embraced as it fell within the student's scope of acceptance (Table 3.3 Social Work student). Unexpected outcomes that were reported included increased confidence (Table 3.5 children's and young people student nurse). One student (Table 3, 3.3 Social Work student) realised that others saw the group member differently to how they saw themselves; enhanced by attending the six week programme and given time to reflect on her findings.

According to Lingard et al. (2002) when students are educated in silos the resulting impact in clinical practice is that professionals have narrow or misrepresented views of each other's skills, roles and identities. Attending and participating in the IPL programme helped through 'discursive constructions' to move the students attitudes, values and beliefs about each other and their professional identities from 'legitimate peripheral participation' (p. 733) to the hidden territory of interprofessional relations and clearer understanding of how important each profession is to the outcomes of patients.

In the first cycle delivering the programme within a professional setting received mixed results, whilst some deemed the setting as irrelevant, in the second cycle students suggested the practice setting was important. Within the practice setting students retained their professional identities, whereas a course delivered at the university often the 'student identity' dominates. One student (S7) described having a '*different mindset… a more professional mindset''* when engaging in the IPL sessions in practice compared to university. The clinical setting being where, students feel like a professional, behave and look like one too (Walker et al. 2014). Students (in the third year) were at a stage in their development

where they could identify with their respective professions. Being situated in clinical practice with the session delivered by practice and academic staff, professional identity did not fragment, that is the students identified as themselves because of the situation as professionals and not as students (Brennan and Timmins 2012). This enhanced their ability to explore theory – practice gaps. This resulted in positive feedback in relation to location and impact on values, attitudes and behaviours: *'being in practice we were coming together as professionals rather than as students'* (S7).

Learning alliance

'Group dynamics' was a theme which emerged from the first cycle of action research, students reporting on being able to learn from, with, and about each other. Further analysis from cycle two transformed the theme to 'learning alliance' between students and facilitators. The group dynamics and flat hierarchy had considerable effect on the affective domain development of the students to internalisation stage. Students enjoyed the activities that required them to work in teams recognising that patients benefit from professionals working together:

> '*it's (working together) only going to be a positive outcome"* (S15)

Students appreciated the exercises where they learnt about different team roles and how they recognised the roles they themselves take on, as well as the roles that other members of the wider professional team occupy. Students commented on the positive dynamics within the groups, identifying they were better than teams in practice and/or university. One student reflected on previous experiences of group work:

> '*everyone is just arguing, fighting and crying and it's all going wrong, so it was nice to contribute where it is actually, like, oh this is how group work should be!'* (S1)

Students across groups agreed that they felt a sense of equality between the group facilitators and the group members:

> *'we have sat down together as a group of professionals and it is very equal, there is no hierarchy'* (S9)
>
> '*I didn't feel that anybody in the room treated us as though we were students really… lecturers or qualified nurses or whoever was in that room were all kind of equal'* (S5)

From the group analysis students indicated that as they approached registration they were now being taken seriously as a professional; their opinion mattered, leading to the confidence and ability to share knowledge and skills, which in turn changed attitudes about each other.

> *'It will help me be more relaxed and at ease now I am a third year about contacting somebody outside of my nursing environment', and 'I think it makes you aware of your limitations for example when I was asked to make a decision on a patient's care I was able to say well I'm not sure maybe I do need to pass it on' (S34)*

These beliefs and opinions from students are intricately linked to the work of Bourdieu (1977), how social order impacts on the opinions of the students being ready for collaborative learning. Developed from reflecting on the external social world and structures of their professional groups and practices, shaping their sense of their place within an interprofessional team. For example

> *'Before I used to like...you would see someone come in the ward maybe to see a patient you just greet them and they'll tell you what they are there for and that's it, but now you know you're able to ask them, you know have a proper conversation with them be curious about their role and what they are doing for your patient and hand that over' (S27)*

In the final year students, have learned to navigate the patterns of behaviour expected in the structured social space or field of their profession. The students had learned to respond and adapt to the new situations and reached a point ready to begin challenging this new understanding of themselves (Table 3, 3.11 adult student nurse). They knew who they were as a professional, but felt that to further develop their identity, the need to augment this with further interactions with others (Sutherland, Howard, and Markauskaite 2010).

The participant's rationale for attending the programme varied although there was consensus that the majority wished to learn more about other professions and reflect on practices previously observed.

'*That's pretty much the same reason why I joined as well'* (S10)

Others had enrolled on the programme to: add to their CV's or were encouraged by their personal tutor; and one to dismiss myths about theirs profession and develop positive attitudes about others.

From the focus group comments, it was noted that students had been affronted by previous practice encounters and saw this as an opportunity to help other professionals internalise new values about them (Epstein 1977). Their experiences had caused conflict between their current values, attitudes, and beliefs creating tension and anxiety, otherwise known as cognitive dissonance (Festinger 1957) and they reported a need to resolve the tension between their original beliefs and those causing distress. However instead of negatively reacting to the dissonance the students affected saw the programme as a positive output. It is recognised from the literature that IPE increases '*motivation, well-being, and retention*' (West, Guthrie, Dawson, Borill, and Carter 2006, p.4), however the actions of these students

also demonstrated emotional intelligence and maturity, the ability to critically think about one's actions and act in a compassionate way (Francis 2013).

Circles of care

Identified within the first cycle of action research was that participants began to appreciate the importance of IPW, which through comparative analysis across group interviews evolved into a theme named 'circles of care'. To impact on affective domain development and IPW practice an IPL programme should include members of the interprofessional team replicating the practice setting to enhance learning and impact the patients' journey through health and social care systems.

Affective domain development to identification stage was categorised in comments from the students as they discussed the way in which professionals should be encouraged to develop a broader perspective of each other's roles and different students (S2, S9, S17) reinforced that; *'the groups should have a broader representation of different professions.*' In particular, students mentioned professionals such as doctors, speech and language therapists, occupational therapists, and dieticians to help develop their knowledge and skills.

The impact of circles of care was important to gather appreciation and develop respect.

> *'For me personally, coming to this research programme has actually, changed my perception about other professionals, you know, to kind of look beyond the presenting scenario at the time and to appreciate other professionals involved and respect what they do and to be able to work together for the benefit of the client, the people'* (S2)

Students noted that an important member missing from the programme was a service user, reinforcing the significance of the patient voice.

> *'a case study example of a service user telling us their story and then we all work as a team to say what our role would be within that would have been useful to their development*' (S9)

Students had opportunities to communicate to their mentors/practice educators the learning they acquired from the programme when they returned to practice each week. Mentor/practice educator interest varied dramatically from post programme discussions to negative professionals considered *'stuck in their ways'*. The students expressed frustration and although they acknowledged there were those in practice who held these views, they were committed to developing positive relationships with the wider multi professional team to improve patient outcomes and team working. This demonstrated affective domain development to internalisation, instead of satisfying the culture of the ward, embracing the ethos of IPW.

> *'You know if I was to go in as a qualified nurse and not be one of these nurses to sit behind the desk I might have a few people turn their nose up at me but then ultimately they will sit there and realise well really I can't sit there and do nothing if she is one of those people that's up and about doing stuff and that has a ripple on effect because you'll have one more nurse that starts being more proactive and ultimately you have nursing assistants that do the same and then it will work out that within this one ward they are more proactive and it will work but it's just like a time thing and I suppose you've got to be one of them people to take that lead to make sure it does work' (S4)*

The findings of the two study cycles suggested it would be more appropriate in future IPL programmes if students imitated the '*circle of care'* for an individual patient's health care system. This may include *'patient, providers, other agents, and information repositories related to the patient'* (Price and Lau 2013, p.2). Using different case scenarios, students could attend the more relevant aspect of the programme that links to common circles of care they would experience, dependent upon their current placement setting or organisation speciality, thus increasing the effectiveness and application of IP learning.

As the students were all third years they were also experiencing a period of transition (Fisher 2000). They were beginning to see a new sense of purpose as registered practitioners and therefore when visualising this new image, understood that this required a change. For example, a podiatry student stated

> '*…maybe at the induction on your new job that part of that process of induction is ways to find out which services you will integrate with so that you can get to know them to give a better picture for your patients to experience'* (S10)

In the future, they would have to take responsibility for sustaining partnerships to meet the productivity of health and social care provision (Nursing and Midwifery Council 2015; Health and Care Professions Council 2008). The students understood that by enrolling on the programme they could grasp new knowledge from a transforming learning experience before their transition ended**.**

> *'For me I thought it would help me to work with other professions when I finally qualify so that's why I'm here mainly just to be a potentially better practitioner' (S21)*

Outcomes on patient/client care - evidencing impact of the IPL

Confidence and competence

All students reported that by attending the programme they had become more confident in their abilities to work with other professions. Two examples (Table 3, 3.8 & 3.9) relate to confidence in future communications and understanding each other's roles and responsibilities in the care of service users. However, the term confidence at this juncture requires further discussion. During the analysis, the researchers discussed what was meant by confidence from the focus group transcriptions and moderator notes; students interchangeably transposed the term confidence for competence and vice versa. Pfaff, Baxter, Jack, and Ploegg (2014) reported similar findings in their exploration of new nursing graduate's confidence in interprofessional collaboration. Confidence in interprofessional interactions can be increased using IPE but also competence is increased when students have repeated interprofessional experiences with the same professionals. Competence requires self-confidence (Bandura 1993), and students reported their self-efficacy and collective efficacy had increased through attending the IPL programme.

Self-reported application to practice

Within the 6-week period that the IPL programme was delivered attending students commented at the weekly debrief and reflection sessions how they were making an impact on patient outcomes from what they learnt. Evidence of such impact on professional practice and healthcare outcomes is lacking (Reeves et al. 2008).

For example, a Radiography student (Table 3, 3.9) who had become more self-aware of her role when attending to clients with learning disabilities used the knowledge gained from the programme to ask for the 'hospital passport'. This was a document with important information about the patient, in this case a young client, identifying their health and needs during their stay in hospital (Department of Health 2013).

A student nurse (Table 3, 3.11) who worked on a busy ward could identify what good collaborative practice should look like and reflected on how poor the interaction was within the staff team in which she was working. Greater self-awareness from homework activities and reflecting on this with the facilitators helped her to develop resilience not to own the emotional impact of this poor team work. She was then also able to positively challenge practice and develop her professional identity measuring this against the code of conduct in relation to acting as an advocate for patient care (NMC 2015). The learning alliance that had developed between the group members, and with the facilitators, also helped her to become secure in her own identity (Sutherland, Howard, and Markauskaite, 2010). The group gave her the chance to reflect on her experiences and albeit negative she was able to learn from this to develop coping strategies and resilience for the future (Jackson, Firtko and Edenborough 2007).

Conceptual framework for IPL and affective domain development

A conceptual framework emerged; a theoretical structure of assumptions, principles, and rules that holds together the ideas (Miles and Huberman 1994) of IPL and the impact on affective domain and behaviour change in IPW. Whilst, previous studies, demonstrate that undergraduate student's attitudes, values and behaviours towards IPW can be influenced by the delivery of IPL programmes, attitudinal change was often short-lived and data collated quantitative in nature. In this study relationships between what IPL works for whom, in what circumstances and when and the internalisation of new values, attitudes and behaviours have been uncovered using in-depth qualitative methods, providing new evidence not previously found (Table 3).

Figure 2: The Interprofessional Learning for Affective Domain Development Framework (IPL-ADD) here

The diagrammatic representation of the Interprofessional Learning for Affective Domain Development Framework (IPL-ADD) is shown above in Figure 2. Changes in attitudes, values and behaviours of undergraduate students from across different professions, was explored by examining what IPL works for whom, in what circumstances and when. From the focus group interviews student dialogue was concept mapped to structure the qualitative data and links were made across domains.

What IPL

A relationship emerged; that to reach internalisation of new attitudes, values and behaviours - self-assessment (professional identity), team building (learning alliance) and reflection had the most significant impact. Identification stage development transpired from students participating in any two of the IPL activities alongside reflection. Whereas, compliance was surprisingly reached from three or more activities, again alongside reflection.

For Whom

The students were from mixed professional groups and no specific group was seen to be more prevalent at the internalisation stage of affective domain development than another; despite adult student nurses being the largest represented profession. This prevalence of affective domain development changed at identification and compliance stage, with student nurses being the largest number affected. However what differed at each level of change in affective domain development was the student's purpose for attending the programme.

Student's identified as reaching the internalisation stage proffered in-depth reasons for joining the IPL programme and linked this to a personal reward or incentive. Whereas, those students at identification stage, offered a personal reason or incentive, but this was more superficial in rationale such as to help with an essay resubmission, or to boost their curriculum vitae. Students identified at compliance level gave reasons for signing on to the programme mainly because it was suggested by their friends or personal tutor.

In what circumstances

From this study clinical practice was the social space in which to deliver the programme and allowed the augmentation of 'circles of care' so that students could see which professions they need to consider in better outcomes for the patients in which they cared for. Being in practice they were coming together 'as professionals rather than as students' and not fragmenting their professional identity.

When

Being final year students strengthened the timing of the programme close to qualification, having learned to navigate the patterns of behaviour of their profession and reaching a point to begin challenging the new understanding of them.

Limitations

Although the sample was purposive and self-selecting, students who agreed to participate may have been more receptive to and aware of the potential benefits of collaborative learning. Studies of programmes, where attendance is a requirement of pre-registration

training, may provide contrasting results. Five professional groups were represented across the study. However, the individual groups did not contain the full range of these disciplines. Adult nursing students were heavily represented in two of the groups whereas podiatry and radiography students found themselves the sole representative of their profession, students identified this as a limitation of the programme. Including students on joint programmes does have implication as this group of students inherently have a readiness for interprofessional working. Using self-report behaviour change are not without weaknesses, such as room for response bias, acquiescent or extreme responding, self enhancement and lack of self-knowledge (McDonald 2008).

Conclusion

This paper draws together a conceptual framework, not currently described within the limited quantitative evidence base in the field of IPE. The study highlights relationships between what IPL works for whom, in what circumstances and when: useful evidence for HEI's across a range of settings in health and social care. Analysis and mapping of concepts would suggest that: the what, are activities that explore self-assessment (professional identity), team building (learning alliance) and reflection stimulate IPL. The who, IPL works for students of any profession who have a clear in-depth reason for joining the programme that links to a personal reward or incentive. The where, is IPL delivered in clinical practice imitating 'circles of care' over 4 weeks and the when is in the third year of an undergraduate programme. The outcome is sustained change in values, attitudes and behaviours, to internalisation stage of affective domain development.

Declarations of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

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