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Student experiences of undergraduate interprofessional education in Scotland: emerging views of teamwork and professional identity

Abstract

In 2005, Queen Margaret University (QMU) in Edinburgh launched its Interprofessional Education (IPE) modules, bringing together undergraduate students from eight different healthcare disciplines (occupational therapy, physiotherapy, speech and language therapy, nursing, dietetics, radiography, podiatry and audiology). IPE is increasingly becoming part of undergraduate healthcare programmes; however, there is a paucity of comprehensive evaluation research in this area. A programme of IPE evaluation is currently in place at QMU which aims to explore the views of undergraduate students and IPE tutors towards these new modules. This work is essential for module development and makes an important contribution to knowledge about IPE process and outcomes.

This paper outlines one part of the IPE evaluation at QMU. Selected findings from first year students are presented in relation to three student groups: physiotherapy, nursing and radiography. Quantitative and qualitative data are used to explore student perceptions of interprofessional teamwork and emerging professional identity. Relatively few studies use mixed methods in investigating undergraduate IPE (Freeth et al 2002).

Both qualitative and quantitative data demonstrated students had a positive view of teamwork and collaboration, associating this with enhanced patient care. In contrast, there were differences between disciplines in their views of professional roles and identities. Physiotherapy and nursing students clearly described what they perceived to be their distinct and valuable, 'profession related' qualities. Radiography students were less certain of their sense of professional identity, describing concern that other health care professionals may fail to value radiographers' contribution to teamwork and patient care.

In these early educational stages, students hold positive and negative views of their own and others' professional identities which may impact on how they 'learn with, from and about each other' (Barr 2002a). Within this paper we expand these findings in light of current research and explore the implications for pedagogical approaches and curriculum design.

Keywords: professional Identity, teamwork, interprofessional education, pedagogy

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Introduction

This paper presents an overview of the context within which IPE has been introduced at Queen Margaret University, Edinburgh. The nature of IPE evaluation at QMU is described before discussing some of the findings arising from mixed method IPE evaluations. The findings from three undergraduate health care programmes are highlighted demonstrating the contrasting student views on professional identity and roles. The pedagogical implications of these findings are discussed with regard to IPE module development and future research in this area.

Background to IPE at QMU, Scotland

Increasing attention is being given to interprofessional education (IPE) in the UK in response to initiatives to modernise the health service and enhance interprofessional working with its resultant positive impact on patient care (Barr, 2002b; Department of Health 2001; Department of Health, 2000; West and Slater, 1996). Institutions implementing IPE have focused on shared learning between the health and social care professions (Freeth et al, 2002), each having varied group membership depending on the range of courses offered by institutions.

IPE is relatively new in Scotland with a small number of programmes having been established in the last five years. Queen Margaret University commenced an undergraduate programme of IPE in 2005, involving the following health disciplines: occupational therapy, physiotherapy, speech and language therapy, nursing, dietetics, radiography, podiatry and audiology. The IPE modules, worth 20 credit points, run in each of the four undergraduate years and are focused on shared areas of professional practice including: inter-professional teamwork; professional roles and responsibility; professional identity; and ethics. The curriculum is designed to offer inter-disciplinary learning opportunities in which students can learn how to work with each other as well as learning from one another.

In each of the disciplines involved, the IPE module is embedded within the specialist programme curriculum requiring careful design to ensure curricular coherence. There are approximately 350 students in each year of IPE and the students are split into 16 groups of between 15 to 20 students from different disciplines in order to undertake group learning. The module is supported by the university's virtual learning environment (WebCT) where students can access resources such as case studies, reading lists, weblinks and video clips, as well as shared discussion areas.

In the first year, students focus on learning about teamwork and communication. The face-to-face contact time with students takes place predominantly in week seven of semester one, where students come together for a one week block of teaching, group work and activities. Teaching activities include fun exercises promoting and exploring team-working skills.

Evaluation and monitoring of IPE

The need for comprehensive monitoring and evaluation of the QMU IPE programme at undergraduate level is critical. Embedding IPE within the curriculum of eight different undergraduate programmes, involves investment of significant resources. Appropriate monitoring of student and staff experiences and outcomes is necessary to enable module development and critique.

Although there is some literature to support positive outcomes of IPE at undergraduate level (see for example, Cooper et al, 2005), it is recognised that the evidence base for undergraduate IPE is still relatively weak with a limited number of comprehensive, quality, longitudinal evaluations (Zwarenstein et al, 2005; Freeth et al, 2002).

At QMU, a programme of longitudinal evaluation is in progress, using both qualitative and quantitative methods to gather information about the following:

- Staff and students experiences of IPE (yearly data capture for all year groups);
- Students' perceptions of IPE and attitudes towards: team working, professional identity and roles and responsibilities (exploring student views of stereotypes of their own group (autostereotypes) and of others' professional groups (heterostereotypes) (Carpenter, 1995).

To capture data related to the module, level specific questionnaires are administered to staff and students. Information about students' attitudes towards IPE is generated through use of the Multiprofessional Shared Learning Questionnaire (MSLQ, Parsell and Bligh, 1999). The MSLQ is a 19-item Likert scale generating scores which can be interpreted as students' 'readiness' for interprofessional learning (Readiness for Interprofessionals Learning Scale; RIPLS). Three factors of 'readiness' are measured: (1) teamwork and collaboration, (2) professional identity and (3) roles and responsibilities. To enable students to use their own words to present their views about these issues, the MSLQ was supplemented with an open-ended questions section; each question being linked to one of the three factors of IPE related 'readiness'.

Methodology

All 359 students from the first year IPE cohort (2005-2006) at QMU were sampled. At the start of first year (prior to any IPE 'intervention'), the students were asked to complete the MSLQ. Students also completed a demographic profile sheet (items included: gender, age, number of years in education, experiences of working in healthcare). This process was repeated at the end of the IPE contact week when the students had experienced one week of IPE 'intervention' (academic week seven). At the end of the IPE contact week, the MSLQ was also accompanied by the three open-ended questions).

Ethical approval for the study was granted by QMU ethics committee. All participants received written information about the study and all participants provided written consent; it was highlighted that participation was voluntary and that they could withdraw at any time; confidentiality and anonymity were assured.

Quantitative data were entered into Microsoft Office Excel™ (2003) and descriptive statistics were generated relating to each discipline and the cohort as a whole. Items 10, 11 and 12 were negatively scored according to McFayden et al (2005).

All written responses to the open-ended questions were also entered into Excel™ which was used to facilitate qualitative interpretive analysis of content. The method of constant comparison (Strauss and Corbin, 1999) was used in addition to a *priori* category allocation of text associated with the three primary issues addressed by each question. Themes were generated from the text through analysing the findings both within disciplines and across disciplines. Themes were generated through an iterative process of peer review and discussion; five researchers were involved in these discussions.

Findings

In this paper, the findings for three health care groups are presented: radiography, nursing and physiotherapy. These groups have been selected because: they represent groups of relatively similar size and gender mix; they are groups who may work together in the clinical environment; these groups represent well the variety of views of professional identity demonstrated by different healthcare students; and all three professional groups were also investigated within the study by Adams et al (2006) enabling comparison of data.

Student profiles grouped by health care programme

Demographic details for the students who participated in the IPE evaluation are presented in Table 1.

Table 1: Demographic details for the first year nursing, radiography and physiotherapy students participating in the IPE evaluation

	Radiography	Nursing	Physiotherapy
Number in each year	46	59	62
Number attending IPE (% of total year group)	31 (67.4%)	44 (55%)	52 (83.9%)
Number returning unspoilt questionnaires	30	40	50
Female (%) Male (%)	22 (73.3%) 8 (26.7%)	38 (95%) 2 (5%)	41 (82%) 9 (18%)
Most common age category Number (%)	under 20 years 16 (53.3%)	under 20 years 27 (67.5%)	under 20 years 40 (80%)
Years in schooling Mean (SD)	13.8 (1.5)	14.0 (1.4)	13.6 (1.0)
Number with close family or friends in healthcare (%)	19 (63.3%)	26 (65%)	30 (60%)
Number previously employed in healthcare (%)	9 (30%)	15 (37.5%)	6 (12%)

The median value for each factor of the Multiprofessional Shared Learning Questionnaire (MSLQ) for radiography, nursing and physiotherapy students is shown in Table 2. The final column of Table 2 shows the threshold scores for each factor and corresponding Likert label.

Table 2: Median scores for each health care programme (nursing, radiography and physiotherapy) presented by 'factor' derived from the Multiprofessional Shared Learning Questionnaire (MSLQ)

	Radiography (n=30)	Nursing (n= 40)	Physiotherapy (n=50)	Likert score related watersheds
Factor 1: teamwork and collaboration Median score	36	37	37	9 strongly disagree 18 disagree 27 neutral 36 agree 45 strongly agree [9 questionnaire items]
Factor 2: professional identity Median score	25.5	28	28	7 strongly disagree 14 disagree 21 neutral 28 agree 35 strongly agree [7 questionnaire items]
Factor 3: roles and responsibility Median score	7.5	6	6	3 strongly disagree 6 disagree 9 neutral 12 agree 15 strongly agree [3 questionnaire items]

Interpretation of the findings

In this section, the median scores for the three factors represented within the MSLQ are discussed along with associated qualitative findings. Similarities and differences between the student groups are highlighted and quotations are used to illustrate key themes generated from the open-ended questions.

Teamwork and collaboration

Students from all three healthcare programmes scored positively in relation to attitudes towards acquiring skills of team working and collaboration. Scores of 36 and 37 indicate that the majority of students agree or strongly agree that learning with other healthcare students will promote good team working and associated team working skills which will ultimately benefit patient care. Qualitative themes supported the quantitative findings;

the primary theme across all three groups being: 'Effective team-working enhances clinical patient care'.

Overall, the majority of students reported that effective team work would improve patient care as well as benefit the healthcare professional through enhanced uni-professional and multi-professional communication. These findings also emphasise students' views that patients' complex needs can only be met through a team of collaborating clinicians with an array of knowledge and skills.

However, a number of written responses from student radiographers suggested that they anticipated some of their clinical work would be independent of other professional staff.

"Obviously teamwork is important but it has more meaning for some professions than others. As a therapeutic radiography student I don't feel I will spend a lot of time working with OTs [occupational therapists], physiotherapists and audiologists etc." [Student radiographer - Male – 50-59 years]

Professional identity

Students from nursing and physiotherapy programmes had median scores of 28; suggesting they feel relatively secure about their own professional identity, facilitating them in their interprofessional learning and problem solving. Higher scores for 'professional identity' are associated with a more positive view of learning together. Qualitative data supports the view that these students do have a relatively well developed sense of their respective professional identities; even at these very early stages of training. Physiotherapists identified their future professional role to be important, underpinned by knowledgeable and skillful clinicians, assuming a place as a valued health care team member.

"My profession is caring, knowledgeable, can make a difference to peoples lives. Is relevant to patients needs and in touch with patient's goals and ultimately can make a huge difference to people's quality of life." [Student physiotherapist – Female – 40-49 years]

"We are a caring and progressive profession who enjoy and benefit from teamwork and continuing professional development." [Student physiotherapist – Female – 35-39 years]

In contrast to data from the study undertaken by Adams et al (2006), nursing students were equally certain of their professional identity characteristics. The dominant feature was reference to their primary role in caring for others and their strong inter-personal skills to support this vital work. Some students also referred to their perception of the public's view of nurses:

"As I am training to become a nurse I have come up against the 'angels' stereotype. I believe that nurses should be seen as professionals rather than carers or 'angels' as there is so much training and expertise involved in becoming a nurse. Nurses are caring and do want to help others in need but they are also trained professionals." [Student nurse - Female- 25-29 years]

In contrast, radiography students scored 25.5 on the MSLQ, suggesting that they were less certain of their professional identity. The significance of the difference between groups cannot be determined by examining the numbers alone. Exploration of the

qualitative data highlighted an uncertainty for some within this group. The theme which captured this phenomenon was: 'Radiography – a fragile, uncertain early identity'. These students presented a variety of negative stereotypes of their profession they felt were held by others, for example, being viewed as “*button pushers*”, being viewed by others as less important than other members of the health care team. Radiography students wrote of others not understanding their roles, as well as some reporting that they were uncertain of their own future role at this stage.

“... since it is only week seven, I have a very vague idea about people in my profession,”
[Student radiographer – Female – less than 20 years]

From the data generated, it is not clear whether these views are shaped by experiences of working with other students or views they held before commencing their education programme; however, like all perceptions, it is likely that there are multiple influences. Studies in this area suggest that gender, experiences, the values and norms they are exposed to in daily life will all shape professional identity (Adams et al, 2006).

Roles and responsibilities

Only three items relate to roles and responsibilities; scores of around 6 or 7 suggest a trend towards feeling slight disagreement with the statements; this suggests students have a negative view of subservience, role uncertainty and superiority. The higher score for radiography students suggests a more neutral view than their nursing or physiotherapy colleagues, i.e. they neither agree nor disagree with questions related to their own or others' professional roles. Again, interpretation of these differences must be undertaken with caution given the moderate sample sizes, differences in sample numbers and limited number of items.

Analysis of the written statements highlights that students are aware of hierarchy within healthcare; mentioning the possibility of medical staff assuming more senior roles within a health care team. They also acknowledged the likelihood that, at different times, different health professionals would assume different roles and responsibilities. Overall, the view was united, that every health professional should be respected for the skills they provided and that belittling the role of others was unhelpful.

“Some people might have more responsibility than me eg doctors, but I don't think anyone should ever be made to feel inferior as everyone works hard to achieve the same goal in the end.” [Student radiographer – Female – 20-24 years]

Implications for pedagogical approaches and curriculum design

Some authors support the early introduction of IPE (Cooper et al, 2005), whilst others have criticised use of IPE in pre-registration programmes (Zwarenstein et al, 2005). QMU students also raised concerns about being involved in IPE in their first year:

“I feel it would be more beneficial if started in 2nd year as we would know our roles better.” [Student Radiographer – Female – 20-24 years].

However, students have begun to form views of professional identities prior to university and by the early stages of undergraduate study, although, the extent to which students have formed views of their own and others' professional identities varies greatly. Our

data suggests that radiography students are less certain of their professional identity at the early stages of IPE than the physiotherapy and nursing students. The differences in the level of certainty about, and differing nature of, professional identities are likely to impact on how students 'learn with, from and about each other' (Barr, 2002b).

These differences suggest the need for sensitivity in facilitating group work experiences within the early stages of IPE, where many students will form and adapt their views of their own and others' identities. There is a danger of forming negative stereotypes unless pedagogical approaches adopted in IPE are planned with care. As Freeth et al (2005) state:

"An unsatisfactory learning experience is unlikely to yield the desired learning and/or behavioural change. If the unsatisfactory learning experience is interprofessional in nature, the negative feelings it produces in participants may become more generally associated with interprofessional collaboration..." (Freeth et al, 2005:48).

Indeed, the following quote suggests that one QMU nursing student felt strong negative emotions after her early experiences of IPE:

"I was outraged and shocked to hear some physios...being derogatory about nurses and complaining that they've been told to communicate with them in the work place. I thought, 'no wonder nurses are stereotyped as less important when people think like this 6 weeks into their education'. I feel all have roles of support and mutual cooperation. I only hope those with prejudiced views learn something from the next four years of IPE otherwise I hope I don't have the misfortune to work with such narrow-minded 'professionals' once I qualify. Healthcare is a tough enough game without inter-professional back stabbing." [Student Nurse – Female – 30-34 years].

Students who are less sure of their own role and identity may need support and encouragement to elucidate what it is that makes their discipline unique and what the added value is that they bring to the inter-disciplinary team. Those who appear more assured may need to be questioned about their views and they may need to be encouraged to see the added value others bring. It is important to try to ensure a balance of the different disciplines in each of the groups of students working together, although this is not always easy or possible to achieve.

Enquiry based learning that requires the contribution of all of the professions in order to complete tasks, can help to underline the necessary contributions of each profession. This can be, for example, through the use of case studies or the use of professional role models. In selecting case studies, it is essential that these are designed with extreme care so that they do not support pre-existing negative stereotypes by enabling students to remain in either a dominant or subservient role, or allow entrenched prejudices to be created. Positive role models from each of the different disciplines could play an important part in demonstrating the key roles and responsibilities of each profession using real examples and experiences.

The health disciplines share many areas of knowledge and skills, however, the aim is not necessarily an equality of all disciplines, but a raised mutual understanding of the crucial, yet different, contribution each profession makes to a patient's wellbeing. Indeed, even though the RIPLS questionnaire asks about whether particular disciplines have more knowledge and skills, perhaps what is important is what kind of knowledge or skills

from which combination of staff are needed in specific circumstances to ensure best patient care.

Conclusions

The findings from the study support the use of both qualitative and quantitative tools to generate information about students' views of learning together. Healthcare students have a strong sense of teamwork being important for patient care in the earliest stages of their degree programme. Many have a background of knowing others who work in health care and they appear to need little convincing of the importance of working together. However, evaluation of health care students' attitudes and views at an early stage of training suggests that they are different with regard to their sense of professional identity and respective roles. Quantitative and qualitative methods of evaluation may be complementary in furthering understanding of these nuances which are likely to have implications for the design of IPE programmes. In this paper we highlight the apparent fragility of some students' professional identity, which in contrast to other students who are more positive and assertive, may have less positive experiences of IPE where activities and facilitation does not take account of this. Further work is required to examine the following in more detail: whether the observed differences in professional identity are consistent; whether differences between professional identity impact upon inter-professional interaction at University and, more importantly, in the clinical work place; and what shapes professional identity and how this can be influenced positively to impact upon team working and collaboration to enable best patient care.

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