Peer teaching of clinical skills by undergraduate students from medicine and nursing

Report of interprofessional basic life support project

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1. Development of project

This project was designed following identification of the need to improve the teaching of basic life support (BLS) within health and social care courses. In 2009 there were undergraduate courses within the Faculty of Health and Social Care Robert Gordon University with little or minimal instruction in BLS and others which had a greater amount of instruction. Course teams when discussing interprofessional education topics highlighted BLS.

Medical and nursing courses have to comply more strictly with professional regulatory guidelines regarding resuscitation skills, building in teaching at different stages of the curriculum. Other courses which did not have such requirements had a more flexible approach to BLS.

Health Science courses introduced BLS once in Year 1 and there was no further instruction later in the course. Other courses had no instruction. The differences in curriculum time devoted to this topic were therefore apparent.

There was a desire among course teams to rectify this in some way but resourcing it was an issue. The ideas for peer teaching emerged. Students from courses which devoted a larger amount of time to BLS i.e. medicine and nursing could be ‘trained’ to teach students from courses with minimal or no BLS input.

The idea coincided with the time that CSMEN were seeking project bids and a proposal was developed. Following a successful funding bid the project commenced in June 2010. The project team comprised staff members from Robert Gordon University and University of Aberdeen with expertise in IPE, research and clinical skills.

2. Aim and objectives of project

2.1 Aim

To evaluate the outcomes of a pilot project which involves the teaching of basic life support (BLS) by undergraduate students from medical and nursing courses at University of Aberdeen and Robert Gordon University, to undergraduate students within the schools of pharmacy and life sciences, and health sciences.

(This was extended during the project to include students from the School of Applied Social Studies)
2.2 Objectives

At the end of the project:

- Students who currently have none or minimal experience of BLS will have had skills practice in BLS
- Students who teach BLS will acquire teaching skills necessary for newly qualified practitioner role
- Informal interprofessional learning strategies will be implemented as students from different disciplines contribute to each other’s learning.

Potential Objectives following completion of the project:

- Student teachers could support BLS teaching in the future and be called on as ‘assistants’
- There will be a longer term benefit for improvements to the quality of patient care in relation to BLS and the patient safety agenda (Scottish Patient Safety Alliance 2009) as larger numbers of new graduates acquire knowledge and skills.

2.3 Definitions:

The students undertaking teaching were called ‘student teachers’.
The students receiving the learning were called ‘learners’.

3. Background

This project was developed to complement the IPE initiative already established between the two universities in Aberdeen. Students from the undergraduate courses of diagnostic radiography; dietetics; medicine, midwifery; nursing; nutrition; occupational therapy; pharmacy; physiotherapy and social work learn together the skills of interprofessional working in Years 1 and 2. This project was seen to enhance this team work approach with the topic of BLS.

3.1 Interprofessional education and basic life support teaching

There are studies which have considered the interprofessional aspects of BLS teaching but sample sizes were smaller and mostly two professions were investigated e.g. medicine and nursing (Bradley et al 2008). However the use of the RIPLS questionnaire with BLS teaching was validated in Bradley’s study and concurs with its use in this project.
3.2 **Endorsing student teachers for BLS teaching**

Comparison between student teachers and other teachers is a theme found within peer teaching literature. Perkins *et al* (2002) and Tolsgaard *et al* (2007) reported positive results for student instructors when compared with qualified teachers.

Using peer teaching McKenna and French (2010) considered vital signs teaching with nursing students and Field *et al* (2007) considered clinical examination with medical students. Both tutors and tutees had positive perceptions of the experience.

These studies endorse the use of students for peer teaching in relation to clinical skill acquisition. This project progresses the discussion a step further by involving more disciplines and larger numbers of students.

3.3 **Peer teaching in higher education**

The terminology used with peer teaching is varied and used synonymously. Examples are: peer tutoring; peer assisted learning (PAL); peer learning; peer-led training. These reflect the historical developments in education.

Advantages and disadvantages of peer tutoring are reported in the literature. The advantages for the tutor being that in preparing for the role he/she increases self motivation for the task and reviews existing knowledge and skills. This is reported as the transformation of existing knowledge into a re-organised format which has new associations and integrations (Topping 2005). The tutor also increases their cognitive challenge by simplifying, clarifying and exemplifying the information. There are pedagogical enhancements for the tutee which make him/her more active with a lowered anxiety level and greater ownership of the learning process.

The disadvantages can be the time consuming nature of the starting the process but in the long term the reduction in resources and the added advantages outweigh the disadvantages. There are also issues regarding the use of undergraduate students as teachers for example student partners may need to be carefully selected and an awareness of cooperation versus competition. Importance should be given to the structure of the learning situation; the student teachers’ preparation and the role of the qualified staff.

3.4 **Other professions and the teaching of BLS**

The professions involved as recipients of BLS teaching within this study were students from: applied biomedical sciences; applied social sciences; diagnostic radiography; dietetics; forensic science; nutrition; occupational therapy; pharmacy; physiotherapy and social work.
Goddard et al (2010) and Shimpa et al (1996) have included CPR and Basic life support for Pharmacy students in the USA. In the UK, The General Pharmaceutical Council (2011) document “Future Pharmacists-standards for the initial education and training of pharmacists” states that all new graduates should be able to “respond appropriately to medical emergencies, including provision of first aid”. This places a greater emphasis on the acquisition of this skill for pharmacy students within this study who until this project have not had instruction in this topic within their curriculum.

Prior to this study Diagnostic Radiography; Occupational therapy and Physiotherapy students received BLS instruction once in first year and this study provided 2nd year and 3rd year instruction for these students.

The other professions listed received no BLS instruction on their courses this study enabled 1st and 2nd years to receive instruction.

### 3.5 Training of student teachers

Following a good response from medical and nursing students to an invitation for teaching skills practice it was imperative that all underwent a training session. To accommodate student teachers from both Robert Gordon University and University of Aberdeen these sessions were held in two clinical skills centres over a series of evenings.

The format of the session followed the “Heartstart train the trainer’s” module and was modified to the specific requirements of the study, i.e. the teaching of healthcare professionals rather than school children or members of the public.

An overview of the project conducted by one of the study team was followed by a discussion on the problems of teaching in a peer setting and how to organise the teaching session to maximise the experience for the students. The method of teaching resuscitation skills using the 4 stage approach was demonstrated and discussed with the groups and then individuals practiced the skills in small groups to consolidate the teaching (Peyton 1998).

Following the training sessions the ‘student teachers’ volunteered for sessions to facilitate with, wherever possible, different healthcare professions. Having observed the first training session it became evident that the time lapse between training and teaching may have been too long, with the result that the student teachers had forgotten some of the 4 stage approach. On reflection, this was probably due to a enforced delay, as the start of the project coincided with the imminent release of the 2010 resuscitation guidelines. Thus a decision was made that sessions for student learners would only commence after the guideline launch in October 2010.

As a response to this first session and the student teachers’ adherence to the 4 stages of teaching an online film clip was made available so that
they could review this prior to their upcoming sessions to remind them of the correct techniques for teaching. Feedback from the student teachers suggested that this was a good resource for them to utilise and one which will certainly be used in future projects.

Please click on the link to access the film clip:

http://www.abdn.ac.uk/clinicalskills/ipe.php

4. Study Design and Methods

The aim of this pilot project was to evaluate the outcomes when basic life support skills were peer taught by medical and nursing students to students from other healthcare professions. The outcomes evaluated encompassed observation of teaching skills, attitudes to interprofessional learning before and after the teaching intervention, and views of the student teachers before and after. There was a willingness from a number of the professions to take part in this peer teaching because it addressed a number of gaps in health and social care curricula including extending IPE and clinical skills in an innovative way. A mixed method study was designed using quantitative and qualitative methods to enable richness and depth of data capture.

The first task was to recruit student teachers to the project and flyers were sent by email to senior students within medical and nursing schools at the two universities (See Appendix 1). Over 60 students responded in the first instance and of these 54 were trained. Three training dates were established, two in October 2010 and one in January 2011. Prior to the commencement of the training sessions, students were invited to take part in a pre training focus group. Informed consent and copyright clearance was obtained from all participants. These focus groups were organised using the ‘Talking Wall’ technique which had been developed from a business model and used in health care research since the 1990s. (Parsell, Gibbs and Bligh 1998). Five focus groups were conducted three prior to the teaching and two afterwards. There were 70 attendees in all, 54 pre and 16 post the teaching and equal numbers from medicine and nursing attended giving equity to the responses. The students were placed in uni professional groups and were asked to put their responses to a
number of questions on flip charts, once this was achieved for all questions they were then asked to read all the responses from their own professional groups and add any extra comments or discussion points. After this the multiprofessional groups were asked to read the other professions comments and again make any suggestions. Different colours of post it notes were used to make this easier to transcribe and analyse. The facilitators who were two project team members organised the post it notes into themes ready for analysis. The questions and the analysis of their responses can be found in section 5.2. The talking wall questions are found in Appendices 2a and 2b.

To assess the views of the student learners the project team developed the pre and post questionnaires amended from the original Readiness for Interprofessional Learning Scale (RIPLS) (Parsell and Bligh 1999). This questionnaire was developed online for the student learners and they were sent a link to the it pre and post their BLS experience (See Appendix 3). This questionnaire has been used since 2003 within the IPE programme in Aberdeen and not only provides information on the views of students but enriches previously evaluated data. (Diack et al 2008). The RIPLS questionnaire was amended to add in more clinical skills related questions bringing depth and relevance to this project.

Nine members of staff, including all the project team, were trained alongside the student teachers in Basic Life Support techniques and training methods. Individual instruction was also given to train all staff in the use of a student teacher observation tool that was used to assess the performance of all student teachers during each of the BLS sessions. This tool was developed from a pre existing one used routinely in the Advanced Life Support Instructors skills assessment matrix for initial assessment and resuscitation (Resuscitation Council January 2011).

As this was a pilot project attendance at the BLS training sessions was voluntary, and first and second year students in the Schools of Pharmacy and Life Science, Health sciences and Applied Social Studies were invited to attend two-hour evening sessions in the Clinical Skills Centre at the Faculty of Health and Social Care at the Garthdee campus of the Robert Gordon University. Twenty five sessions were planned, 22 were delivered (3 of the sessions were cancelled due to low learner attendance). Learners self selected the evening they wished to attend and were sent an invitation by email which detailed the project, the location for training and the evaluation. In order to maximise numbers face to face invitations were given to potential student learners within timetabled sessions. Total learner attendance was 308, 146 learners in Semester 1 2010, 162 learners in Semester 2 2011. Two hundred and one (n=308) learners completed at least one questionnaire (65.2%) and 39 learners completed both pre and post questionnaires (12.4%). There was an average of 5-7 student teachers per session. In semester 1 there was average of 5-10 student learners per session but in Semester 2 there were much larger groups consisting of 10-25 student learners. Each session was supervised and facilitated by 2-3 staff members. On average there was a ratio of 1:5-1:8 student teacher to student learners.
All the administration and support of the sessions was undertaken by the IPE lecturer, IPE administration support and the School of Pharmacy and Life Sciences elearning team.

The project was reviewed and approved by the ethical review panels of all the Schools involved and all material was recorded and stored in accordance with the eight data protection principles of the Data Protection Act 1998.

The summary table below identifies who was involved, the stages, and the research within the project.

**Summary Table 1**

<table>
<thead>
<tr>
<th>Project team members</th>
<th>Total=5</th>
<th>Different professions</th>
<th>From two universities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student teachers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No of training sessions=3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>October 2010 X 2 January 2011 X 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trainers=two from project team</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total trained=54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd and 4th year nursing students= 27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th and 5th year medical students= 27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers who participated in teaching=40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing=18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine=22</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Focus groups with student teachers**

| 5 focus groups conducted | Attendees: | Nursing and medicine pre=27 |
| 3 pre implementation | Pre=54 | Nursing post=7 |
| 2 post implementation | Post=16 | Medicine post=9 |

**Teaching sessions**

| 25 sessions planned | Semester 1 |
| 22 implemented | 12 sessions implemented |
| 3 sessions cancelled due to low learner attendance | 5-7pm and 6-8pm Mondays and Wednesdays |
| Semester 2 | 10 sessions implemented |
| | 5-7pm and 6-8pm Mondays and Thursdays |

**Staff Supervisors**

| 9 staff members (including project team) | Trained with student teachers | On average 2-3 per session |

**Student teacher/learner ratio**

Average 5-7 student teachers per session
Ranged from 3-9 across all sessions

 Learners attending per session:
Average 5-10 in semester 1
Average 10-25 in semester 2

2-3 student teachers:
Ranged from 1-17 learners across all sessions

**Student teachers- Teaching frequency & assessment**

| No of times one student teacher taught ranged from 1-8 times | 2 student teachers taught 8 times |
| 4 student teachers taught once | 40 observations sheets completed by staff supervisors |
| 22 medicine |
| 18 nursing |

**Learner data**

| Total learner attendance=308 | Semester 1= 146 |
| Semester 2= 162 | 10 professions in Faculty of Health and Social Care |
| 239 online questionnaires completed | 39 pre and post questionnaires completed |
5. Results

5.1 Quantitative Analysis

Figure 1 shows the percentage learner attendance for the duration of the project according to courses represented.

The highest numbers of students were from pharmacy with physiotherapy and occupational therapy second and third.

The online questionnaire results are represented in Figure 2.
Figure 2 – Learner responses to online questionnaire

Figure 2 demonstrates that the majority of students had very positive responses to the online questionnaire with “agree” and “strongly agree” categories receiving the highest percentages. Questions 9 & 10 have the “disagree” and “strongly disagree” categories with the highest percentages as would be expected from the wording of the questions. Question 6 received the highest percentage for the “undecided” category which is an interesting finding further explored in Table 2.
Table 2 Quantitative results n=39 (students with a paired response, pre and post BLS training) Blue=before, Pink=after

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning with other students will make me a more effective member of HSC team</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Patients will ultimately benefit if HSC students work together</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Communication skills should be learned with other HSC students</td>
<td>0 2</td>
<td>1 3</td>
<td>6 4</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td>Team working skills are vital for all HSC students to learn</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Learning clinical skills will improve team communication</td>
<td>0 0</td>
<td>2 3</td>
<td>2 4</td>
<td>26</td>
<td>19</td>
</tr>
<tr>
<td>Learning clinical skills together before qualification will improve working relationships after qualification</td>
<td>0 0</td>
<td>0 0</td>
<td>0 1</td>
<td>26 21</td>
<td>10 15</td>
</tr>
<tr>
<td>Skills related to patient safety should be learned together</td>
<td>0 0</td>
<td>2 1</td>
<td>10 2</td>
<td>23 25</td>
<td>4 11</td>
</tr>
<tr>
<td>For clinical skills learning to work students need to respect and trust each other</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
<td>25 18</td>
<td>14 20</td>
</tr>
<tr>
<td>I don’t want to waste time learning with other HSC professionals</td>
<td>15 18</td>
<td>23 20</td>
<td>1 1</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>It is not necessary for undergraduate HSC students to learn together</td>
<td>8 14</td>
<td>26 21</td>
<td>5 3</td>
<td>0 1</td>
<td>0 0</td>
</tr>
<tr>
<td>I would welcome the opportunity to learn clinical skills with other HSC students</td>
<td>0 0</td>
<td>0 0</td>
<td>3 2</td>
<td>31 29</td>
<td>5 7</td>
</tr>
<tr>
<td>Shared learning before qualification will help me become a better team worker</td>
<td>0 0</td>
<td>0 0</td>
<td>1 1</td>
<td>30 29</td>
<td>8 9</td>
</tr>
</tbody>
</table>

Table 2 demonstrates slight differences between the ‘agree’ and ‘strongly agree’ categories before and after training. There are higher numbers of students indicating that they strongly agree with the statements after the activity compared to before. For questions 9 & 10 more ‘strongly disagree’ after the activity compared to before.

With question 6 “learning clinical skills together before qualification will improve working relationships after qualifications” the undecided category is 3:1 for before and after which is a low figure compared to the results in Figure 2. This indicates that within the matched pair responses this was not a question which was uncertain and indeed the ‘agree’ and ‘strongly agree’ categories have the highest responses. This is an interesting difference which has come to light on further analysis of the data in the matched pair responses.

5.1.1 Descriptive statistics- attendance/student teachers

Over both terms 40 student teachers took part in the teaching. Fifty four were trained initially but 14 found that due to other commitments they were unable to be involved. Of the 40 that were involved in the teaching sessions 22 were medical students and 18 were nursing students.
Figures 3 and 4 shows the number of times each student participated and was assessed.

Table 3 shows further details regarding the assessment information for the student teachers. It is interesting to note that for all the criteria assessed the higher numbers are in the “effective and competent” category. Opening and closing the session are where there is some need for improvement in both medicine and nursing with nursing students requiring further input compared to medicine.
Table 3 Student Teacher Assessments Medical Students = Lilac, Nursing = green

<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Needs further development</th>
<th>Needs further development</th>
<th>Effective &amp; Competent</th>
<th>Effective &amp; Competent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to session</td>
<td>1</td>
<td>1</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>States the aims and objectives</td>
<td>3</td>
<td>5</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>Explains the 4 stage teaching method</td>
<td>2</td>
<td>2</td>
<td>19</td>
<td>15</td>
</tr>
<tr>
<td>Demonstrates the skill – ‘real time’ – stage 1</td>
<td>1</td>
<td>2</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Demonstrates the skill – ‘with commentary’ – stage 2</td>
<td>1</td>
<td>5</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Demonstrates the skill – ‘with student commentary’ – stage 3</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Allows the students to demonstrate the skill – stage 4</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Facilitates the group of students independent practice</td>
<td>0</td>
<td>0</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Answers any questions clearly and accurately</td>
<td>0</td>
<td>0</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Provides verbal feedback to students on performance</td>
<td>1</td>
<td>4</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Invites and answers questions from the group of students</td>
<td>0</td>
<td>0</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Summarise the session</td>
<td>1</td>
<td>6</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>Terminate the session by thanking for participation</td>
<td>1</td>
<td>2</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Global Assessment</td>
<td>1</td>
<td>4</td>
<td>14</td>
<td>19</td>
</tr>
</tbody>
</table>

Note: Some students were assessed more than once for the same criterion at the same session hence the slight anomalies in the numbers.

5.2 Qualitative Analysis

Qualitative data were gathered from four sources:

- A two phase focus group interview- one focus group interview prior to the IPE BLS sessions (pre-focus group) and one after the completion of the sessions (post-focus group)
- Qualitative comments from a learner’s online questionnaire;
- Qualitative comments from student teacher observation sheets
5.2.1 Focus group interviews

Two phases of focus group interviews were conducted to explore student teachers’ perceptions of their role within the project. A ‘talking wall’ approach was implemented using post it notes and flipcharts guided by a structured interview schedule (Appendices 2a and 2b).

Students participating in “talking wall” focus groups

The pre focus group aimed to explore issues relating to IPE peer group teaching as well as the student teachers’ perceptions of the importance and significance of BLS training in health and social care. The post focus group, conducted after the completion of the teaching sessions explored the student teachers’ perceptions of:

- preparation for the teaching role
- management and organisation of the teaching sessions
- strengths and weaknesses of the IPE BLS programme
- impact of the programme on teaching skills
- overall opinion of the project
- impact on the awareness of the importance of IPE
- acquisition of BLS skills
- the future of the project.

Students participating in “talking wall” focus groups

Data from each focus group were analysed using the Tesch eight step framework to facilitate a rigorous and consistent approach (Tesch 1990 cited by Creswell 2003, p192). This ensured a consistent approach to the analysis of data collected from both the pre and post teaching focus groups.

Two project team members independently analysed data from each phase of focus group interviews enabling comparisons to be made regarding emerging themes and thus address the issue of validity of the findings.
Questions from both the pre and post teaching focus group were firstly clustered into topic areas (See Table 4)

**Table 4 Clustering of topic areas**

<table>
<thead>
<tr>
<th>Pre-Focus group</th>
<th>Post-focus group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student teacher attitudes and perspectives toward basic life support</td>
<td>Perceptions around preparedness to teach BLS to other students from differing professional groups</td>
</tr>
<tr>
<td>Student teacher attitudes and perspectives toward IPE</td>
<td>Student teacher views on the implementation of the BLS IPE teaching programme</td>
</tr>
<tr>
<td>Perceptions toward preparation for student teaching roles</td>
<td>Student teacher perceptions of their teaching skills</td>
</tr>
<tr>
<td>The perceived benefits of students teaching BLS to other students from differing professional groups.</td>
<td>General perceptions of the experience of teaching BLS</td>
</tr>
<tr>
<td></td>
<td>Student teacher perceptions regarding future teaching of BLS to students from different professional groups.</td>
</tr>
</tbody>
</table>

**Perspectives on BLS skill acquisition**

Student teacher attitudes and perspectives toward basic life support demonstrated a strong feeling in relation to recognising the skill as a vital requisite of any health care professional.

BLS was recognised as a life saving intervention which could present at any time in practice as an unplanned event and as such was recognised as a clinical emergency. Student teachers reported that any healthcare professional had a duty to help others and that there was a public expectation that professional working within healthcare would be expected to be able to intervene in the event of such an emergency.

Examples of responses:

"Wearing a uniform in a healthcare setting ... public expects them to know what to do”

"You never know who will be around when BLS is required”

"All healthcare professionals should know this, BLS saves lives”
**Perspectives on IPE**
The majority of student teachers taking part in the pre focus group had previously experienced IPE within their respective course/programme curriculum. Student teachers reported strong levels of support and recognition towards IPE in their development as healthcare professionals. This was seen as a means of encouraging teamwork, challenging stereotypes, understanding others roles and improved communication between professional groups.

Examples of responses:
"*Important so that everyone understands each member’s role in the team and learns to respect each other*“

"*Important as it can break down misconceptions that we have and lead to a hierarchical system*“

"*Helps build and develop good working relationships*“

**Perspectives on preparation for teaching role**
These were seen as important. Both positive and negative perceptions regarding the organisational aspects of the project were discussed and explored. The operational aspects of the project were of significance for the students with a number reporting difficulty in receiving information and directions to preparatory events. In addition the notion of integration rather than separation of professional groups were seen as important at the preparatory event.

Examples of responses:
"*Didn’t get to interact with others*”

"*Should have mixed groups of students rather than separating*”

In terms of the positive aspects of the preparatory event, students discussed their appreciation of there being a welcoming environment including the ability to socialise with other students and the provision of catering which appeared to make students feel valued.

Example:
"*Enjoyed group work and its good to interact with new people from different disciplines*”

In this respect it would appear that different students had differing experiences of the preparatory event, however the importance of environment, valuing the student and the opportunity to meet with others from different professional groups would seem to be central to enhancing the student experience a an early stage in the project.
Perspectives on peer teaching interprofessionally
There were a number of perceived benefits in terms of students from differing professional groups teaching BLS to other students. There was a strong feeling of bridging gaps between professional groups and facilitating the building of relationships. It highlighted the importance of taking shared responsibility for core clinical skills. It helped to break down barriers between the respective professional groups. It was also seen as a means of enhancing communication in interprofessional teams. There were also responses which alluded to the benefit this approach would have for patient care.

Examples of responses:
"Everyone will approach it (BLS) using the same framework”

"Allow us to know some protocols on BLS and work with other professionals to help get insight about working together”

"Build better team working prior to graduation”

Whilst these benefits were reported, there were a number of perceived disadvantages or negative factors associated with peer teaching approaches in the pre focus groups. These included the perception that students may feel intimidated to teach their peers, questions in relation to how students would accept other students as teachers i.e. they may be less receptive and an expectation that some professional groups may question the relevance of BLS as a core skill and part of their responsibility in practice.

Examples of responses:

"Others may feel that they do not need to be trained as much as medical/nursing students- question how much they can actually do in an arrest situation”

"Students might not take training as seriously from peers rather than teaching staff”

"We may feel more vulnerable- they may ask us questions we don’t know how to answer”

These anxieties were not realised during the teaching sessions as noted in the post focus group feedback.

Preparedness to teach BLS
Of particular significance to students in the post teaching focus groups was the value of a structured approach to their preparation as BLS teachers- this related to a four step approach to teaching BLS. The use of a video as a form of refresher was also welcomed by student teachers. However some students felt that the gap between their own BLS training and their actual teaching session was too long- this was dependant on the session for which they volunteered.
Examples of responses:

“Timescale was too long as it was a good 3-4 months before I started teaching and had forgotten everything”

Alternatively, “The timescale was OK, aided by video that was e-mailed”.

The perception of preparation was perhaps influenced by the individual student’s revision and independent study following the face to face preparation.

**Implementation of teaching**
The experience of the implementation of teaching sessions was generally seen as positive. The students felt that these were well organised and a key benefit related to meeting with new people, working as a team and passing knowledge onto other students. There was also a feeling of satisfaction when feedback from the students and observers was positive.

Examples of responses:

“Being able to make friendships with other students. Getting advice on how to improve and positive comments for future use should similar situations occur.”

“When students who were being taught had a good evening and asked lots of questions”

These feelings were countered by some who experienced feeling nervous, disappointment with low attendance at some of the sessions and a lack of student engagement.

Examples of responses:

“Lows for me was the anxiety before the session”

“Only thing really would be when there were students who didn’t seem to want to engage but there weren’t many and often they were more engaged by the end”

**Teaching skills**
The majority of students expressed the view that the experience had improved their confidence and enhanced their teaching skills. The experience was also seen as something that could enhance the student’s role as a mentor in their future career.

Example: “Increased confidence in when I’ll be a mentor in the future”
Experiences of teaching
The participants in the post teaching focus groups generally saw the project as an enjoyable experience and one which was of high value both in terms of their teaching skills, confidence and opportunity to see things from other profession perspectives.

Example:

"It was great to learn aspects of a topic I thought I knew very well from another health professional’s perspective. I would happily do it again”

Participation as a student teacher was also seen as enhancing skills in relation to BLS and building confidence and knowledge for future practice. Additionally, the student teachers reported that their experience of participating in the project had raised their awareness of IPE considerably and that a clinical skills based approach to IPE enhanced student learning.

Example:

"Not sure I knew about IPE from our sessions in earlier years. I did much more enjoy these practical IPE sessions”

Comparison of pre and post focus groups
Of further significance is the comparison of pre and post perceptions - it would appear from the data collected that most of the student perceptions prior to the teaching sessions were realised in the post teaching focus group interviews. The themes of IPE challenging stereotypes, improving teamwork and communication as well as the benefits of increased knowledge, skills and confidence as expectations seem to have been realised as a direct result of the student teacher experience.

5.2.2 Qualitative comments from learners’ online questionnaire

Content analysis of the comments provided in the learner’s online questionnaire revealed three key themes:

- Knowledge of professional groups
- Understanding roles and teamwork
- Benefits to patient care

An independent analysis of data undertaken by two project team members validated these emergent themes. The strongest theme emerging from the question relating to the students perception of the impact of IPE within their respective courses was that of understanding roles. This was prevalent across all professional groups with no themes emerging specific to the student’s professional discipline.
Example of responses:

"IPE learning brought together students studying for different professions and we learned how each of them would benefit a patient and what the profession did”

"We had a group IPE session last year where we were with lots of other health profession students and worked together to see how all our roles would be important in a given scenario from the community to the clinical setting”

Clearly from such statements, students not only saw IPE as a means to understand the role of the healthcare professions but that it also fostered a problem solving approach which demonstrated the importance of interprofessional collaboration and teamwork for the benefit of patient care.

**Matched pair responses qualitative comments**

Eight out of the 39 students who completed pre and post online questionnaires included free text comments to the last open question. These are found in Table 5.

<table>
<thead>
<tr>
<th>Profession</th>
<th>Before Activity</th>
<th>After Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiotherapist</td>
<td>I am about to undertake my IPE session for 'Basic Life Support' this evening. I hope that it will further develop my skills in relation basic life support as we already practiced basic CPR, recovery position and choking in first year. Hopefully after this session, we will have a better understanding in relation to this topic which will be of benefit to patients on clinical placement.</td>
<td>I undertook the basic life support (BLS) IPE activity, which took place yesterday in the clinical skills unit. As we already covered CPR, recovery position and choking in year 1, I found this session to be a good form of revision and it refreshed the information I already knew. I thought that the students that took the class did a very good job on demonstrating and explaining the techniques.</td>
</tr>
<tr>
<td>Diagnostic radiographer</td>
<td>None</td>
<td>Refresher on clinical skills. It will be very useful.</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>None</td>
<td>Basic life support at Garthdee. Some teachers were very nervous. The nurse D was very clear and good at asking appropriate questions to make sure we understood. A lot of people didn’t turn up. It was beneficial to get some revision of basic life support at Garthdee.</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>health and social care building, Garthdee Learning new skills that could help me in my future career</td>
<td>The IPE activity I felt was informative and well delivered by the students taking it. It took place at Health &amp; Social Care building Garthdee. I felt that it gave me a better insight into how to deal with the situations taught. If all health care patients were taught it then I think it would be beneficial to patients but it would be more relevant to some health care professions compared with others. The students that took the event I felt were very knowledgeable and taught us</td>
</tr>
<tr>
<td>Social Worker</td>
<td>None</td>
<td>I found the activity very helpful, and it was a good way to meet other people studying similar courses.</td>
</tr>
<tr>
<td>---------------</td>
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<td>--------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Social Worker</td>
<td>I found the questionnaire beneficial to a certain extent; I am hoping the IPE event will provide me with some additional training which will be beneficial to me in the future.</td>
<td>I thought that the ipe activity was very beneficial and gave me some more additional information; I thought that the collaboration from different students was good as it gave information from other peoples perspectives. it took place in the health building at clinical skills. I think it would benefits to patients as it showed safety for them.</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>It will take place in Garthdee Campus on the 3rd of Nov.</td>
<td>I did a basic life support training at Garthdee campus -forgot the date in which I participated- but I thoroughly enjoyed learning how to save a life and how to react in a different situation. It meant that in a critical situation I wont be the person that would be standing around the patient, I would be the one helping the casualty and in doing so feeling helpful towards that individual(s). I found the organisation extremely friendly to work with although I must admit there were a few awkward silences! (but I’m sure it’ll slowly diminish the next time basic life support training will take place!)</td>
</tr>
<tr>
<td>Social Worker</td>
<td>I think it will be a very positive experience, not only with personal development, but also with team building skills and working with other people that we may not know. Seeing that in our future careers we will be working with lots of various people and other professionals this will be a good introductory experience for us all</td>
<td>I went to the Interprofessional Education Basic Life Support Training run by RGU in the Garthdee Health &amp; Social Care Building and found it to be very useful and very interesting, refreshing my knowledge on first aid skills as well as learning new and more up to date information. I would be very interested in taking part in similar Interprofessional activities.</td>
</tr>
</tbody>
</table>

### 5.3.3 Qualitative comments from student teachers’ debrief

A content analysis of the open comments provided in a student teacher observation tool (Appendix 4) provided some interesting insights into the observations of staff involved in the project with regard to the student teachers’ performance in the BLS sessions.

Generally there was positive feedback provided by observers, relating to the students level of competence as a BLS teacher, personal attributes such as enthusiasm and approachability as well as the teamwork displayed by student teachers during the sessions.

In terms of feedback regarding the content of the actual teaching sessions, two main themes emerged these relating to comments around the actual steps of the procedure or task e.g. the technical and procedural steps of BLS and teaching method. Observations and comments relating to this second theme related to the teaching skills displayed by the students. These ranged from comments around timing of the session, use and application of the four step approach, clarity of speech and explanations and facilitation of learners skills and questions.
Based upon the comments of observers, the over-riding theme was one of a good standard of teaching.

6. Discussion
This section will discuss each of the planned objectives in light of the findings and the literature.

6.1 Students who currently have none or minimal experience of BLS will have had skills practice in BLS

As a result of this project 308 students within the Faculty of Health and Social Care at Robert Gordon University received basic life support instruction and on graduation these are potentially health professionals who will enhance patient safety.

http://www.patientsafetyalliance.scot.nhs.uk/

6.2 Students who teach BLS will acquire teaching skills necessary for newly qualified practitioner role.

These web links indicate newly qualified practitioner roles for nursing and medicine which include a focus on teamwork and the ability to impart their knowledge to others.

http://www.radcliffeoxford.com/books/samplechapter/1165/ALWAN_05-34d62800rdz.pdf

From this project 54 student teachers were trained and 40 of those were able to use their skills and develop as teachers. The sustainability of this project has been enhanced this semester as five of last year’s trained student teachers are returning to continue their involvement.

This project’s findings concur with the views of Topping (2005) in that there were increased motivational factors and increased knowledge and confidence levels reported by the student teachers.

6.3 Informal interprofessional learning strategies will be implemented as students from different disciplines contribute to each other’s learning.

This project brought together the learning strategies of interprofessional learning and peer teaching to clinical skill acquisition. It enhanced curriculum development for the student learners by enabling them to acquire a skill which they would not have obtained within their present course structures. It enhanced their views on other professionals’ roles and responsibilities in relation to basic life support.

During the sessions informal exchanges between student teachers and student learners developed mutual respect, potentially breaking down of professional stereotypes which can only benefit patient care (Section
5.2.2). Concurring with Topping (2005) they reported lower anxiety levels and the ability to ask different questions to enhance their learning when taught by students compared to their own lecturers.

For the student teachers it created an environment where medical and nursing students could interact with one another in a way which potentially will have benefits for patient care. The team approach to teaching revealed different knowledge and skills from each profession and it was apparent to the staff observers that they were learning from each other (Section 5.3.3). Their views on interprofessional learning and the need to work collaboratively have been reinforced in a practical way (Section 5.2.1). The development of their teaching skills and their knowledge and confidence in basic life support can only enhance patient safety as they become qualified practitioners.

6.3 Student teachers could support BLS teaching in the future and be called on as ‘assistants’

The sustainability of the project requires volunteers from medical and nursing cohorts for the next year and the years ahead. The enthusiasm and encouragement from this project’s recruits is already reaping benefits as over 40 senior medical and nursing students are interested to become teachers for the next run of interprofessional BLS teaching.

Many of the project’s student teachers expressed an interest to become ‘assistants’ for future implementation of IPE BLS teaching but due to job opportunities which have taken them away from Aberdeen this cannot be realised. However to date 5 student teachers from the 2010-11 project will participate as ‘assistants’ for the 2011-2012 implementation.

6.5 There will be a longer term benefit for improvements to the quality of patient care in relation to BLS and the patient safety agenda (Scottish Patient Safety Alliance 2009) as larger numbers of new graduates acquire knowledge and skills.

Had this project not occurred student learners from 2010-11 would not have acquired instruction on BLS and the student teachers would not have developed the ability to impart this knowledge to others. The potential benefits of this are immeasurable but can only strengthen the impact of the patient safety agenda, add value to their first posts as health professionals and enable some of the key strategic objectives of NES to be realised.

7. Limitations of the study

The project team recognise the following limitations of the study.

7.1 The student learners cannot be deemed competent in BLS

The student learners received instruction and awareness in BLS using the 4 stage approach to teaching this skill. They were not tested in any way
for their competence or proficiency. It is recognised that unless there is regular revision of the teaching, practice of this skill can be questioned. However receiving instruction with demonstration and practice on a dummy enables the recipient to attempt to assist an unresponsive person and call for help and this is the perceived benefit.

7.2 Not all students from the Faculty of Health and Social Care Faculty received instruction

Due to the voluntary nature of participation only the interested and motivated student learners engaged with this study. Their courses do not usually timetable evening sessions and therefore many students did not participate for this reason. Evening sessions were planned due to clinical skills centre and student teacher availability.

7.3 No formal student teacher selection process

The student teachers who responded to the invitation were automatically invited to the training sessions. There was an enthusiastic response but introducing a selection process might have enabled a more quality assured approach. However as the student teacher feedback indicates there were no major issues with their ability. This may not be the case as the initiative is sustained and maybe a consideration for the future.

7.4 Staff perceptions are recorded anecdotally

The focus group planned for staff participants did not materialise due to time commitments. There were positive comments made throughout the project with renewed commitment for the next run of the project. Any anxieties they had regarding the quality of teaching were not realised.

7.5 Assessment of student teachers in groups

Whilst the analysis of the feedback to student teachers is reported as individual it has to be noted that feedback and debrief was given in small groups of 3-4 student teachers. This was done by staff at the end of an evening session to enable students to leave at a reasonable time. In hindsight, if there were concerns regarding a student teacher this method should have been reviewed.

8. Conclusion

Through the project not only have we attained interprofessional education at several levels (mixed profession teachers as well as students) but also encompassed some of the key strategic objectives set out in NHS Education for Scotland – Strategic Framework 2011 – 2014 (Page 8 http://www.health.heacademy.ac.uk/doc/resources/nesstartframewk2011-14).

Not least of which is 300+ healthcare professionals to whom we have provided basic life support training. They would not have had this training in patient safety routinely.
The findings indicate positive results for all the planned objectives encouraging the team to address more Faculty members to engage in the next run of the initiative. It is a worthwhile initiative with positive benefits to students, staff, interprofessional education and patient safety.

**Recommendations**

**1. Sustain the peer teaching model in the delivery of BLS.**

It is recommended that:

- Student teachers support BLS teaching in the future and be called on as ‘assistants’ to enable students who currently have no or minimal experience of BLS to acquire skills practice in BLS.
- Senior students acquire teaching skills necessary for newly qualified practitioner role.
- Student teachers continue to be the trained
- The organisation of the peer teaching approach is handed over to school level supported by the IPE lecturer.

**2. Embed the peer teaching approach into institutional strategy and curricula.**

It is recommended that:

- A peer teaching approach embedded within curricula across the Faculty will ensure that inter professional learning occurs at formal and informal levels within student populations.

- Peer teaching approaches are explored for other clinical skill acquisition.

**3. Disseminate the study’s findings which enhance the existing evidence base on peer teaching; interprofessional education and clinical skill acquisition**
Appendices

Appendix 1 Flyer inviting medical and nursing students

Calling all nursing and medical students with an interest in CPR

Would you like to gain some teaching practice in CPR?

Would you like to enhance your CV?

This is an opportunity to teach CPR skills to 1st and 2nd year health sciences; pharmacy and life sciences students. All you have to do is respond to this advert, engage in some free training at the Suttie Centre and be willing to facilitate 3-4 sessions between 6-8pm (Oct-Dec and/or Jan-Mar) on designated evenings in the clinical skills centre at Robert Gordon University.

Want to know more?
Contact: Dr. Sundari Joseph, Lecturer in Interprofessional Education by 31st August 2010
s.joseph@rgu.ac.uk
s.joseph@abdn.ac.uk
Tel: 01224 262975

Appendix 2a Talking Wall questions pre-focus group

TALKING WALL QUESTIONS

BLS GENERAL
What does basic life support mean to you?
Why did you decide to take on this peer teaching role?
Do you think that every health and social care professional should know basic life support as standard?

IPE GENERAL
How important do you think interprofessional education is in the development of health care professionals?
Have you taken part in IPE events previously? If so what sort?
TODAY’S EVENT

Have you any positive feedback about the arrangements for today?
Have you any negative feedback about the arrangements for today

IN THE FUTURE

What do you think might be the positives about teaching BLS interprofessionally?
What do you think might be the negatives about teaching BLS interprofessionally?
Could you suggest other clinical skills do you think can be taught interprofessionally?

Appendix 2b Talking wall questions post focus group

TALKING WALL QUESTIONS

IPE BLS: Preparation to teach

What are your views on the preparation you received in order to teach BLS?
Comment on the timescales from your preparation to implementation.

IPE BLS: Implementation

What are your views on the implementation of the sessions?
What were the highs?
What were the lows?

Your teaching skills

Comment on the impact of this project on the development of your teaching skills.

General comments on the project

What did you think of this project?
How has it contributed to your knowledge and skills in BLS?

Do you feel it increased your awareness of IPE?

**Future of the project**

Do you think this project has a future?

Would you consider being involved again?

How do you feel it can be improved?
Appendix 3 Readiness for Interprofessional Learning Scale (RIPLS)

The purpose of this questionnaire is to examine the attitude of health and social care students to interprofessional learning and is part of the larger interprofessional education programme in health and social care in Aberdeen. For more information please contact Dr Sundari Joseph at s.joseph@rgu.ac.uk and visit http://www.ipe.org.uk/

All information provided by you will be confidential and no findings which could identify you will be reported or published. Data obtained from this questionnaire will be stored securely. The completion of this questionnaire is voluntary and your decision to complete will not influence any relationship with either university involved in the project. By returning this questionnaire you are agreeing to take part in this research.

Year of study  **REQUIRED**

Please complete the following questionnaire.

Please state the course you are studying  **REQUIRED**

Have you had previous experience of interprofessional learning?  **REQUIRED**

- Yes
- No

If you answered yes to the previous question please give a very brief statement of what this IPE learning was and any impact it may have had.

For questions 1-12 please put a cross in the circle you most agree with- only mark one answer
1. Learning with other students will make me a more effective member of a health and social care team

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

2. Patients would ultimately benefit if health and social care students learn together

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

3. Communications skills should be learned with other health and social care students

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

4. Team-working skills are vital for all health and social care students to learn

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

5. Learning clinical skills together will improve team communication

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

6. Learning clinical skills together before qualification will improve working relationships after qualification

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

7. Skills related to patient safety should be learned together

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
</table>

8. For clinical skills learning to work students need to respect and trust each other
9. I don’t want to waste time learning with other health and social care students

10. It is not necessary for undergraduate health and social care students to learn together

11. I would welcome the opportunity to learn clinical skills with other health and social care students

12. Shared learning before qualification will help me become a better team worker

Please comment on the IPE activity you are about to undertake or have undertaken. Where is it to/did it take place? What does/did it mean to you? Does it have any benefits for patients? How have/did you found the organisation of it and any other comments you wish to make.

Thank you for completing this questionnaire.
## Appendix 4 Student Teacher Observation Tool

### IPE Basic Life Support Facilitator Feedback & Assessment

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
<th>Assessor:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Needs further development</th>
<th>Effective &amp; Competent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to session</td>
<td></td>
</tr>
<tr>
<td>States the aims and objectives</td>
<td></td>
</tr>
<tr>
<td>Explains the 4 stage teaching method</td>
<td></td>
</tr>
<tr>
<td>Demonstrates the skill – ‘real time’ – stage 1</td>
<td></td>
</tr>
<tr>
<td>Demonstrates the skill – ‘with commentary’ – stage 2</td>
<td></td>
</tr>
<tr>
<td>Demonstrates the skill – ‘with student commentary’ – stage 3</td>
<td></td>
</tr>
<tr>
<td>Allows the students to demonstrate the skill – stage 4</td>
<td></td>
</tr>
<tr>
<td>Facilitates the group of students independent practice</td>
<td></td>
</tr>
<tr>
<td>Answers any questions clearly and accurately</td>
<td></td>
</tr>
<tr>
<td>Provides verbal feedback to students on performance</td>
<td></td>
</tr>
<tr>
<td>Invites and answers questions from the group of students</td>
<td></td>
</tr>
<tr>
<td>Summarise the session</td>
<td></td>
</tr>
<tr>
<td>Terminate the session by thanking for participation</td>
<td></td>
</tr>
</tbody>
</table>

### Global Assessment

<table>
<thead>
<tr>
<th>Needs further development</th>
<th>Effective and competent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments and summary of feedback:
References:

BRADLEY, P., COOPER, S., and DUNCAN, F., Clinical skills development: a quasi experimental controlled trial examining the role of interprofessional training. A collaborative study between the Peninsula Medical School (PMS) and the Faculty of Health and Social Work (FHSW), University of Plymouth (UK) [online] Available from: http://www.plymouth.ac.uk/files/extranet/docs/HSW/CEPPL%20Interprofessional%20Skills%20Learning%20Report.pdf [Accessed 29.08.11]


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