Executive Summary

The Faculty of Health Science (FHS) is undertaking a project in undergraduate teaching & learning to increase interaction between Schools (collaboration) and to improve efficiency and effectiveness. This is the first of two discussion papers and outlines options for preferred teaching & learning models.

Drivers for the project include growth, fiscal constraints and trends in health professional education.

Collaboration covers a range of joint learning experiences including:

- Multi-Professional Education (MPE) defined as students from more than one School learning together but in parallel for whatever reason; and
- Inter-Professional education (IPE) defined as students from more than one School learning with, from and about each other to improve collaboration and patient care.

Collaborative teaching & learning arrangements can be distributed along a continuum from a generic health science degree through to a shared unit/module to a once-off workshop or seminar. Five models consistent with the project’s mission and principles are presented for consideration:

- Networking – an informal web of communication amongst staff;
- Common Resources – where students learn separately but share human and learning resources;
- Shared Learning – where students from different schools are brought together to learn common content or similar outcomes, in parallel. They share learning and human resources but with limited interaction and no common goal;
- IPE Co-operative Learning – where small groups of students from different Schools learn with, from and about each other to improve collaboration by participating in Case Based Learning/Problem Based Learning (CBL/PBL) to achieve a common goal through joint decision-making, using team work, communication and reflective reasoning skills in a theoretical context; and
- IPE Experiential Learning – similar to the Co-operative IPE model but occurs within a practical context and the focus is on patient care. It can be set in a simulation centre, the community or a clinical institution.

A range of options representing various permutations and combinations of the above models are presented and analysed. A combination of ‘Shared Learning’ together with both IPE models is recommended as it offers a continuum for acquiring IPE competencies with a hierarchy of knowledge, skills and attitudes from first to final year. It also encourages networking, achieves an element of cost efficiency (by offsetting IPE costs against shared learning efficiencies) and prepares students for the future workforce while maintaining current structures and providing choice.
Purpose

In 2008 the Faculty of Health Science (FHS) is undertaking a project to increase collaboration between its four schools (Nursing & Midwifery, Medicine, Pharmacy and Human Life Sciences), the Rural Clinical School (RCS) and the University Department of Rural Health (UDRH) in undergraduate programs, to improve the effectiveness and efficiency of teaching and learning across the Faculty.

This is the first of two papers. It will investigate models of collaborative teaching & learning and recommend those most applicable, given the needs and constraints of the Faculty.

A second paper will investigate feasible and relevant areas of common learning and explore options for addressing barriers to a more collaborative approach to teaching and learning across the Faculty.

1. Terminology

There is a need to clarify key terms as the terminology in this area of endeavour has been aptly described as a ‘quagmire’ (Pirie A, 1998). Unavoidably, this project may further muddy the waters.

Collaboration will occur whenever staff and students work across Schools within the Faculty to deliver learning experiences and maximise the effectiveness of human, physical and financial resources. It implies concepts of sharing and partnership. These could be demonstrated in a number of ways including shared responsibilities, shared decision making or shared resources.

Collaboration, therefore, includes a wide range of joint learning experiences including multi-professional and inter-professional education.

Multi-Professional Education (MPE) is generally defined as ‘two or more professions learning side by side for whatever reason (Barr 2002, referred to in Lewis et al, 2007) while ‘Inter-Professional Education (IPE) refers to ‘two or more professions learning with, from and about each other to improve collaboration and the quality of care (CAIPE 1997, referred to in Harris et al, 2007).

However, for this project, these definitions have been modified, principally, to highlight differences in the degree of interaction between students as follows:

• Multi-Professional Education (MPE) will occur when students from two or more Schools learn together but in parallel for whatever reason; and
• **Inter-Professional Education** (IPE) will occur when students from two or more Schools learn with, from and about each other to improve collaboration and the quality of care. It infers greater interaction between students who are focused on patient care.

Sometimes ‘disciplinary’ replaces ‘professional’ in the above definitions especially when referring to under graduate education. However, IPE & MPE are preferred for this project to avoid any confusion with ‘multi-disciplinary’ as used by the School of Medicine where it refers to collaboration between different branches of medicine.

Similarly, ‘learning’ and ‘education’ are often used interchangeably. ‘Education’ is preferred for this project as it implies formal learning typical of undergraduate studies. ‘Learning’ is considered more appropriate for informal or ongoing experiences such as that proposed for the new Inter-Professional Learning (IPL) ward at Launceston General Hospital (LGH).

One of the first steps for bringing students together for learning is to identify where, in each curriculum, students from different professions learn the same things or are aiming for similar learning outcomes. These overlaps will be referred to as **areas of common learning**.

2. **Background**

Growth and fiscal constraint are strong drivers for collaboration, along with emerging trends in IPE.

These were highlighted in the project’s terms of reference (TOR). The TOR state the FHS is the fastest growing Faculty at University of Tasmania (UTAS) and there are some compelling reasons for a more collaborative approach to teaching and learning including:

- increased and increasing student numbers,
- trends in education for health professions,
- new growth areas, both actual (e.g. nursing in Hobart/Sydney) and potential (e.g. dentistry),
- significant regional developments in Tasmania and Sydney,
- revitalisation of the *Partners in Health* agreement,
- development of clinical skills and simulation centres in 3 regions of Tasmania and in Sydney,
- demand for clinical placements,
- the Faculty’s common learning initiatives including as *Perspectives on Ageing*, E-Health, Alternative & Complementary Medicine CD and the Rural Inter-Professional Emergency Retreat (RIPPER),
- outcomes of recent professional accreditation and course reviews (Nursing, Pharmacy and new MBBS course); and
- Edge 2 with its focus on excellence and distinctiveness and the ongoing debate about managing tensions between growth & excellence.

The TOR conclude the ‘FHS recognises the need to develop models across the Faculty to manage the teaching & learning aspects of these
strategic developments in a collaborative, cost effective and mutually efficient manner’.

3. Mission and Principles

3.1. Mission

The aims of the project are summarised as follows:

To increase collaboration across Schools within the Faculty of Health Science in undergraduate teaching and learning to develop a more cohesive staff, to improve the efficiency of resource allocation and to more effectively prepare students for roles as future health professionals.

3.2. Principles

The following will guide decisions in relation to the management of change including the selection of preferred learning models and areas of common learning:

• Cost neutral or better – preferably, some cost benefits,
• Generally acceptable - not too confronting to staff and students,
• Maintains existing structures of the Schools & courses – not too disruptive,
• Reflects current trends in health professional education,
• More varied and stimulating learning experiences for students,
• No substantial increase in staff or student workloads; and
• Provides choice for both staff and students.

4. Models

Models of collaborative learning for students from different health professions could be arranged along a continuum from a generic health science degree to a common first year through to a shared unit or module or a once off workshop/seminar.

Although examples of these, in various combinations and permutations, exist both within Australia and internationally (Refer to Appendix 1), there is little research evaluating the relative effectiveness of these options, especially for undergraduate IPE.

Therefore, this paper will focus on pragmatic models consistent with the principles outlined in Section 3. The examination of models will be restricted to those that can be embedded into current courses and the structure of the Faculty, in a cost effective manner. Models that embed common modules or resources are more likely to succeed, given the mix of integrated (e.g. MBBS) and traditional unit-based curricula (e.g. Nursing, Pharmacy, Health Science) within the Faculty.

Therefore, models involving generic degrees or common years have not been included.
Below are models of teaching & learning involving some degree of sharing or partnership across Schools. They are listed in an ascending order of the level of interaction between students.

4.1. Networking

This involves an ‘informal web of communication that is formed for mutual benefit amongst staff and schools’¹ Special interest groups would be established around common issues to improve quality of teaching and learning and reduce risk. For example, a special interest group could be established to review assessment & clinical skills in the Schools of Medicine and Nursing & Midwifery.

Although communications between staff may improve, it does not directly involve students and, therefore, provides no opportunity for student interaction. Quality of teaching may improve due to standardisation but there are no significant cost benefits or change from the status quo.

4.2. Common Resources

In this model students from different Schools learn separately but share human and learning resources across Schools. This is exemplified by team teaching and the rotation of staff with specific expertise across Schools. It would also include the development of joint learning and teaching materials suited to the needs of more than one School, such as common case studies. Electronic teaching aids for complementary and alternative medicine and E-Health have already been developed within the Faculty for this purpose.

Unit costs are reduced if the costs of developing sophisticated learning resources and providing technical or teaching expertise can be distributed across a larger number of Schools and students.

In a study of team teaching of anatomy at the University of South Australia (Mackintosh S et al, 2007), staff reported benefits of:

- specialising in areas of special interest,
- sharing resources, expertise, ideas & different perspectives,
- balanced workload – ‘team teaching placed no one large load on any one person’; and
- added flexibility – ‘able to negotiate with team to cover illness or conference commitments’

The challenges were identified as:

- developing materials interesting & relevant to different groups,
- providing rounded and complete case studies of patient care; &
- scheduling regular face-to-face team meetings.

4.3. Shared Learning

¹ Craig Zimitat Director of Medical Education, University of Tasmania  February 2008
This model relates to ‘occasions when two or more professions learn side by side’ and is often referred to as multi-professional education (Barr H, 2005). It encompasses a range of learning arrangements wherever ‘students are brought together, to learn in parallel’ (Oandasan I, 2005). Students from different schools are brought together, either physically or online, for lectures and/or tutorials. They share physical and human resources but assessment can be the same or different for each cohort of students.

The key element is togetherness but the level of interaction between students is low and there is no shared or common goal. Learning is largely independent rather than interdependent. Learning outcomes are achieved by individuals. Group interaction and group learning outcomes are not assessed.

This model can be used whenever common content and/or learning outcomes can be identified between different courses. Perspectives on Ageing is an example of shared learning within the Faculty. The project will investigate the potential for extending this model into other areas such as mental illness, indigenous health, health promotion, community health, domestic violence, E-health, child & adolescent health and ‘Society, Culture & Health’.

4.4. IPE Co-operative Learning

This is a model for IPE where students are learning with, from and about each other to improve collaboration. It implies a higher level of interaction between students.

In this model, small groups of students (6-10) from more than one health profession operate as a team, for Problem Based Learning (PBL) or Case Based Learning (CBL), mostly in an academic or theoretical context. The program could be conducted intermittently over a period of time, for a semester or for 6-8 weeks or as a once-off workshop/seminar lasting half a day to a week.

D’eon M (2005) describes best practice co-operative learning as having five important and necessary features as follows;

- **Positive interdependence** – students interconnected to achieve a common goal,
- **Joint decision making** – students help each other to succeed,
- **Individual accountability** - each student is held responsible for contributing a fair share to the success of the group,
- **Team work** – members require team skills to succeed; and
- **Reflective reasoning** – to assess the effectiveness of the group.

From the process of learning, rather than content, students acquire IPE competencies (Oandasan I et al, 2005) including:

- **Knowledge** - of one’s own role and professional role of others,
• **Skills** - in communications, negotiations, conflict resolution, and leadership; and
• **Attitudes** - including respect, trust, tolerance and willingness to work with other health professionals.

The above competencies, interactions within the group and the achievement of a common goal focused on patient care are fundamental to the assessment process.

The critical element in the acquisition of IPE competencies is process rather than content. If the learning process is well constructed, IPE competencies could be embedded into core content common to a number of health professions. CBL or PBL in legal and ethical issues, primary health care, communications and preparation for practice, for example, could provide the vehicle for IPE without necessarily increasing the course or workload for students.

At present there are no examples of this model in the Faculty and a pilot would be required to test its feasibility.

### 4.5. IPE Experiential Learning

Kolb (referred to in D’eon M, 2005) describes experiential learning as learning that takes place as a result of an encounter with an experience that is planned by instructors within a course, program or curriculum and should involve four stages (D’eon M, 2005):

- **Plan** - What to do as a result of the situation presented?
- **Act** - Put the plan into action (try out solutions),
- **Observe** - Gather data on the effect of the action taken; and
- **Reflect** - Determine what was learned and what could be done better next time.

A number of papers have suggested that service or practical learning is an important method for achieving IPE competencies (Parsell G et al, 1998; D’eon, 2005). It could be a simulated patient encounter or real-life event during a rotation either in the community or a health institution. Many theorists argue that the best learning is in real-life contexts (Brown et al, 1989; Candy, 1991; Blumenfeld, Marx, Particle, Krajcek & Soloway 1997, Kolb 1997 referred to in D’eon, 2005). Therefore, the more closely IPE approximates reality, the better.

Recent and future developments such as UDRH’s RIPPER program, the simulation centre at Newnham Campus and the proposed IPL ward at Launceston General Hospital offer a range of opportunities for implementing an effective IPE experiential model.

Appendix 2 is a summary. It compares key elements of the above models and contrasts them to traditional, uni-disciplinary education.

### 5. Options
Given cost considerations and practical constraints, the options for collaborative teaching and learning models within the Faculty are:

- **Option 1** - Shared Learning model only; or
- **Option 2** - IPE Co-operative model only; or
- **Option 3** - IPE Experiential model only, or
- **Option 4** - Both IPE Co-operative & Experiential models; or
- **Option 5** - Shared Learning and IPE models together in one of the following combinations:
  a. Shared Learning and IPE Co-operative models; or
  b. Shared Learning and IPE Experiential models; or
  c. Shared Learning, IPE Co-operative and Experiential models

It is anticipated that the models of ‘networking’ and ‘common resources’ would be encouraged in combination with any of the above options and, therefore, have not been identified separately.

5.1. **Option 1 - Shared Learning Only**

*Perspectives on Ageing* has demonstrated this is a workable model for the Faculty and is a sound basis for further development. This model potentially offers efficiencies due to the economies of scale, and a range of potential areas of common learning have been flagged for further investigation (see Appendix 2). However, the level of interaction is low and students are not learning from and about each other.

Nevertheless, ‘Shared Learning’ may offer a starting point for IPE. According to ‘contact hypothesis’ (Hean S et al, 2005), with the appropriate learning conditions and in a non-threatening learning environment ‘poor attitudes’ held by members of different (and/or opposing) groups can be improved. Its relevance to IPE is yet to be established by research.

Therefore, this is a conservative option and may not adequately reflect current national and international trends in health education.
Advantages | Disadvantages
--- | ---
• Model (via *Perspectives on Ageing*) piloted in 2007 and provides a basis for expansion  
• Potential savings due to economies of scale (larger lecture groups & online delivery)  
• More than 10 potential areas of common learning identified for further investigation.  
• Could occur throughout courses but should commence in first year.  
• Could be offered to geographically dispersed campuses and students by online delivery.  
• By improving the economic viability of programs with small numbers, the options for introducing new courses such as dentistry or physiotherapy increase.  
• May improve collaboration between students from different health professions due to impact of ‘contact hypothesis’ | • Barriers to sustainability remain eg funding, assessment, load & timetabling  
• Limited opportunities for learning IPE competencies  
• Areas of common learning more difficult to identify across integrated (PBL as in MBBS) and traditional unit-based curricula (Nursing, Pharmacy and Human Life Sciences).  
• Student satisfaction and perceived value of the unit/module can be effected by differences in its share of total assessment.  
• Accreditation requirements may limit flexibility and scope for common learning  
• Size and availability of suitable accommodation (eg lecture theatres) may limit opportunities for large scale shared learning.

5.2. **Option 2 – IPE Co-operative Model Only**

A model where small teams of students from more than one School engage in CBL/PBL to learn skills in team work, communications and reflective reasoning as well as trust, mutual respect and knowledge of the roles and responsibilities of different health professions.

Co-operative IPE is a precondition for experiential IPE. Students require the team work, communication and reflective reasoning skills acquired through co-operative IPE to effectively participate in experiential IPE. Unless these skills are acquired by another means elsewhere in the course, the models are interdependent.
Advantages | Disadvantages
---|---
• Can accommodate a variety of learning experiences & time periods – from once-off seminars, debates or discussions through to an ongoing theme for a semester.
• Learning process is more important than content. IPE competencies can be embedded into core common learning eg legal & ethical issues, primary health care and communications/team work.
• Fits well with learning closely associated with IPP i.e. complex cases and community based care.
• Lower delivery cost than experiential learning.
• Suited to middle years (eg Nursing Year 2, MBBS Year 3).
• Consistent with EDGE 2. | • Small group learning is resource intensive
• The intrinsic value of the learning is not guaranteed and depends on quality of cases, skills/knowledge of the group & its dynamics.
• IPE facilitation requires additional staff development.
• Barriers to sustainability include timetabling, funding, assessment, development and maintenance of cases & other learning materials.
• Skills may develop but are not easily validated or consolidated without subsequent experiential learning.
• Needs to be developed and piloted (No current examples in Faculty).

### 5.3. Option 3 – IPE Experiential Model Only

This is where teams of students from more than one school have a reality-like experience of patient care either in a simulation centre, community or clinical setting. Assessment is based around IPE competencies, interactions of the group and a common goal, focused on patient care.

The recent pilot of the community-based RIPPER program, the new simulation centre at the Newnham campus and a proposed IPE ward at LGH are opportune and timely developments. This model could incorporate and enhance all three.

Advantages | Disadvantages
---|---
• Real life learning – most valued and valuable IPE experience.
• Pioneering use of simulation centres.
• IPE in simulation centres may alleviate practical placement pressures.
• Opportunity for unique and distinctive branding for Faculty.
• Mainstreams RIPPER model and enhances current initiatives.
• Complements developments at LGH.
• Consistent with EDGE 2. | • Highest cost delivery - small group learning involving most experienced & skilled staff.
• Limited student access & involvement eg final year only?
• Requires initial & on-going staff development to train staff as IPE facilitators.
• Barriers to sustainability remain eg funding, assessment, timetabling, maintenance of shared learning materials & facilities.
• Students may have only one experiential IPE experience and it may not necessarily be the same experience.
5.4. **Option 4 - Both IPE Co-operative and Experiential Models**

This offers a complete IPE learning arrangement but it is the most costly option. The costs of small group learning cannot be offset against the efficiencies gained from the ‘Shared Learning’ model.

Although some studies (Cooper H et al, 2001) demonstrate a link between undergraduate IPE programs and improved collaboration due to changes in knowledge, skills and attitudes, there is no evidence that undergraduate IPE improves patient care (Barr H, 2005). To establish this link, rigorous longitudinal studies are required and to date none have been undertaken.

Irrespective, IPE has gained such momentum that universities uncommitted to IPE run the risk of acquiring a conservative and regressive image. In addition, documented incidents such as the Bristol Infirmary Report and the Victoria Climbie case in the UK (Barr H, 2005) and the Dr Patel case in Queensland, highlight poor patient outcomes when health professionals fail to work effectively in teams.

5.5. **Option 5 – Shared Learning and IPE Models**

By implementing both ‘Shared Learning’ and IPE (co-operative and/or experiential) models, the cost efficiencies due to the ‘Shared Learning’ can be realised and used to offset costs associated with the IPE models.

**Options 5a and 5b:** By implementing only one of the IPE models in association with ‘Shared Learning’, the costs of IPE are reduced and readily offset against the efficiencies gained from ‘Shared Learning’. This option ignores the interdependence of the two IPE models. Without the skills and knowledge acquired through the Co-operative IPE model, the Experiential IPE model is ineffective. Conversely, the Co-operative IPE model is a means to an end, not an end in itself.

**Option 5c:** If all 3 models are accepted, a continuum for acquiring IPE competencies and a hierarchy of knowledge, skills and attitudes could be established. This would result in on-going contact between students from different health professions via ‘Shared Learning’, plus ‘Co-operative IPE’ in the middle years to develop teamwork, communication and reflective reasoning skills and, at least, one exposure to a number of different experiential IPE opportunities in the final year/s.

This approach is consistent with other well recognised programs in both the UK (the New Generation Model, Southampton) and in Australia (Health Sciences Peninsula Program at Peninsula Campus, Monash University).

In addition, Option 5c is consistent with the project’s mission and principles outlined in Section 3. It is the overall ‘best fit’. It encourages collaboration, achieves an element of cost efficiency and prepares students for the future workforce while maintaining current structures and providing choice.
To offset the higher costs associated with implementing both IPE models, a significant number of the ‘potential’ areas of common learning would need to be delivered as ‘Shared Learning’. The vast majority of collaborative teaching & learning in the Faculty would be as ‘Shared Learning’.

6. Recommendation

That option 5c is accepted and the project continues with research aimed at developing guidelines for implementing the ‘Shared Learning’ model and both IPE models (Co-operative & Experiential).

This combination of models aligns well with the project’s terms of reference ‘to develop demonstration models for collaborative teaching and learning’ with respect to:

- Determination of common elements – across first year units (Shared Learning model);
- A clinical focus (Experiential IPE model); and
- A theoretical focus (Co-operative IPE model).

7. Implementation

It is anticipated that the implementation strategy will be based on regional clusters. The mix of students located at Hobart, Launceston or Burnie and the relative costs of delivery for different models at each campus will shape the nature and extent of collaborative teaching & learning within each region.
Appendices

Appendix 1 – Australian & International Examples of IPE (Refer to Attachment 1)

Appendix 2 – Summary & Comparison of Teaching & Learning Models - Uni, Multi and Inter-professional Education (Refer to Attachment 2)
References


D’eon M (2005): *A Blueprint for Inter-Professional Learning*. Journal of Interprofessional Care Supplement 1, 49-59


McNair R (2005): Breaking Down the Silos: Inter-Professional Education and Inter-Professionalism for an Effective Rural Health Care Workforce. Non Referred Paper, Department of General Practice, University of Melbourne


Steinert Y (2005): Learning Together to Teach Together: Interprofessional Education and Faculty Development. Journal of Interprofessional Care Vol. 19, no.2: 60-75
