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## Going 4D: Embedding the Four Dimensional Framework for Curriculum Design

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## **Going 4D: Embedding the 4-Dimensional Framework for Curriculum Design**

**Gemma Sinead Ryan, Kate Kuthbert, Tanya Dryden, Denise Baker and Dawn Forman**

### **Introduction**

The University of Derby has a history of interprofessional development, initially called Shared Learning, since 1992. When the initial research investigation was conceived, the Government in the UK had already been advocating the value of shared learning teamwork for professionals within the NHS for almost 30 years. The Government saw this as a means of providing better care for the service user as well as a way of reducing costs in terms of higher education. In contrast the profession and professionals themselves perceived that the sharing involved in this type of teamwork was a way of eroding their professional base. The professions believed that eventually several generic workers could be employed instead of the professionals themselves, and so resisted the challenge of sharing information in teams and, at the time, sought to protect their own individual professional base (Forman, 2000). Nevertheless the University of Derby saw the development of shared learning and interprofessional learning as an opportunity to bring the then occupational therapists, diagnostic and therapeutic radiographers together with a curriculum designed to enhance the sharing that could take place in their curriculum. Due to the changes in leadership of these areas the profile of interprofessional education and practice has not been seen as quite so important a new Dean in 2004 however has reengaged the teaching teams to learn from practice internationally and to include education practice and research on the interprofessional agenda at Derby. One of these changes will be covered in this chapter as the writing team have been involved in action research using a model developed over 7 years in Australia.

The team have been using the 4-dimensional framework (Dunston, R. Forman, D. Matthews, L. Nicol, P. Pocket, R. Rogers, G. Stekete C. Thistlethwaite, J. (2015) to structure and guide the curriculum decisions made during an interprofessional programme development. This chapter outlines the University of Derby's experiences using an action research technique to closely monitor the change taking place.

### **The 4D Framework**

Dunston et al (2015) promote the use of the 4 D framework to ensure the effective delivery of interprofessional learning (IPL). The framework includes of 4 dimensions which cover the contextual requirements, capability demands, pedagogic options and pragmatic elements. The 4-D framework encouraged us to:

- critically reflect on the notions of integrated care and the ever-present demands of a healthcare culture where patients are central (Dimension 1)
- locate graduate capabilities within the dynamic interplay between practice context and university learning (Dimension 2)
- sift through the historical developments in IPL at Derby as part of the , from the first shared learning initiatives in 1992 towards the more integrated interprofessional learning experiences (Dimension 3)
- negotiate the structural elements of managing an interprofessional programme within the institutional context (Dimension 4).

Insert figure 1 The 4 D curriculum framework

### **Employing the 4D framework in action research**

As a form of self-reflective enquiry action research enabled the team to employ the 4-D framework dimensions to assess, analyse and identify good practice that facilitates IPL but also highlight areas where we could improve (Carr & Kemmis, 1986). This approach, informed by the Plan, Do, Study, Act cycle (PDSA) reflected our aim of continuous quality improvement in our curriculum. This supported us to respond to the questions:

- What are we trying to accomplish? High quality IPL embedded in our curriculum and continuous improvement
- How we will know if change is improvement? The process of building PDSA cycles will lead us to evaluate our journey and outcomes
- What change can we make to ensure improvement? Critically reflecting on our strengths and areas for development, focusing on the factors we can change rather than the things we cannot

The PDSA cycle is increasingly being employed in healthcare settings to analyse and reflect on team practices and locally implemented interventions (Institute for Innovation and Improvement, 2008). It could be said that this personal, reflective and local approach limits transferability of process and outcomes in both health and healthcare education because of the uniqueness of the context where the process of enquiry occurred (Damschroder et al, 2009; McNiff & Whitehead, 2009; Powell et al, 2009). However, we proposed a structured process of investigation using the evidence based 4D framework to reflect, code and theme our findings. This meant that our results were not only relevant to our context, which is essential for us to successfully improve our curriculum [intervention] (Taylor et al, 2013; Damschroder et al, 2009; Powell et al, 2009; Herr & Anderson, 2005) but further assisted us in refining an action research approach [facilitated by the 4D framework] that can be employed in a wide range of health and social care education contexts.

The use of the 4D framework enabled us to focus on the four dimensions, guiding reflection and critical analysis of how our team and curriculum was performing in relation to each, and/or how each dimension may impact on the future of our curriculum. Furthermore, it was possible to continue building on this data as an ongoing reflective process with this first PDSA cycle leading into another. With the intention to continuously evaluate our progress and enable our curriculum and team to be responsive to the ever changing health and social care landscape (see figure.2 below). This approach will be essential for us to demonstrate impact and effectiveness, and along with the 4D structure it makes clear how we have applied the action research process which may be utilised by those outside of our team.

Insert figure 2 The action research journey using PDSA cycles Institute of Innovation and Improvement (2008)

The structure of enquiry in our 'study' phase was as follows:

- Dimension 1 – Identifying the future of healthcare practice needs
- Dimension 2 – Defining and understanding our capabilities
- Dimension 3 – Teaching, learning and assessment
- Dimension 4 – Supporting institutional delivery

A wide range of data informed our critical reflection that included programme documentation across our healthcare practice provision, self reflective journals, observation of course committees and observation of students participating in IPL.

### A more considered view of the 4-D Framework

Over the past five years a network of Australian universities has introduced the use of a 4-dimensional curriculum development framework, developed originally by Lee et al. (2013) and built on by The Interprofessional Curriculum Renewal Consortium (2013). The framework can be seen as a conceptual tool for curriculum development by depicting the necessary dimensions that need to be considered for effective IPL. The framework takes into consideration the interconnected elements required for interprofessional curriculum development pulling together resource attainment and the active engagement with practice and stakeholders. Crucially the framework promotes a shift away from linear curriculum design. The intention of the framework is to act as a guide or reference point rather than a prescriptive set of instructions. Referring to all 4 dimensions allows curriculum developers to shape curriculum and offer the most comprehensive set of learning activities (Dunston, et al (2015)).

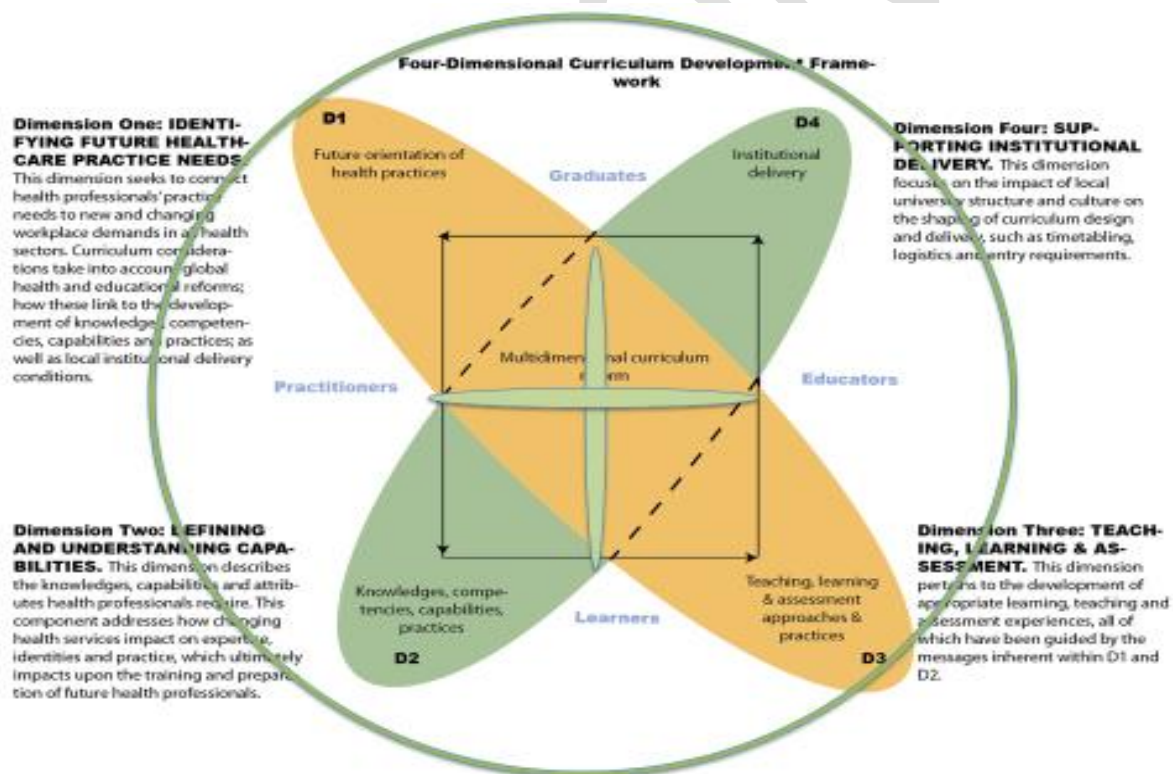


Figure 1 Four Dimensional Curriculum Development Framework Dunston et al (2015)

### The Derby Foundation Degree Science in Professional Development (Health & Social Care)

The University of Derby was commissioned to develop a programme for higher-level support worker roles at band 4 of the NHS career framework. There has been significant expansion of

the workforce at band 4 and given the stretched economic climate in the NHS these roles offer a solution to maintaining standards of care (Matthews, 2015). Edmonds et al (2012) highlight not only the growth of assistant practitioners within the NHS workforce but also chart the political wrangles associated with the “modernised professionalism agenda”. The authors demonstrate how the professionalism of “auxiliary” support workers has redefined both the workforce and the educational arena through the emergence of foundation degrees in higher education.

Venturing into the provision of foundation degrees for this workforce group necessitated sophisticated curriculum development and thus an opportunity to embed the 4-D framework arose. The course was initially commissioned by the local workforce development team, practice partners, mostly community nursing focused, to design a course for their Health Care Assistants (HCAs) that would develop reflective, knowledgeable support workers who could be trained ‘in-house’ to undertake some duties that would previously have been the remit of registered staff thereby making the HCAs more ‘fit-for-purpose’. The curriculum development team were cognisant of the fact that the final curriculum however needed to be flexible if it was to accommodate students from other disciplines within health and social care.

The 4-D framework was embedded through an action research loop- whereby the framework was explored at the curriculum design stage and throughout first year of delivery. Learning observations prompted by the framework dimensions were collated over and used to inform curriculum decisions.

What follows is an account of our curriculum development presented through the 4-D lens. We therefore explore the context of the programme, locate this within the UK health service and understand the dynamics and mechanics of developing an IPL programme within the University of Derby. For each dimension there is a summary statement about how we have interpreted the dimension for our Derby programme and then summarises examples of curriculum decisions prompted by each dimension.

### **Dimension 1: Identifying future health care practice needs**

The Health and Social Care Act (2012) was the simulant for a number of momentous changes in care delivery in the UK. Not only are we witnessing a reshape of acute services, there is radical change evident in the interface between acute and primary care (Future Hospital Commission, 2013). Analysis of the next 5 years of the NHS change must focus on the following priorities:

- prevention and public health
- patients experiencing far greater control of their care
- concerted effort to break down the barriers in care provision

Shortell and colleagues (2015) argue that the above changes require integrated care. Leading up to the act there were calls for a more integrated model of care – from ‘virtual’ integration through shared protocols to integrated teams and in some cases shared budgets and organisational integration (Ham et al 2011). The justifications are simple; highly integrated primary care systems that emphasise continuity and co-ordination of care are associated with better patient experience (Starfield 1998; Bodenheimer 2008).

The calls for more collaborative working in the NHS are ever present. Across the 290 recommendations from the report into care at mid-Staffordshire NHS Foundation Trust Francis (2013) there was a common thread of working within a common culture where sub-standard care elicited zero tolerance. Nurturing and sustaining this culture is of course thoroughly dependent on effective interprofessional working across the whole system of care. The enquiry was resolute in advocating professionals to be prepared to collaborate effectively and negotiate the complex professional and structural dynamics inherent in the NHS. In fact, a call to arms for an interprofessional framework with integrated care at the heart and effectively combines theory and practice.

Integrated care and the notions of interprofessional learning was deliberated by Barr (2012). *“One strives to knit services together, the other to cultivate collaborative practice amongst their workers.”* p1568

Barr (2012) points to the symbiotic relationship between the two terms and calls for the active engagement of the workforce within interprofessional ventures.

*“integrated care falters without engaging the workforce actively as partners in change whilst interprofessional care falters without organisational support.”* p1568

In reviewing the needs of our health care practice, brought into sharp focus what was required from our curriculum. Our learners would need to participate in a tight web of professionals, not necessarily tied to a static location, but able to demonstrate agility and flex to population demands (Cuthbert, Glover and Forman, 2015). The review of dimension one also stressed the importance of bringing together the academic context with the practice context.

### **Sample Curriculum Decisions in Dimension 1**

- Learning on the foundation degree had to reflect the changes in how health services were being commissioned since the Health and Social Care Act (2012).
  - As an emerging workforce it is important to consider how they would deliver care within an integrated system.
  - The focus on the individual is a high priority
- The way professionals and health organisations are accessing learning opportunities is shifting in response to limited funds and increased demand for more flexible approaches to learning. Different stakeholders were beginning to request stand-alone modules or module combinations. It is therefore important for the programme to remain flexible enough to accommodate service requirements.
- Establishing bridging opportunities where learners can continue onto further study for example progression into the University of Derby’s BSc(Hons) Diagnostic Radiography or into the BSc(Hons) Nursing programme depending on their clinical experience.

### **Dimension 2: Defining and understanding capabilities**

The UK has experienced a period of significant health policy development in response to the timely reflection on health needs of the population. The Kings Fund has collated a review of the key drivers for health and social care based on the first 100 days of the new conservative government (Kingsfund, 2015). The review points to structural changes with devolution, solutions to financial constraints and of course quality and safety of patients sits squarely in the

set of challenges. This in turn has therefore instigated education commissioners and providers to sense check the requisite skills present in curricula for the health workforce.

The high profile cases illustrating poor standards of care in the NHS, including the report of the Mid-Staffordshire NHS Foundation Trust Public Inquiry, (Francis, 2013), has resulted in the learner journey having check points for compassionate care and upholding the NHS values.

Articulating the priority needs within healthcare practice (the task of dimension 1) helped set a solid foundation from which to consider the learning demands of our programme. Whilst the content and knowledge capabilities were easier to define, the points of integrated practice and the skills for collaboration needed focus. What IPL capabilities were we going to define as indicators of success on our programme? Furthermore, the non-technical skills and attitude development for the health graduate has been amplified. How should this be recognised with our programme?

### Sample curriculum decisions in dimension 2

- Continually review the relationship between intellectual skills and transferable skills that facilitate team working, communication, collaboration, understanding of their scope of practice, changing contexts in the workplace
- Promote the development of relationships for collaboration and teamwork centred on the care of the client.
- Extending the application of the i-STAT interprofessional capability tool (ref to be added when research report published) to ascertain the specific interprofessional competences which need to be developed across the health support workforce.

<b>Transferable skills</b>	Solve problems by selecting and applying appropriate approaches within different work-based situations, including new or unusual situations in the work context.
<b>Transferable skills</b>	Demonstrate awareness of some issues within team working and collaboration with others.
<b>Transferable skills</b>	Analyse issues within team working and collaboration with others and demonstrate skills of collaboration and teamwork.
<b>Knowledge and understanding</b>	Demonstrate knowledge and understanding of well-established ethical concepts and principles within the broader context of the health and social care setting.
<b>Subject specific skills</b>	Utilise personal and professional learning to develop a broad understanding of their role and area of professional practice, recognising the limits of their knowledge and scope of practice.

Table 1 Example learning outcomes across levels 4-5 that encourage engagement in interprofessional working

### Dimension 3: Teaching, Learning and Assessment

*“IPE being a pedagogical process that purposefully utilises relational and interactive methods within settings that mirror, as much as possible, future practice.”*

(Curriculum Renewal for Interprofessional Education in Health 2014, p42)

As a backdrop to Derby's journey, the UK Government had been advocating the value of shared learning teamwork for professionals within the NHS since 1992 (Forman and Nyatanga 1999). The strategic mandate was in part seen as a means of providing better care for the service user but also a way of reducing costs in terms of higher education. In contrast the professions and individual professionals sensed the impending erosion of their professional identities with the real possibility of discrete professionals being replaced by generic workers and so resisted the challenge of sharing information in teams and, at the time, sought to protect their own individual professional base (Forman, 2000). This turbulent melting pot demanded a brave move in educational preparation and for Derby this meant initiating shared learning as a means of nurturing the necessary collaborative practice.

Derby's shared learning journey began with bringing together students from occupational therapy, diagnostic and therapeutic radiography, physiotherapy, operating department practice and nursing during sessions designed to enhance collaborative working. This student grouping had never studied together within a higher education environment. As such the collaborative outcome hoped for could not be guaranteed. However analysing attitudinal data collected over 4 years demonstrated shared learning was gaining traction and importantly learners were reporting a greater understanding of one another's profession (Nyatanga et al (1999) and Forman, (2000)). Greater social engagement of the students, as facilitated by the curriculum, increased their understanding not only of one another's profession but of the individuals themselves, thus ensuring that trust could be developed and a sharing of experience could be enhanced and be taken forward long into their professional careers.

By responding to further strategic and governmental directives such as *Every Child Matters (2003)* Derby built on this early shared learning initiative and made moves towards interprofessional learning. The remit this time was to be more inclusive with professional groupings, involving not only the health professions but also the teaching and housing professions, to enable communication to take place to the benefit of children throughout the county. Importantly there was increased focus given to the quality of interactions between the student groups and the learning activities endeavoured to cultivate a culture of co-dependency and teamwork between the learners. An example of this step-change in interprofessional learning offered by Derby was the court room learning experience, recognised by the first John Horder award provided by the Centre for the Advancement for Interprofessional Education (CAIPE) (CAIPE 2007; Meads *et al.*, (2009). The court room experience was purposeful in its endeavour to make learning together a necessary ingredient for success; the co-dependency on each other was made extremely explicit to students.

Like many UK universities, the IPL offer at Derby experienced an ebb and flow between being present in all curricula with modularised content to a more flexible state whereby interprofessional learning experiences were opted into. Whilst there are many commentaries on which approach produces the greatest impact the speculation is high because of the dependency on context. The importance of context cannot be underestimated; any IPL activities need to match the context from the university, faculty and student body and then set alongside the prevailing practice agenda, any professional body requirements (e.g. the standards for professional registration at the end of a programme of study) and professional development. Professional body requirements often serve as a barrier to IPL. For example, programmes that lead to professional registration may advocate IPL but require



professionally specific competencies to be achieved in a programme over a limited time frame. IPL may then become formative or given less priority.

A recent study with student participants from the healthcare practice department enabled us to identify some of the limitations in our IPL curriculum but also highlighted the possible role of students in developing IPL curriculum that is likely to meet their learning needs and be received enthusiastically (Ryan, 2015a). As part of this we learned that enthusiasm for IPL is often a direct reflection of those facilitating the process i.e. academic staff. But also that a well-organised IPL module, constructively aligned to programme outcomes, clear assessment that requires collaboration and one that is interprofessionally delivered e.g. team teaching, teaching from those working in practice can improve student academic confidence and performance in assessment (Ryan, 2015a). This study proposed a critical realist framework that illustrated the modifiable factors that may be influential in student academic performance; the pedagogy of IPL being one of them.

Over the last two decades IPL within the Derby context has harvested the following learning points to inform the next IPL venture:

- **Interdependency is paramount:** Interprofessional learning needs to cultivate and harness an interdependency between learners from the professional groupings- this needs to be created and reinforced through learning activities, the set-up of the programme/ module content and the creation of a cohort identity. The key message here is that effective learning is dependent on effective team work.
- As such, **Pedagogy is as important as professional mix:** All too often there is an excessive focus on interprofessional activities and effective pedagogic practice is ignored. Whereas the focus needs to be on engaged learning through high impact pedagogies as a primary lever for good interprofessional learning experiences.
- **Practice need rather than availability of professions** should shape the curriculum and interprofessional encounters. As Derby's IPL experience grew so did the bravery to challenge and question which professional student mix was right against the learning objectives of the curriculum.
- **Practice and theory working together:** The practice context needs integrating with the academic learning activities- thus taking into account the elements highlighted during our reflections on dimensions 1 of the framework.

### Sample curriculum decisions in dimension 3

- The learning experiences within the work-based environment will require close scrutiny. The team are planning to capture work-based experiences not only for the purposes of assessment but also as a means of understanding the interplay between university- based learning and practice-based learning.
- With the potential for private provider students joining the programme, the curriculum team will need to consider the equity of IPL experience and focus attention on creating a cohort identity in the group. Similarly learners who wish to

access relevant modules from across the university may experience structural barriers such as timetabling.

#### **Dimension 4: supporting institutional delivery**

Updating their review of UK interprofessional learning, the Centre for the Advancement of Interprofessional Education presents a commentary on the developments of IPL from 1997 onwards (Barr, Helme & D'Avray, 2014). The report points to the growth of blended learning approaches and the ways in which technology-enhanced learning has supported the geographical boundaries which had previously acted as a barrier to IPL. For example, online social networks and virtual learning platforms such as closed Facebook groups or Values Exchange can facilitate a collaborative learning process, student ownership but also enhance peer support (Ryan, 2014; Ryan, 2015a; Values Exchange, 2015). However the case studies located in Barr et al (2014) also suggest that IPL tutors and curriculum leads also experience similar frustrations as their counterparts almost 10 years ago and while innovations in technology bring a wealth of opportunity, those such as online social networks also present new challenges e.g. professionalism, plagiarism, accuracy of shared information (Ryan, 2015b). The main frustrations stem from the organisational and practical considerations needed when delivering complex interprofessional programmes. Learning environments, the impact of professional body requirements within programmes, budgets and locating students with host faculties are ever-present, doubly so when the remit also includes practice-based learning. Indeed, Ryan (2015a) found that these difficulties associated with the university environment, logistics and timetabling were often factors that also frustrated students on IPL modules but that they also felt this impacted on their engagement and success in learning and assessment. Conversely, it has been suggested that such institutional factors have a significant impact on how students develop professionally (Weidman et al, 2001).

#### **Curriculum decisions in dimension 4**

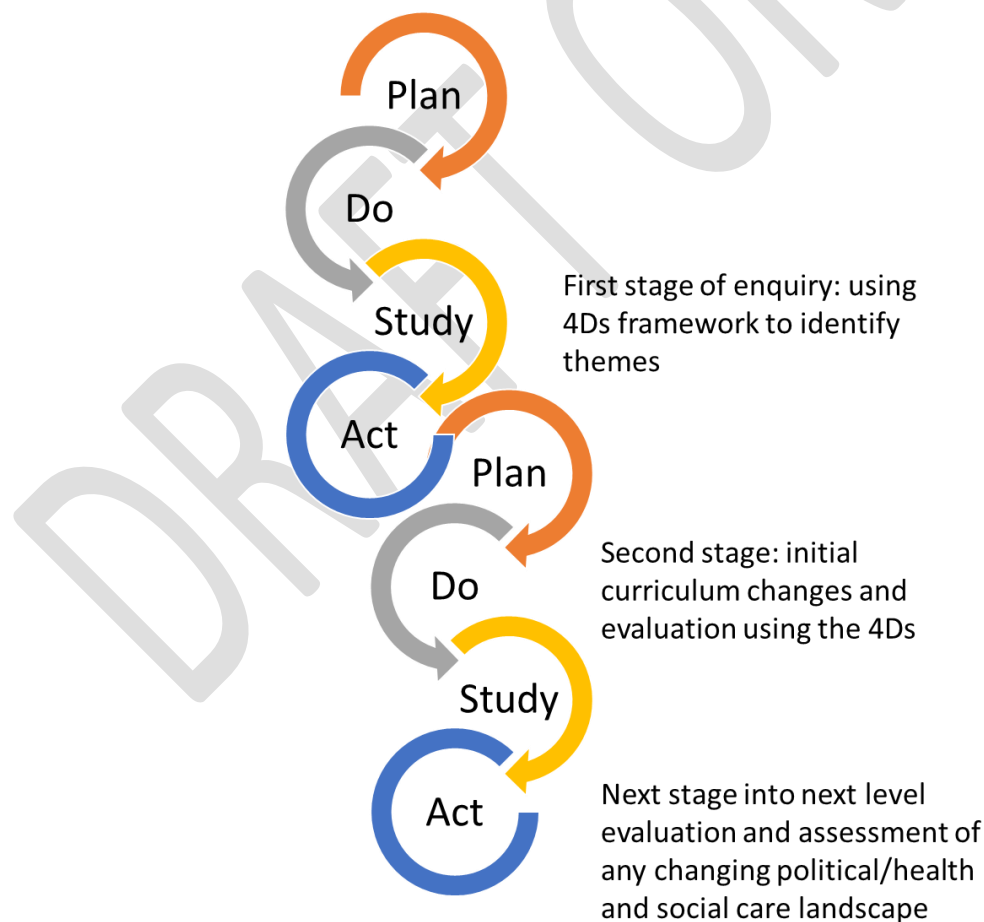
- This will be a key component in the modification or redesign of the curriculum in addition to designing the programme to ensure students are able to give care to the individual.
- The foundation degree programme experienced a shift in the host faculty, transferring to another campus, requiring a modification of online study materials alongside the introduction of online applications.
- Consideration of room bookings and administration of programme including the return on investment are critical success and sustainability factors. Room bookings continue to be a challenge. The logistics of student learning on this programme also has knock on effects for practice with stakeholders who have to arrange back-fill for their staff member on the programme. Sometimes this cover is provided by agency staff at considerable cost.
- Assessment boards and programme committee meetings have to align with existing structures where possible.
- By allowing each student to select (with their employers) three option modules as part of the programme, flexibility and profession specific content is assured. This also provides a place in the curriculum for new modules to be developed as the workplace requirements of students changes in the evolving health and social care arena.
- Student feedback has indicated that the anatomy and physiology (A & P) module carries a high workload. The proposal is therefore to swap this with the Reflection and Learning module. This module was one of the 'long-thin' modules that are

threaded through the first year. It is thought that extending the time period for learning A&P will benefit the students. We will however be emphasising that they will have to study the subject continuously across the year in order to gain maximum benefit. The risk is that with ‘in-between’ the sessions spread across the year, learning will not be consistently built upon. The flexibility built into the programme in the initial development stages however, allows for changes to be made to aspects of curriculum delivery relatively easily. It is acknowledged by the programme team that this will need to be constantly monitored and evaluated to ensure it remains a quality experience for learners and a quality product for commissioners.

### Action research and the 4D framework: How will we ‘act’?

Figure.2 outlined the ongoing learning process in action research by employing PDSA cycles. Action research suggests in its name, it requires ‘action’. In order to embed a continuous quality improvement cycle our findings here need to be implemented and evaluated through a series of PDSA cycles. As a result it is important to restate one of our aims:

*How we will know if change is improvement? The process of building PDSA cycles will lead us to evaluate our journey and outcomes*



Hence, we propose a quality improvement strategy which will lead into a subsequent cycle of PDSA to evaluate if the changes demonstrate improvement and what improvement will look like. Table.1 illustrates a sample high level strategy that might be used to inform our next

PDSA cycle but is also essential in assessing what types of intervention have been an improvement and where further improvements can be made. Conversely, the value of the 4D framework enables us to critically reflect on what is happening locally but also how the wider healthcare arena is changing and how we can respond effectively. A vision, operational plan and more specific and detailed action plans are essential in moving forward (Stringer, 2014). Our college vision provides the overarching focus of our continuous improvement and commitment to IPL:

*o To make a REAL difference to the lives of individuals, families and communities within our region.*

*o Be the University of choice for our health and social care partners' education and training needs across the region.*

*o Excellent student experience, delivered by highly credible and well qualified lecturers. A true Personal Touch.*

Dimension	Area of Implementation	Aim	Key performance indicators	Methods of evaluation
1	How will students work in an integrated care system?  Focus on the individual	To facilitate the education of professional, accountable and compassionate practitioners  Enable students to understand the value of IPL in the classroom and in practice  To facilitate career progression and continuous professional development  To ensure that the student and our collaborators are satisfied our programme is fit for purpose	- Increased % of students being satisfied with their modules and programme - Improved collaborator satisfaction - Increased student numbers - Design, development and validation of bridging modules and/or progression routes - Student achievement and competencies relating to IPL and linkage with interprofessional practice - evidence flexible learning options	- National student survey - Organisational student survey - End of module evaluations - Qualitative feedback through observation and narrative - Monitor student statistics - Team/committee meeting minutes & meetings with external partners - Evaluate the barriers preventing progression to BSc (Hons) - Validation feedback - Observation of those in practice - Shared reflection with students using the 4D

	Value for money	Being responsive to a financially constrained environment		framework - Students reflections of the 4 dimensions in practice
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Furthermore, we acknowledge the growing importance of stakeholder engagement, including our clinical partners and students (Stringer, 2014). Any further evaluation and improvement will require a shared approach to the 4D framework with both staff and students engaging with the reflective process and critical analysis of IPL and how this ‘theory’ may be employed in the practice environment to enhance interprofessional practices. Not only will this enable us to understand the wider role IPL plays in a range of contexts it will enhance other transferable and essential skills such as reflective practice, critical analysis and practice improvement.

### **Conclusion: Learning from 4 Dimensions**

Given the history of the University of Derby in shared learning, interprofessional education and integrated learning, it seems appropriate to build on this rich experience. However by employing the 4-D model our previous experience to be applied to the curriculum development in a structured manner.

The programme to date has a total of 75 students (in cohorts of between 11 and 24 students) brings the students together on one day a week. Feedback from the students highlights that they value the close link between university learning and the confidence to make changes in practice.

The role of action research and PDSA in education has proven to be useful, more so by employing a structure for reflection and enquiry with the use of the 4D framework. Along with this we believe it has enhanced the overall validity of the findings in both the local and wider context. As part of this process we have been able to achieve generation of new knowledge through employing an evidence based framework to structure reflection and critical analysis (dialogic & process validity). With use of the PDSA cycle, actions required have been informed by a range of observation and data collection but also enabled us to focus on those factors we can change (outcome validity). It is important to reaffirm the learning that has taken place within the team and how it has given us understanding of the student experience but also how our programme facilitates IPL. Furthermore, this forms the basis for moving forward, enabling us to be responsive to an ever changing environment (catalytic validity). Our results are specifically relevant to our environment and our programme development (democratic validity) but, conversely our process, structure [4D framework] and method presented here is transferable to a wide range of health and social care environments; not simply education in the university but also out in placement and practice areas (process validity) (Herr & Anderson, 2005).

*“A good action research project often has no well-defined ending. As people explore their lifeworlds together and work towards solutions to their common problems, new realities*

*emerge that extend the processes of inquiry...still, there is usually a time when it is possible to stand back, methophorically speaking, and recognize significant accomplishments.”*  
(Stringer, 2014: 207)

**Reflective Questions:**

- How do we as a curriculum team sustain the discipline of using the 4D framework as a tool for curriculum decisions?
- How can the 4D model be explicitly presented to students as a point of reference for their learning?
- How does the 4D model work in profession specific programmes and continuing professional development?
- Would you offer any advice as the team move forward to the next PDSA cycle?

DRAFT ONLY

## References

- Barr, H. (2012) *Integrated and Interprofessional Care*. International Journal of Integrated Care. Vol 12
- CAIPE/ Department of Health (2007) *Creating an Interprofessional Workforce: An Education and Training Framework for Health and Social Care in England* CAIPE
- Carr.W & Kemmis.S (1986) *Becoming Critical. Education, knowledge and action research*, Lewes: Falmer
- Chief Secretary to the Treasury (2006) *Every Child Matters*. Crown
- Damschroder.LJ, Aron.DC, Keith.RE et al (2009) Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science, *Implementation Science*, 4:50
- Dunston, R. Forman, D. Matthews, L. Nicol, P. Pocket, R. Rogers, G. Steketee C. Thistlethwaite, J. (2015) *Utilizing Curriculum Renewal a a way of Leading Cultural Change in Australian Health Professional Education*. Ch8 of *Leadership and Collaboration: Further Developments for Interprofessional Education*. Palgrave MacMillan. Hampshire.
- Edmond, N., Aranda, K., Gaudoin, R. and Law, K. (2012) The ‘assistant practitioner’ as ‘associate professional’? Professional development of intermediate roles in health and social care and education *Studies in Continuing Education* Vol. 34, No. 1, March 2012, 45\_56
- Forman, D. and Nyatanga, L. (1999) *The Evolution of Shared Learning: Some Political and Professional Imperatives* Medical Teacher Vol. 21 No 5 pp. 489-496
- Forman, D. (2000) PhD Thesis: *Shared Learning: Monitoring the Attitudinal Change of Staff and Students on Undergraduate Health Care Professional Programmes*. Sheffield Hallam University.
- Francis, R (2013) *Inquiry Report into the Mid Staffordshire NHS Foundation Trust Inquiry*. Crown
- Ham, C. Dixon, A. and Brooke, B. (2012) *Transforming the Delivery of Health and Social Care: The case for fundamental change*. Kings Fund.
- Ham C, Dixon J, Chantler C (2011). ‘Clinically integrated systems: the future of NHS reform in England?’ *British Medical Journal*, vol 342: d905.
- Helfrich, C.D. Damschroder L. J. Hagedron, H.J. Daggett G.S. Sahay A. Ritchie, M., Damush, T. Guihan, M., Ullrich, P. M. Stetler, C.B. (2010) *A critical synthesis of literature on the promoting action on research implementation in health services (PARIHS) framework*. Implementation Science.
- Herr.K & Anderson.GL (2005) *The Action Research Dissertation: A guide for students and faculty*, SAGE, California

Institute for Innovation and Improvement (IHI) (2008) *Plan, Do, Study, Act*, IHI, UK  
accessed online 27September2015  
[http://www.institute.nhs.uk/quality\\_and\\_service\\_improvement\\_tools/quality\\_and\\_service\\_improvement\\_tools/plan\\_do\\_study\\_act.html](http://www.institute.nhs.uk/quality_and_service_improvement_tools/quality_and_service_improvement_tools/plan_do_study_act.html)

The Kingsfund (2015) Health and social care: the first 100 days of the new government  
<http://www.kingsfund.org.uk/projects/new-gov/first-100-days> accessed 23rd September 2015

Lee, A., Steketee, C., Rogers, G. & Moran, M. (2013) *Towards a theoretical framework for curriculum development in health professional education*. Focus on Health Professional Education, 14(3) 70-83

Matthews, D (2015) Assistant practitioners: essential support in a climate of austerity *British Journal of Nursing* 24:4, 214-217

Meads, G., Jones, I., Harrison, R., Forman, D. and Turner, W. (2009) *How to Sustain Interprofessional Learning and Practice: messages for Higher Education and Health and Social Care Management* Journal of Education and Work Vol. 22 No 1 February pp 67-79

Powell.AE, Rushmer.RK, Davies.HTO (2009) *A systematic narrative review of quality improvement models in health care: NHS quality Improvement Scotland*, Report No. 1844045242, Scotland UK

Ritchie, R. (1995). *Constructive action research: A perspective on the process of learning*. Educational Action Research, 3(3), 305-322.

Ryan.GS (2015a) Themed Session 5: The 4Es of good degrees: how do student nurses succeed? *RCN Education Forum and Conference: Partners in Practice* 10-11 March 2015, East Midlands Conference Centre, UK

Ryan.GS (2014) Theme Session: Can formally facilitated Facebook groups enhance outcomes and experience of teaching and learning? *NET2014 Conference*, 13 September 2014 Churchill College, London

Ryan.GS (2015b) Theme Session: International perspectives on social media guidance for nurses: a content analysis, *RCN International Research Conference*, 20 April 2015, East Midlands Conference Centre, UK

Stephen M Shortell, S., Addicott, R., Walsh, N. and Ham, C. (2015) *The NHS five year forward view: lessons from the United States in developing new care models* BMJ 2015; 350

Stringer.ET (2014) *Action Research*, SAGE, Los Angeles

Taylor.MJ, McNicholas.C, Nicolay.C, Darzi.A, Bell.D & Reed.JE (2013) Systematic review of the application of the plan-do-study-act method to improve quality in healthcare, *British Medical Journal Quality & Safety*, 0, 1-9

The Interprofessional Curriculum Renewal Consortium. (2013) *IPE National Audit Report*.

Values Exchange (2015) <http://values-exchange.com>



Wareing, M., Chadwick, K. and Baggs, H. (2014) Student Satisfaction with Work-based Learning: Evaluation of a Foundation Degree Health & Social Care Programme *Practice-based Learning* Vol. 2 Issue 2, p65-79, 15p.

Weidman.J, Twale.DJ & Stein.EL (2001) Socialization of graduate and professional students in higher education: A perilous passage, *AHSE-ERIC Higher Education Report*, 28:3

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