Global sharing, local innovation: Four schools, four countries, one curriculum

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ABSTRACT
Background: Many internal and external obstacles, must be overcome when establishing a new medical school, or when radically revising an existing medical curriculum.
Aims: Twenty-five years after the Flinders University curriculum was introduced as the first graduate-entry medical programme (GEMP) in Australia, we aim at describing how it has been adopted and adapted by several other schools, in Australia and in Europe (UK, Ireland, and Portugal).
Method/Results: This paper reports on the experience of four schools establishing a new medical school or new curriculum at different times and in different settings.
Conclusions: We believe that these experiences might be of interest to others contemplating a similar development.

Introduction
Engaging in the complex task of establishing a new medical school, or in radically revising an existing medical curriculum, is not for the faint hearted. Many obstacles, both internal and external, must be overcome. The final outcome will be uncertain, such that a “leap of faith” will be required from all concerned. The process will take several years and will dominate the lives of those who lead the process.

These considerations haven’t deterred many of the more than 2500 recognized medical schools world-wide (World Federation for Medical Education 2015). The International Medical Education Directory indicates that of the 32 medical schools in the UK, 13 (28%) introduced their educational programmes within the past 20 years (FAIMER 2015). Corresponding figures for US and Australian schools are 30 (18%) of 171 and 8 (42%) of 19, respectively. Much of this new activity has been in response to recent changes in medical practice and perceived medical workforce crises, either national shortages, mal-distribution, or both.

In 1990, Flinders University in South Australia began to revise its existing six-year school-entry medical school curriculum; six years later this resulted in Australia’s first graduate-entry medical programme (GEMP). Twenty-five years on, the Flinders curriculum has been adopted and adapted by several other schools, three within Australia and five overseas (including St. George’s University of London, UK; University of Limerick, Ireland; University of Algarve, Portugal).

This paper draws on the collective experience of individuals from these schools who had pivotal roles in overseeing the broadly similar task of establishing a new medical school/curriculum but at different times and in different settings. In particular, we highlight the major issues that surfaced as these institutions became the “first of a kind” in their country in moving from school-entry to a shorter graduate-entry programme, and opting for a progressive release Problem Based Learning (PBL) approach to learning (Papageorgiou et al. 2015), which was new to the UK, Ireland, and Portugal.

Using a Delphi-type process, the authors agreed on the six points that form the headings below, with each contributing to them from the perspective of their School. We identified the common experiences that indicate generic issues in developing “first to market” schools and curricula.

A four-year GEMP

In opting for graduate-entry programmes, some common themes emerged from the four schools. Firstly, a graduate-entry approach was perceived to broaden entry into medical education, attracting students from atypical (including non-science) backgrounds, and possibly those from lower socio-economic groups. Secondly, it was hoped that the maturity of graduate-entry students would help them to cope with the cognitive and emotional challenges of their programmes and subsequent careers in medicine. Thirdly, all schools recognized that medical education had become bland and uniform in their country, and that a radical rethink would deliver curricula that would be more

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responsive to societal needs and relevant to advancements in the field. Finally, a four-year GEMP was perceived to be attractive to international students, adding to student diversity and generating revenue for financially squeezed schools that would benefit all students.

Problem Based Learning (PBL)

All four schools favored PBL because it sat comfortably with modern concepts of learning from the cognitive and behavioral sciences and because of the increasing evidence of its value (Schmidt et al. 2011). Furthermore, the active, self-directed, contextualized and team-based approach to learning inherent in PBL suited mature students. Details of the Flinders/St. George’s curriculum are provided elsewhere (Finucane et al. 2001; McCrorie 2001). In essence, the first two years of the course centre on PBL, with complementary clinical and anatomical skills teaching, sessions on the professional competencies and a modest number of fixed resource (lecture-type) sessions.

When introducing its new course, Flinders suspended admissions for two years and used freed-up staff time to design the new curriculum and develop the PBL cases. St. George’s had just a nine month lead-in time for its programme and therefore had to source a “ready-made” course. It opted to partner with Flinders because of the latter’s experience in introducing a graduate-entry programme, its educational philosophy, its use of PBL, its community-based approach and the similarity of health care systems in the UK and Australia. Initially the partnership was one-sided as Flinders trained the St. George’s staff in PBL and helped with assessment and student support. In time, the partnership became mutually beneficial as both organizations came to learn from each other.

Limerick had just six months of lead-in time before its first student intake. The decision to use the Flinders/St. George’s curriculum was based on several factors including high international regard for the curriculum and the credibility it brought; familiarity with the Flinders/St. George’s curriculum among some of its faculty; easy access to support from St. George’s; the successful track record at Flinders and St. George’s in introducing a new curriculum; the personal relationships that developed with faculty at Flinders/St. George’s; and the reasonable financial cost of the programme.

Similarly, the Algarve school was attracted to the successful, well tested, programme at St. George’s and the availability of a package which included the training of PBL tutors. Within one year of first contact in 2008, the programme was up and running with PBL material being translated into Portuguese even as the first batch of students arrived.

At each receiving school it was necessary to adapt the PBL cases to some extent so that they took account of such things as the demographics, disease prevalence, social, and cultural context, etc. In the main, this was a straight-forward process that required a few hours at most to be expended on each case.

A common curriculum in disparate settings

St. George’s, Limerick and Algarve all adapted the Flinders’ PBL cases to suit their specific contexts and needs, thus gaining ownership of the material. Though still requiring an investment in time and resources, this was negligible when compared to the effort involved in creating a set of PBL cases from scratch.

For all three schools the crucial component was the PBL cases that formed the backbone of the whole program. The availability of timetables, assessment materials, clinical skills materials and assorted auxiliary materials was immensely useful, but were secondary to the central role of the PBL cases.

St. George’s introduced significant changes to the original Flinders PBL cases, converting the two year linear sequence of cases organized by body systems into a spiral in which the cases were grouped into modules that were revisited in each year. Both Limerick and Algarve adopted this spiral structure, having only to revise and adapt the cases that St. George’s provided. Algarve had the additional task of translating the cases to Portuguese, which proved to be a straight-forward if not time-consuming task.

Difficulties encountered

All four Schools encountered major resistance to change. At Flinders and St. George’s, which had existing schools, the resistance was mostly internal. Flinders staff took time to understand the need for change and many were resistant to PBL. When a group of University of Newcastle students (the only Australian school then using PBL) came to Flinders and demonstrated a PBL tutorial, staff members were won over by their depth of questioning, curiosity and enthusiasm for learning (Prideaux et al. 1994). At St. George’s, the new four-year programme was developed and implemented parallelly with an ongoing five-year curriculum. Some perceived it as getting all the attention—the “new baby”—and some considered it too innovative, competitive and even elitist. Some chose not to engage with the course, even refusing to teach graduate-entry students. The situation was similar at Flinders where change was initially led by course champions and eventually accepted by most others, though 20 years later, some are still not convinced.

At St. George’s, new academic and administrative staff members were appointed to deal with the increased workload, allowing the recruitment of those who supported the course philosophy. At Limerick and the Algarve, all staff were new and the problem of unwillingness to embrace the course philosophy didn’t arise. In Limerick, however, there were concerns that the university had bitten off more than it could chew, that the lead-in time was too short and that a poorly delivered programme would fail its students and embarrass the university. Some were concerned that resources diverted to the new school would disadvantage existing departments and faculties. However, such “rumblings” were quickly quashed through strong support for the school from the highest levels within the university.

The main resistance at both Limerick and the Algarve was external rather than internal. In Ireland, external opposition to the new school focused on the notion that Ireland already had more than enough medical schools and could not support another. There were regular attempts to discredit the new school through media articles and the rationale for establishing the school was even debated in parliament. External negative publicity generally coincided with the
timing of the annual application process to medical schools. Eventual acceptance seemed to coincide with the graduation of the first student cohort in 2011. Compared to these political factors, the simple tasks of running PBL tutorials and clinical skills sessions, and of developing reliable and valid assessment processes, almost came as light relief.

Similarly at the Algarve, there was some reluctance among members of the local academic community and other national medical schools in accepting a new program so different from the traditional didactic teaching elsewhere in Portugal. There was further opposition to the school structure and management—a medical school without “chairs”, “departments” and the like was unthinkable. There was some initial resistance from the national regulatory body, Ordem dos Médicos (OM). Most of the resistance seemed to reflect a lack of accurate information about the course and resistance began to reduce once people took the opportunity to visit the school, to talk to its students and to observe the school in action. By contrast, the Irish Medical Council, the accrediting body for Irish medical schools, was of great assistance to Limerick and gave credit, advice and criticism in an appropriate and supportive manner—as did the General Medical Council (UK) and the Australian Medical Council.

**Benefits and downsides**

At all four schools, we believe that the new courses or curricula have positively impacted its students, faculty, the medical school, the host university and local health services.

The schools have succeeded in providing an entrée to medicine to people who considered this door to be firmly closed and many have embraced the opportunity with great enthusiasm. Initial concerns that graduates from non-science backgrounds would struggle for academic success have proved groundless—by the time of graduation, such students match and often exceed the academic achievements of those who enter with science degrees (Finucane et al. 2013).

At St. George’s, the new programme has had a positive impact on all students. Clinical and communication skills teaching have improved enormously, as has the teaching of medical law and ethics and other professional competencies. Flinders and St. George’s have both made good use of the environment of change to also enhance student assessment and course evaluation.

The educational initiatives across the four schools generated a huge amount of energy, and have been an integrating force between laboratory scientists, social scientists and clinicians. The new programs have also generated or are beginning to generate significant kudos for their host universities and this is reflected in their growing national and international reputations.

All four programs strongly focus on primary care, particularly in the early years, and this has brought primary care into the mainstream of the schools’ academic activities. For Limerick and the Algarve, which did not previously have medical schools, there has been an obvious positive impact on local health services as indicated by an expansion in the range of clinical services provided, the recruitment of additional clinical staff (including senior academic clinicians) and the establishment of clinical academic departments.

There has also been a major increase in research activity and research output as reflected in the establishment of research centers and institutes, the number of students completing higher research degrees, success in obtaining research grant, research publications, etc.

With regards to downsides, these have been greatly dwarfed by the programs’ benefits. Nonetheless, all four schools and their host universities have found graduate-entry students to be more demanding than school-entry students. With a degree program already behind them, graduate-entry students are quick to identify the short-comings (actual or perceived) in the structure or delivery of their medical programs, and expect speedy resolutions. Often, such situations can be to everybody’s advantage. For example, at Limerick, vociferous levels of dissatisfaction with library services among the first cohorts of medical student obliged the university to improve this service for all students. To our surprise, graduate-entry students have also had a disproportionate need for counseling services—using them more frequently and tending to seek help with a complex array of financial, health, and family-related issues.

Sustaining PBL has also proved challenging, particularly for the more established schools at Flinders and St. George’s. It is now clear that students enjoy PBL immensely in Year 1, begin to tire of it by the end of Year 2, and come to actively dislike it when it continues into Year 3. After an initial burst of enthusiasm for PBL tutoring, which in our experience lasts for 4–5 years, interest in PBL tutoring begins to wane. Maintaining a steady stream of committed PBL tutors therefore becomes increasingly difficult, particularly if there is no direct reward (i.e. remuneration) for tutoring. This has caused all of us to recruit “external” specialist PBL tutors who have no other teaching, research or clinical role within the school (Finucane et al. 2009). While such tutors have proved to be very reliable and to retain their enthusiasm, this approach has proved challenging for schools that value the integration of the three facets of academic life. The financial cost of delivering PBL in this way is also a factor, particularly as we are all faced with increasing student numbers and static or declining budgets.

**Academic and workforce outcomes**

Flinders, the first to start from this group, has the most data on outcomes. Its graduates now work in all fields of medicine and practice across all geographic areas. Student numbers have doubled and the entire programme is now taught in a new campus in Darwin, 3000 km from Adelaide. Creating a new medical course can also catalyze the adoption of innovative approaches to clinical teaching. The adaptability of the GEMP course to non-metropolitan areas (Worley et al. 2000) has resulted in preferential uptake of rural and remote careers in students (Worley et al. 2008). That three other medical schools in Australia have since licensed the Flinders GEMP curriculum suggests that the quality of graduates is perceived to be high by other schools.

At St. George’s, students have performed consistently well over the years, the drop-out rate has been very low, while the number of students gaining merits and distinctions has been on a par or greater than those from the school-leaver programme. Unexpectedly, the percentage of students who take up a career in Primary Care is no higher
than in school-entry cohorts, and likewise, the percentage of students entering Secondary/Tertiary Care is similar.

Limerick has now produced five cohorts of graduates—some 350 graduates in total. It’s much too early to look at the workforce implications, particularly as there were relatively few graduates in the first cohorts. The same comment applies to the Algarve school, where only three batches of doctors have qualified, a total of 91, and all are faring well in their internships and post-graduate training.

Lessons learnt and advice for others

There is consensus from the four schools that graduate students, from diverse walks of life, are highly capable and stimulating to teach. The four-year course provides a shorter time for these students to qualify and enter the workforce.

Based on our experiences, we offer the following advice to other universities contemplating a similar development:

1. Ensure strong institutional support and sufficient resources.
2. Get support from the local community and take the time to ensure a strong engagement with the project. Particularly involve the community in determining what innovative approaches to student recruitment are likely to complement the curriculum in creating the outcomes required.
3. Recruit a Course Director with a strong commitment to the project, who can recruit a dedicated and competent team. The Director should be educationally sound, highly credible with local academics and clinicians, be a good listener, and yet not afraid to make difficult and potentially unpopular decisions.
4. Visit, learn and make alliances with other comparable schools before starting. Consider using their best educational resources (human or material) in partnership, but keep your own identity.
5. Bring in the best in the world to help with faculty development—don’t underestimate the amount of faculty development that is necessary. If you are basing your new course on a curriculum from another medical school, ensure that you have ongoing support and engagement with academics from that school to assist with adaptation of the curriculum materials to your context.
6. Recognize that opposition will come from without (often motivated by competition and jealousy) and from within (often genuine concern and sometimes due to loss of power due to integration).
7. Work closely with students and involve them from the outset—they will be your champions. Set efficient, quick channels of communication with the students and give them an active voice in the development of the course.
8. Keep proven principles of learning as your guideposts rather than established methods of teaching.
9. Treat the project as an educational experiment and thus evaluate it carefully and frequently from the start.
10. Acknowledge the concerns of accreditation bodies as they come to terms with a new approach. Emphasize the international evidence base and the reputation that will flow to the accrediting agency for supporting globally cutting edge innovation. Ensure that the accreditors meet the enthusiastic students and the very supportive community advocates.
11. Make sure your decisions are supported by solid evidence, as you will have to defend them often and thoroughly.
12. Make it fun and celebrate each small milestone together—scientists, clinicians, administrators, educational leaders, community, and students.

Today, if graduates of Flinders, St. George’s, Limerick, and Algarve were to meet to discuss their medical school experiences, they would find that their courses were pretty much identical in structure in Years 1 and 2. They would immediately recognize the PBL cases to which each of them had been exposed. They would find that the associated anatomical skills, clinical skills, and professional competencies sessions might have differed in content and context, but would have addressed the same educational outcomes.

Graduates of the four schools would probably find that they had quite different exposures to clinical teaching in Years 3 and 4 but that the assessment processes, in particular, ensured that they had acquired a comparable level of knowledge and clinical competence. All would recognize that they had been given a solid foundation in the practice of medicine.

Disclosure statement

The authors report no declarations of interest.

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References


McCrorie P. 2001. Tales from Tooting: reflections on the first year of the MBB5 graduate-entry programme at St. George’s Hospital Medical School. Med Educ. 35:1144–1149.


