"BURSTING THE BUBBLE": Service learning in schools

Rachel Pilling | Jenna Mollaney | Rumbidzai Chandauka | Ishani Barai | Ravi Parekh

Imperial College London - Department of Primary Care and Public Health, London, United Kingdom of Great Britain and Northern Ireland

Correspondence
Rachel Pilling, Imperial College London - Department of Primary Care and Public Health, London, United Kingdom of Great Britain and Northern Ireland.
Email: rachel.pilling2@nhs.net; r.pilling@imperial.ac.uk

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Abstract
Background: At Imperial College, we developed a novel teaching programme for medical students based within a local primary school, with the aim of developing students’ teaching skills and centring social accountability in our curriculum. Similar service-learning programmes have shown significant benefit for student participants, including: improving communication skills, developing an understanding of the social determinants of health, and increased empathy. In partnership with a local primary school, the programme involved a group of medical students designing, developing and delivering a teaching session to primary school children.

Methods: Medical students completed written reflections on the programme and semi-structured interviews were conducted with teachers who had participated in the programme. These were then thematically analysed.

Results: Themes from student reflections included: improvement in teaching and communication skills; and an increased awareness of social accountability. Themes from teacher interviews included: benefits of an aspirational figure in the school; engagement of the children; and the ongoing inspirational benefit for the pupils.

Discussion: Our analysis suggested students and the school community benefitted. Students reported the experience was an effective way to learn teaching skills and to improve their communication with children. The programme delivered skills transferrable to other clinical contexts including leadership and behavioural management, adaptability and creative thinking. Teacher interviews suggested the programme was mutually beneficial. The framing of medical students as role models raised the possibility that such programmes may help tackle the challenge of widening participation in medicine. We would recommend medical educators to consider developing other mutually beneficial service-learning programmes.

1 | BACKGROUND

Medical schools are considering how to shape medical curricula to reflect the needs of the diverse community which their students will go on to serve. Increasingly, this means centring social accountability in their courses and considering the role of academic institutions within that framework. A socially accountable university directs its research and educational activities towards the priority health concerns of their community and works collaboratively with relevant stakeholders (Figure 1).

One way to achieve this is through service learning. These programmes, which embed students in a community project and...
respond to a specific need, have been shown to have significant benefit for students. These include improving communication skills, academic knowledge and an understanding of the social determinants of health.3–5 However, research in this area has focussed on the impact on students rather than communities. This gap in the literature is notable, given that the foundational principles of social accountability are rooted in valuing the social contract universities have with their community.3

In addition, the role of the doctor as a “teacher” is well enshrined in policy documents and literature, reflecting the importance of teaching skills in the undergraduate medical curriculum.6 Teaching is an essential part of the doctor-patient dynamic and evidence suggests that students who are trained as teachers are better communicators and better learners.7

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At the undergraduate Primary Care Education Department, Imperial College London, we have developed a novel programme for medical students with the aim of incorporating the development of medical students teaching skills and engagement with the community in a socially accountable way. In partnership with a local primary school, the programme allowed a group of medical students to design, develop and deliver a teaching session to pupils.

This study aimed to evaluate the outcomes of this programme for our medical students and also to determine the outcomes, if any, for the primary school community.

2 | METHODS

Medical students at Imperial College London attend clinical placements within deprived communities as part of a 6-year degree. Our primary school partner was situated in West London, in a diverse community with challenges of deprivation, poor health outcomes and academic achievement.8

Medical students from the final two years, who selected a module in medical education, participated in the programme across the academic year 2018/19. They attended the school on two occasions, to observe the school teachers in the classroom and build a relationship with the pupils (aged 5-10 years). Following the first visit, the medical students were supported by faculty and schoolteachers in designing and developing a teaching session based on the pupils’ learning needs. During the second visit, the medical students delivered their two-hour teaching session to the pupils, under the supervision of the school teachers.

2.1 | Analysis of outcomes for medical students

Medical students produced written reflective pieces about their experiences as a formative assessment for the module. After submission, they were given the opportunity to participate in this research, by consenting to their anonymised reflective pieces being thematically analysed. Eighteen of the nineteen students who took part agreed to participate in the research. The thematic analysis was performed by two educator-researchers involved in the project (RC/IB). Descriptive themes were arrived at by consensus using a structured thematic approach: familiarisation of the data, generating initial codes then searching for and defining themes.9

2.2 | Analysis of outcomes for school community

Primary school teachers were recruited by email. Of the seven teachers involved in the project, four consented to take part in the research. Semi-structured interviews were recorded and transcribed. Interview guides were developed in response to initial feedback from the students and teachers and then developed further via an iterative approach. The interviewer was an educator-researcher at the medical school who had not been directly involved in designing or supervising the project (RPi). The transcripts were anonymised and also thematically analysed.9 Following the initial analysis, the transcripts were reviewed by two other members of the team to ensure a consensus was reached (RPa/JM).

Ethics approval was granted for this project by the education ethics team at Imperial College London. Students undergo full Disclosure and Barring Service (DBS) checks on admission to the university (Figure 2).
3 | RESULTS

3.1 | Student outcomes

Three themes were identified in the reflective medical student pieces: development of teaching skills, improved communication skills; and increased awareness of social accountability.

3.2 | Teaching skills development

Specific teaching skills highlighted included: lesson planning, undertaking a needs assessment and the role of mentoring. This programme provided the opportunity to be fully in control of the lesson and allowed them to appreciate the steps involved in developing and delivering effective teaching.

"The first challenge involved creating an appropriately pitched lesson plan. Devising the learning objectives was harder than anticipated, as often my initial ideas were not realistic for the target age group." – Student 8

Devising the learning objectives was harder than anticipated, as often my initial ideas were not realistic.

Students also reported a new understanding of how to adapt in changing situations whilst teaching. Development of skills like flexibility and decision making are transferrable to the clinical environment as well as vital tools for a teacher.

"each group had a different dynamic (...) We had to find techniques that made sure everyone was involved" – Student 4

The students also highlighted that they enjoyed this opportunity for a different kind of challenge and problem solving; particularly the opportunity for creativity.

'I enjoyed this as it brought creativity to the fore, something I feel is perhaps lacking in the medical curriculum' – Student 7

'I enjoyed this as it brought creativity to the fore, something I feel is perhaps lacking in the medical curriculum.'

3.3 | Improving communication skills

Many students reported an improvement in their communication skills, specifically with young children. These skills are applicable to clinical practice, which many of the students identified.

"(I gained) so many different skills throughout such as communication to a young audience, talking and repeating sentences to aid recall and of course patience." – Student 11

3.4 | Awareness of social accountability

Students demonstrated an appreciation of the principles of social accountability: an increased awareness of the needs of the local community; and the responsibility the university has to serve those needs.

"there is also a lot of deprivation which as a medical student (especially in pre-clinical years), one can be blind to as it is easy to be trapped in the student 'bubble'." – Student 18

They reported a greater awareness, and respect for, cultural differences and how this can affect teaching and communication.
On reflection a mistake we made was not thinking about the cultural season of Ramadan, as several of the students were fasting, making a two-hour long session about food potentially insensitive.” – Student 19

3.5 | School outcomes

Themes identified in the teacher interviews included the benefits of having an aspirational figure and the longer-term impact of the university’s connection with the school.

3.6 | Benefits of having an aspirational figure

Several of the teachers mentioned that the presence of an external figure can help to inspire and motivate the children.

“Someone new coming in, they just love it. (...) It’s a breath of fresh air” - Teacher 4

“the doctor thing was kind of exciting to them (...) I think the professionalism in it attracted them” – Teacher 3

They reported the impact of a novel experience and the respect that the children felt interacting with people they perceived as ‘experts’ helped to engage the children and hold their attention.

“that’s huge in school, where they actually get somebody in who’s of a certain profession. And when the pupils realise that, they’re fascinated and the questions keep coming and coming” - Teacher 1

“maybe talking to a doctor was more important than what the doctor told them” – Teacher 2

3.7 | Longer-term impacts

Teachers reported the perceived ongoing benefit that the students' intervention had on the school children. They felt that information covered by the medical students seemed more memorable for the children.

“They remembered that for ages (...) they kept talking about it and talking about it” - Teacher 1

Several mentioned the potential aspirational benefits of the project in opening the pupil’s eyes to future aspirations:

“she’s very keen to follow that. Become a doctor or scientist. She loves science. (...) it could lead to other things” – Teacher 4

They reported that the project had a positive impact of inspiring the children to pursue academic study in the future, a welcomed but unintentional outcome.

“Education is a bit of a struggle sometimes, in terms of money... and for the children to be able to have these opportunities (...) Especially University, because it may eventually inspire someone to go and follow the same dream.” – Teacher 4

4 | DISCUSSION

This teaching session was designed to enshrine the values of social accountability and the importance of doctors as educators into our curriculum.\[h\].

Our analysis suggests that medical students were successful in achieving this objective, as well as demonstrating the benefit of the

**FUTURE PLANS: Service learning in the context of COVID-19**

The COVID-19 pandemic has led us to review how the programme can continue to be delivered safely. The program is planned to continue for the moment following risk assessments by the medical school and primary school. However, if the risk was felt to be too high, we have considered the following contingency options:

- Remote delivery of teaching
- Working with smaller class numbers to allow for social distancing
- Utilisation of bigger rooms to allow for students to effectively socially distant
- Weather permitting using outdoor spaces for the delivery of teaching

**FIGURE 3** Service learning in the context of COVID-19
project to the school community. Medical students reported the experience was an effective way to learn dynamic teaching skills and to improve communication with younger children. In addition to this, it allowed them to gain an appreciation of the values of social accountability and to begin forging links with the local community.

Feedback from the school highlighted the importance of role models for pupils. This raises the possibility that programmes like these, beyond their immediate benefit, may represent a tool in tackling the inequality in university admissions and the need for widening participation in medicine.10

Much has been written about the need to diversify the medical workforce to better reflect the diverse population it serves, but widening participation schemes often focus on older students who are preparing for university applications.10 In this project we have demonstrated the importance of intervening early to raise aspirations in school pupils through the use of role models, who the students are able to relate to.

The positive feedback for this project should be contextualised. It is important to recognise that the medical students were self-selected and we should be cautious about making assumptions of generalisability. Additionally, questions could be raised about the true social accountability of this project. The agenda and time frame were driven by the priorities of the medical school and though efforts were made to incorporate the educational needs of the children, they were not central to the design of the programme. Future work may benefit from a more collaborative approach from the outset.

Despite these caveats, the positive response from both sides of this project indicates that similar programmes would be worth exploring in the future (see Figure 3).

5 | CONCLUSION

This project has shown mutual benefit for medical students and school pupils and we would recommend other clinical educators to consider pursuing community focussed service-learning projects in their institutions.

Service-learning projects may be a useful tool in improving the link between higher education and our local communities, as well as raising aspirations of our younger people. Given the challenges faced by higher education in widening participation, and the little progress made so far in this vital area, this tool may be a useful method of tackling the inequality in higher education and society.

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CONFLICT OF INTEREST

None.

ETHICAL APPROVAL

Ethics approval was granted by the Imperial College Education Ethics Review Process (EERP). All participants gave signed consent for their anonymised data to be used for the purpose of publication. Images included have the consent of those photographed. All medical students undergo a Disclosure and Barring Service (DBS) check prior to admission to Imperial College London.

ORCID

Rachel Pilling https://orcid.org/0000-0001-7654-001X

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