DEVELOPMENT OF PEER-LED MEDICAL EDUCATION INITIATIVES AT THE UNIVERSITY OF LEICESTER

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Over the past five years, students at The University of Leicester Medical School have been pioneering large scale peer-led education initiatives and a number of programmes have been set up to complement the formal medical curriculum. These provide a structure through which senior medical students with an interest in teaching can offer academic support to their junior colleagues. Peer-led teaching is unique in form and enhances understanding through use of simple language and the insight of recent experience. The courses have proven to be popular with the majority of each cohort attending.

The most established of these teaching programmes is the ESA Insight revision course, which runs over eleven weeks and aids third year students in preparation for the Phase 1 Integrated Medical Sciences Assessment, covering all modules learned thus far. Each session comprises a short lecture and a series of case studies undertaken in small groups. The emphasis of the course is the integration and application of knowledge rather than examination coaching. Organisation, teaching material production and delivery is all undertaken by senior medical students.

1. BACKGROUND
Peer-led education has been employed in a number of settings, including sex education for
adolescents, chronic disease education programmes, and even in mainstream secondary school education. There is a growing body of evidence to support its use, describing benefits for both tutors and tutees. Teaching by peers may facilitate enhanced understanding through the use of simple language and the insight of recent experience. Student tutors benefit from the further development of communication and leadership skills. In addition, the parity between teacher and pupil creates a safe learning environment. As a doctor, the ability to teach and convey information to others in a readily-understandable way is vital in education of patients, colleagues and students. The curricular outcomes, as defined in the General Medical Council’s report entitled 'Tomorrow’s doctors', include the requirement for students to “develop the skills, attitudes and practices of a competent teacher”. Training and practice in the delivery of education would thus serve to catalyse the development of the doctors of the future.

2. PROJECT AIMS AND OBJECTIVES
The aims of this project were to develop and evaluate peer-led medical education initiatives for students preparing for medical sciences assessments and clinical examinations throughout the undergraduate curriculum. A further aim was the development of a teaching skills workshop for student tutors. Through evaluation, we aimed to assess whether peer-led interventions yield a demonstrable improvement in subjective and objective benefits to both student tutors and programme attendees.

The project is managed by a committee of senior medical students under the title of “Leicester Insight”. In order to meet the above aims and objectives this committee co-ordinated the running of each course, refined existing courses based on experience and feedback from previous years and created new courses tailored to areas of the curriculum in which the committee felt peer-led teaching would be most complimentary. These actions have sought to remain faithful to our core founding principles, as outlined below.

- The purpose of the programmes should be to consolidate existing knowledge rather than introduce new information.
- The programmes should be run independently of the Medical School; students attending should be aware that the content represents students’ perspective.
- The Medical School will have access to teaching materials to verify its suitability.
- Initiatives should be accessible to the entire cohort of students to avoid inequity.

Evaluation was carried out by formal quantitative and qualitative data collection during the running of the program. This data was analysed and the results disseminated in a variety of formats. The committee also regularly collected informal student feedback which was very useful in program refinement.

3. PROJECT OUTCOMES AND ACHIEVEMENTS
The project, which is managed under the title of “Leicester Insight,” comprises six large-scale teaching courses (Table 1).
Table 1. Peer-led teaching courses of the Leicester Insight programme. * denotes courses introduced since the award of funding.

In addition to the courses listed above, foundation doctors have developed a parallel near-peer course to support final year students preparing for the Final Professional Examination.

Courses are attended by the majority of each year group and the Leicester Insight programme delivers in excess of 8500 hours of peer-led student learning per year (summation of the products of hours of teaching for each programme and number of students attending each programme).

The programme also provides many opportunities for students to develop their teaching skills and more than 200 students volunteer each year. These valuable experiences range from small group teaching to preparing and delivering lectures.

Student feedback about the peer-led courses has been very positive and the programmes continue to adapt in response to changing students needs. In addition to the apparent educational benefits and teaching opportunities, peer-led teaching has fostered a new collegiality amongst students, as they seek to identify and support one another’s needs.

The Leicester Insight programme provides a valuable supplementary input for the personal and professional development of medical students at the University of Leicester. Although the concept of senior medical students offering academic support to those in junior years is not new, the scale on which it occurs is unique to Leicester Medical School. Whilst only a few student tutors will become formal medical educators, all doctors are required to teach patients and colleagues and the experience and skills gained through peer teaching will be very useful in the long term. Support from the University’s Student Experience Enhancement Committee has enabled further improvement of these courses over the past year and set the programme on a secure path for delivering high quality teaching and training in future years.

Below is a synopsis of the Leicester Insight peer-led teaching initiatives.
OSCPE Overview

OSCPE Overview is a two-day course designed to aid first year students in their preparation for the Objective Structured Clinical and Practical Examination (OSCPE) which is undertaken at the end of the summer semester. More than 150 students attend this course every year.

The format of the course is a series of lectures and practical stations. At each station students are taught the theory behind a particular skill, shown a demonstration and then given the opportunity to practice under the observation of the student tutors. Tutors provide individualised feedback on attendees’ examination technique and communication skills.

Lectures include:
- Explaining information to patients
- Presentation skills

Practical stations include:
- Communication skills
- Examination of the cardiovascular system
- Interpreting basic investigations
- Examination of the musculoskeletal system
- Examination of the abdominal system

A handbook has been produced to compliment the course and is given to attending students. The handbook contains summaries of clinical examination routines for each body system and other information relating to the OSCPE, such as a copy of the Leicester Assessment Package marking criteria.

Express Anatomy

The Leicester Insight committee felt that students should be given the opportunity to get involved in teaching at an early stage in order to give more time to develop teaching styles and skills. In the formal medical curriculum at the University of Leicester, the musculoskeletal system is taught to first year students and the majority of these students have a high level of anatomical knowledge by the end of the module. However, some students struggle to learn the vast amount of information.

In light of this, a new teaching course called Express Anatomy was developed in which second year students teach anatomy to first year students. Tutors are allocated a topic (as listed below) and asked to prepare a 20-minute teaching session using a variety of teaching aids in the dissection room, such as prosections and models. Student tutors are given freedom to allow them to experiment and develop their own teaching styles.

Anatomy Express programme:
- The Anatomy of the Cardiovascular System
- The Anatomy of the Spine and Pelvis
- The Anatomy of the Hand
- The Anatomy of the Foot
- The Anatomy of the Upper Limb
- The Anatomy of the Lower Limb
The course runs over three weeks with one tutor delivering the same session each week, providing them with the opportunity to build confidence and improve with practice. It is attended by approximately 60 first year students and feedback have been very positive. Student tutors on are given a certificate of achievement which they can put in their personal development portfolio.

ESA Insight

ESA Insight is the largest of the Leicester Insight teaching programmes and it is now in its sixth year. This 11-week course is designed to assist third year medical students in their preparation for the summative Phase 1 pre-clinical examination and is attended by the majority of the year group (in excess of 200 students). As with the other peer-led initiatives, feedback from attendees is always extremely positive.

Each session considers a different topic (see below) from the pre-clinical course and consists of a 20-minute lecture highlighting the major learning points, followed by a time of small group teaching on exam-style case studies. Group work questions are available to tutors well in advance and they are encouraged to produce PowerPoint presentations and other teaching aids to explain the background science behind the answer to each question. This greatly enhances the quality of teaching in each session. The course ends with a mock exam which is sat under exam conditions. This assessment is marked by student tutors and provides the attending students with excellent feedback on their progress.

Sessions:
The Cardiovascular System
The Respiratory System
The Upper Gastrointestinal System
The Lower Gastrointestinal System
The Urinary System
The Reproductive System
The Neurological System
The Musculoskeletal System
Clinically-applied Anatomy of the Head and Neck
The Psychosocial Modules
Mock Exam – written and marked by Leicester Insight

A major new advancement is the development of a course periodical, including a synopsis of the topic, the case studies for the small group session and two additional case studies for personal study each week. This material facilitates ongoing study and provides a useful reference to key points.

Examples of feedback from students at ESA Insight:

<table>
<thead>
<tr>
<th>What did you find particularly helpful in ESA Insight?</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Lectures to provide refresher and overview&quot;</td>
</tr>
<tr>
<td>&quot;Group work questions to test understanding and the group leaders were very helpful&quot;</td>
</tr>
<tr>
<td>&quot;Coursebook and extra questions&quot;</td>
</tr>
<tr>
<td>&quot;Testing knowledge. Helping to identify gaps&quot;</td>
</tr>
<tr>
<td>&quot;Discussions with the seniors in group work&quot;</td>
</tr>
</tbody>
</table>

Any other comments?
ReCCE

ReCCE (Revision of Consultation Skills and Clinical Examination) is a course which is designed to aid third year students in their preparation for the OSCPE at the end of semester 5. In this assessment students are appraised on a number of skills, including history taking, clinical examination skills, interpretation of investigations and patient education. The ReCCE course is tailored to revise all of these skills and runs over two consecutive weekends.

As this course delivers a significant amount of material to the students over a short space of time, a course book has been developed over the past two years to compliment the taught element. This contains course material as well as a copy of the Leicester Assessment Package for student reference.

In a similar way to OSCPE Overview, the ReCCE course provides opportunity for attendees to practice skills under the watchful eye of a senior student in a relaxed environment; tips and techniques are passed on and clinical relevance is explained.

The programme includes:

Lectures
Introduction to the Leicester Assessment Package marking criteria
Analysis of a consultation
Recording a patient history
Education of patients

Practical stations
General history and examination skills
Examination of the Cardiovascular System
Examination of the Respiratory System
Examination of the Abdominal System
Examination of the Musculoskeletal System
Examination of the Neurological System

IPE Insight

After the success of the ESA Insight course, the Leicester Insight committee received many requests to set up a similar course to aid fourth year medical students with their preparation for the Intermediate Professional Examination. In response to this, the IPE Insight course was developed.

IPE Insight is a six-week revision course. Each week a different section of the junior medical rotation is covered. The sessions consist of a 20-minute lecture covering the key learning points followed by
group work with set questions. Teaching is delivered by fifth year students, all of whom have taught at previous Leicester Insight courses and, as such, are experienced peer tutors. The course is attended by the majority of the year and takes place in multiple locations to allow those on placements outside Leicester to receive the same teaching.

Sessions:
Orthopaedics and Rheumatology
Gastroenterology and Nephrology
Perioperative care
Psychiatry
Cardiology and respiratory medicine
Endocrinology and General Practice

Teaching to teach

The Leicester Insight teaching courses provide many opportunities for students to gain teaching experience. However, as formal training in medical education is not currently a component of the undergraduate curriculum, such instruction was considered to be valuable and necessary to produce high quality educators.

For this reason a two-day training course in medical education, named “Teaching to Teach”, was set up. The course was developed by staff from the Student Learning Centre after extensive consultation with the Leicester Insight team. Attending students explore both the theory and practicality of teaching and have the opportunity to experiment using various methods, such as role plays and mock presentations. Talks and interactive sessions on the theory of learning, learning styles and teaching styles are complimented by application as attendees deliver five-minute presentations. Staff from the Student Learning Centre and experienced educators from the Medical School provide constructive feedback and invaluable advice.

Places are available to all third year medical students and in the opening year over 160 students applied for 40 places. Unfortunately, despite the interest in the course, aspirations to widen access have been hindered by failure to find a suitable time for students to attend when they may be excused from the undergraduate course. The future of the Teaching to Teach course will depend upon the ongoing negotiations to establish a time which does not compromise these requirements.

Website

A Leicester Insight website has been created to enable communication between the Leicester Insight committee, student tutors and attending medical students. The website provides easy-to-access information about the range of peer-led courses, as well as session topics, dates and locations. Among other things, a description of the background, values and aims of the Leicester Insight programme is also available. This website has the potential to be used for distributing teaching material and recordings of lectures to students who are unable to attend organised sessions. A webmaster is to be appointed to the committee to oversee this area of ongoing development.

Leicester FPE

Former Leicester Insight co-ordinators have carried their enthusiasm for education into their medical careers. In 2009, a new near-peer programme was created to provide bedside teaching and focussed lectures for students preparing for the Final Professional Examination. Leicester FPE is run and
delivered by foundation doctors, most of whom trained at Leicester Medical School, and emphasises the importance of supervised clinical practice at the bedside. Each foundation doctor is allocated two students who they meet on a regular basis to provide teaching tailored to the students’ needs.

Foundation doctors are ideally placed to mentor final year students having taken the examination less than one year previously and can provide focused support addressing the particular weaknesses of the assigned students. This is an exciting new programme and this year involved 99 foundation doctors at three teaching hospitals and six district general hospitals.

Material resources produced:

- ESA Insight course book (Appendix 6).
- ESA Insight Mock Exam (Appendix 7).
- ReCCE course book.
- OSCPE Overview course book.
- IPE Insight case studies.

4. Evaluation

The results of a qualitative and quantitative evaluation of the ESA Insight programme have been accepted for publication in Medical Teacher (Batchelder et al. 2010) (Appendix 1). The article, entitled "The role of students as teachers: four years’ experience of a large-scale, peer-led programme", reports on the difference that the programme has made to academic performance and students’ perceptions about assessments. Written consent was gained from each student for their data to be included in the study. Whilst no statistically significant difference in examination performance was identified when comparing attendees with students who did not attend, the majority of students reported that they considered it to be useful and felt better prepared for the target assessment as a result of this intervention.

Two posters were presented at the annual meeting of the Association for the Study of Medical Education (ASME), hosted by the University of Leicester in September 2008. The first poster described the value of the ReCCE course in supporting the introduction of a new assessment format for third year students (Appendix 2). The second poster reported the benefits described by student tutors involved in running the peer-led courses (Appendix 3). In addition, an oral presentation was delivered describing our work into the qualitative and quantitative benefits for students attending the ESA Insight course (Appendix 4). The students involved in establishing the IMSA Insight course were awarded the runner-up position in the Sir John Ellis student prize – a national medical education award, in recognition of this work. Abstracts of these presentations are attached at the end of the report.

Andrew Batchelder and Professor Stewart Petersen ran a workshop on peer-led teaching at the annual meeting of ASME in September 2008. Heavily oversubscribed, the workshop was received with great interest from delegates, students and faculty members alike.

In addition the success of the program was recognised in the newsletter “Leicester med” which is circulated among the university's medical departments both in Leicester and the surrounding district hospitals (Appendix 5).
Peer-led teaching is a relatively understudied phenomenon and the impact of the Leicester Insight programme on students and staff requires further evaluation. The above successes show that this research is of interest to the medical education community and provides further motivation for the committee to continue this pioneering work.

5. CONTINUATION OF THE PROJECT

Leicester Insight peer-led teaching initiatives provide a valuable supplementary input for the personal and professional development of medical students at the University of Leicester. Sustainability is therefore an important aspect of the programme. The last year has been focused on refining and consolidating the portfolio of courses as well as facilitating a smooth transition to new leadership necessitated by the imminent departure of experienced programme co-ordinators. Leicester Insight is now led by a keen committee of four senior and two junior students, all of whom have previously been involved in the initiatives as both attendees and teachers. They plan to continue the running and development of the programme indefinitely.

Many of the aims, as set out in the original proposal, have been achieved and have led to a significant improvement in the Leicester Insight programme. The achievements described ensure that the University of Leicester is firmly established as a national leader in peer-led medical education.

ACKNOWLEDGEMENTS

The co-ordinators of Leicester Insight would like to take this opportunity to thank the University of Leicester for its support and funding, without which such progress would not have been possible. We would also like to thank Professor Stewart Petersen and Stuart Johnson for their expert input and guidance.

REFERENCES

Appendix 1


**The role of students as teachers: four years' experience of a large-scale, peer-led programme.**


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Abstract

AIM: This study set out to explore whether a teaching programme developed and delivered by medical students yielded an improvement of attendees' examination performance or their experience of preparing for the target assessment.

METHODS: Over 4 years all students were invited to consent to use of their official examination data. Students were ranked for baseline performance and again for performance in the target assessment. Change in rank was compared for attendees and non-attenders. Additionally, a questionnaire was distributed to students before and after the peer-led programme. Attendees' responses were compared to those of non-attenders.

RESULTS: No statistically significant difference in change in rank was observed between the two groups on evaluation of quantitative performance data. The majority of students (81.0%) scored the programme four or five in terms of perceived usefulness on a five-point Likert scale. Attendees reported statistically significant increases in preparedness for the examination (p=0.001) and in familiarity with the style of examination questions (p=0.004) compared to students who did not attend.

CONCLUSION: This study suggests that teaching from peers may improve students' perception of their preparedness for official assessments. However, such interventions may be limited in their ability to produce a demonstrable benefit in terms of examination performance.
Appendix 2

The value of peer-assisted learning to support the introduction of a new assessment format

A J Batchelder, W M Y Chen, A A L Choong

Introduction

The physiological and psychological effects of examination stress are well-documented in the literature. The experience of stress is influenced by a number of variables, including individual factors (e.g. age, gender, personality) and contextual factors (e.g. nature of assessment, social support). In addition, the perception of control and ability to predict future events is a powerful moderator of stress.1 During the academic year 2007-08 Leicester Medical School changed from long case assessments to objective structured clinical examinations. We established a peer-led programme in order to support third year medical students through this transition.

Methods

A group of senior clinical students, with guidance from Faculty staff, co-ordinated a two-day programme. The course was made available to the entire cohort and consisted of lectures clarifying the examination format and the assessment criteria, practice stations and communication and clinical examination skills revision. The latter was undertaken in groups of approximately 20 students each led by a team of three senior students. In order to assess the value of the programme attendees were asked to complete a questionnaire, which included 5-point Likert scales and free text boxes.

Results

More than 100 students attended all or part of the course and 61 students returned questionnaires. Students reported that the programme was a useful adjunct to their preparation for the index assessment (mean 4.7 on a 5-point Likert scale), that it improved their consultation skills (4.7) and that they were more aware of what to expect (4.7). In free text boxes students were asked to highlight what they found particularly helpful; themes included the opportunity to practice the new format of examination (n=19), observation by and personal feedback from student-tutors (n=12), an improved understanding of the format and assessment criteria (n=12) and consolidation of consultation skills and knowledge (n=11).

Conclusion

The peer-led initiative described served to increase the preparedness of attendees and clarify expectations of them. This may have moderated students’ experience of examination stress, although further work is required to explore this. This programme demonstrates how senior students may act as a valuable resource to support the delivery of the medical curriculum.
References


Appendix 3

Does experience of teaching benefit students?: Evaluation of involvement in peer-led initiatives in medical education

L-Y Lin, A J Batchelder

Introduction

The curricular outcomes as defined in Tomorrow’s doctors include the requirement for students to “develop the skills, attitudes and practices of a competent teacher”.1 The interpretation of this directive varies between medical schools from an optional formal medical education component to a less-defined implicit conveyance of generic teaching skills, such as presentation skills and leadership responsibilities. The growth of peer-led educational programmes provides students with new opportunities to develop such skills. This study was conducted to evaluate the perceived benefits of peer-led initiatives to student-tutors.

Methods

Fifty-seven students who were involved in the delivery of peer-led basic sciences and clinical skills revision programmes were asked to complete a fourteen-item questionnaire, consisting of 5-point Likert scales and free text boxes. Themes included were benefits in terms of acquisition of skills, knowledge and confidence, prior experience of teaching, motivations for involvement and difficulties encountered.

Results

Fifty-four students (95%) responded to the questionnaire. On a 5-point Likert scale students reported that the teaching was highly beneficial (mean: 4.6), consolidated existing knowledge (4.2) and increased confidence in teaching compared to previously (4.0). Fifty-two students (96%) replied that they would “most definitely” like to be involved with teaching again. Responders offered a range of motivations for participation; these included a desire to consolidate existing knowledge (n=27), enjoyment of teaching (n=23), a desire to help junior students (n=14), wanting to gain experience of teaching (n=13) and an interest in a career in medical education (n=9). In addition, other benefits reported by students included practicing communication and presentation skills, forging links between different year groups, developing team-working and leadership skills and experiencing different learning and teaching styles. The main difficulties identified were conflicting time commitments, an occasional reluctance of attendees to participate and limitations of student-tutors’ knowledge.

Conclusion

As a doctor, the ability to teach and convey information to others in a readily-understandable way is vital in the education of patients, colleagues and students. This study has described a range of
benefits to student-tutors, not least the acquisition of new skills and the enjoyment of teaching, as evidenced by an overwhelming willingness for future participation in teaching.

References

Appendix 4

Evaluation of a peer-led basic sciences teaching initiative

A J Batchelder, P M Hickey, C Johnson, L-Y Lin, C M C Rodrigues

Introduction

The benefits of peer-led education are well-described in the literature in primary and secondary education; however, to date reports in medical education remain limited and describe programmes co-ordinated by faculty staff.1,2 This study serves to evaluate an initiative which has been running for three years, conceived and delivered by medical students in their clinical years to support junior students approaching an important pre-clinical written assessment.

Methods

The course consisted of eleven weekly sessions of two hours duration and was available to all students in the cohort. Each session included a short lecture and structured case studies, the latter forming the basis of small group teaching by a team of senior students. The programme concluded with a written examination, in a similar style and format to the faculty assessment. In order to evaluate the programme, attendees were asked to rate how helpful they found the sessions on a 5-point Likert scale. In addition, we sought consent from students, both those who had attended the programme and those who had not, to utilise their official examination results to investigate if the two groups of students performed differently. A ratio of performance in the index assessment to previous performance (using a composite score generated by the official faculty examinations) was compared for students attending no sessions, 1 to 4 sessions, 5 to 8 sessions and ≥ 9 sessions.

Results

The evaluation ran for two consecutive years and attendance was variable, ranging from 60 to 150 students per week. Consent was obtained from 184 students for use of their data and quantitative analysis was performed as described above. 86% of attendees rated the programme as 4/5 or 5/5 in terms of usefulness. Quantitative data showed a trend of improved performance from those who had not attended to those who had attended more than 9 sessions, however, this was not statistically significant.

Conclusion

Junior students found the programme to be helpful in preparation for their assessment and this was reflected by both positive feedback and the high level of attendance. Although a significant quantitative difference between attendees and non-attendees could not be demonstrated, these results suggest that there may be a small benefit in terms of examination performance and future work should seek to explore this.
References


Insight Programme

The Insight Programme continues to be highly successful. This student led programme, one of the largest and most established of its kind in the UK, runs a series of large-scale peer-to-peer teaching courses in which senior medical students teach their junior colleagues. The courses are designed to complement the formal medical curriculum and provide supplementary support to students preparing for exams.

The Leicester Insight programme is supported financially by the University of Leicester’s Student Experience Enhancement Committee which has enabled the provision of Leicester Insight-authored course books to all attending students.

The programme directors are currently conducting research into peer-led medical education at Leicester and some of this work was presented at the Association for the Study of Medical Education Annual Scientific Meeting in Leicester.

Professor Stewart Petersen, Head of the Department of Medical and Social Care Education, commented: “Leicester Medical School is proud that our students are so committed to helping one another through the course. The wide range of peer teaching initiatives brings great benefits both to the students who attend and those who act as peer teachers, many of whom aspire to go on to a career involving medical education.”