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Development of a Peer Assisted Learning scheme for first-year engineering students

Cole, J. (2024). Development of a Peer Assisted Learning scheme for first-year engineering students. In C. Emsley-Jones (Ed.), *Student-led peer learning and support: Part 4 - Case studies of practice* (pp. 18-20). Advance HE. <https://documents.advance-he.ac.uk/download/file/document/10750>

Published in:

Student-led peer learning and support: Part 4 - Case studies of practice

Document Version:

Publisher's PDF, also known as Version of record

Queen's University Belfast - Research Portal:

[Link to publication record in Queen's University Belfast Research Portal](#)

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Supporting their peers primarily during taught sessions, SLAs reinforce learning in real time, facilitate timely interventions, lend insightful feedback to academics, and enhance students' experience. For instance, a Foundation Year Business Module Leader commented on the impact an SLA made in supporting a mature international student who achieved a borderline pass during her first assignment. The academic and SLA discussed intervention options and agreed that the SLA allocate some time in each class to work closely with this student to share tips and encouragement for completing tasks in class. The support provided resulted in the student building confidence, engaging more in class and achieving 62% in the second assignment. The student acknowledged the positive impact of the SLA's role on their progress. This view was echoed in our 10-year review of the SLA scheme where a student focus group observed that SLAs "make the seminars more interesting..., are a bridge between the students and the tutor...make it easier for us students to relate to the topic."

The impact on student outcomes is made possible by robust training and collaborating with academics before and during the tenure of their roles. This was particularly eminent during the Covid-19 pandemic where some SLAs employed reverse mentoring roles in supporting technology-enhanced teaching. In our review, one academic remarked that SLAs provide student perspectives on aspects of curriculum planning, teaching methods and tools. Another academic highlighted the essence of the student voice and relationships in planning and preparing to teach.

In our Science and Technology Faculty and certain creative disciplines, students are required to practise skills in labs, studios or skills workshops. The SLA role becomes an integral part of the academic team in some of these settings. For instance, in Computer Science programmes, our review reveals that as students practise the skills in the lab, SLAs, lecturers, technicians, and Graduate Academic Assistants are seen as equals by the students in providing support and guidance. This however presents issues regarding unclear SLA roles, power dynamics and role conflict.

Most importantly, our review highlighted SLAs benefit from the role by enhancing their graduate skills including communication, organisational, leadership, mentoring, and facilitation skills.

4.4 Development of a Peer Assisted Learning scheme for first-year engineering students

Dr Jonathan Cole, Queen's University Belfast

Students whose prior-educational and personal development as 16-18 year olds was impacted by the Covid-19 pandemic, and the associated isolation and alternative assessment arrangements, continue to need to adapt to the challenges of university study. Our Peer Assisted Learning (PAL) scheme encourages engagement over struggling alone and aims to overcome the stigma of asking for help. PAL promotes collaboration and

communication, which encourages social confidence and more articulate interactions with others.

PAL has been embedded in the school culture since 2016. It was established to provide additional academic support for first-year students who may otherwise struggle with difficult subjects like mechanics of materials and thermodynamics along with the large class size restricting the extent of one-to-one attention. The format generally consists of two drop-in sessions per week in an open plan groupwork room. PAL sessions are marked on students' timetables, emphasising their place in the schedule, albeit attendance being voluntary. Mentors are second, third and final-year undergraduates and a new team is selected each year. Training has a general element (including communication, building rapport, group dynamics, guidelines) provided centrally plus a subject-specific element (decomposing engineering problems, School operational matters) provided by the academic coordinator. Advertising has been mainly through email and posters.

In 2017/18, 20% of first-year students used PAL at least once. Numbers peaked in 2018/19 with maximum attendance 31, a mean of 11, and often at least 20 students present. The pandemic caused a significant (but temporary) adjustment – use of MS Teams and graphics tablets. However, attendance in 2021/22 was poor. Recent mentors have been proactive and creative to recover engagement. Sessions with particular focus and specific to current needs (e.g. welcome event, thermodynamics revision quiz, SolidWorks support) were most popular. The nature of the class timetabled prior to the PAL session probably influences attendance at PAL. Our focus group research indicates good awareness of PAL and no barriers to attending. Some students simply prefer to work in their own small groups, commenting on the achievement of solving problems by themselves.

Testimonials demonstrate mentee development but in the context of independent learning:

Testimonials

“I liked how informal the sessions were, as I was able to work on whatever I needed to, with as little or as much help as I needed. I also liked how when I asked for help, I was still challenged to complete the question myself, rather than just being told the method and answer.”

“I used the PAL mentors to help me understand what I was doing and learning throughout each process. This has proved invaluable helping me understand the key principles of various topics.”

While the motivation for PAL was to support first-year students academically, additional benefits for mentors have included increased sense of community within the school, opportunity of an autonomous position of responsibility and reinforcement of own study skills and subject knowledge. The experience of going back to basics to help mentees rather than assuming knowledge, enabled one mentor to manage project teams more effectively by ensuring members understood the activities and deliverables. Conditions for a successful PAL scheme include invested and enthusiastic mentors, a suitable time and location for sessions, and effective advertising.

5 Addressing attainment

5.1 The impact of Academic Peer Mentoring on Foundation Degree students at Kingston University

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The Pharmacy Department at Kingston University (KU), with its widening participation ethos, is committed to increasing access to higher education for everyone with the potential to succeed. In line with this, it offers a two-year Pharmaceutical and Chemical Sciences Foundation degree (FD) as an alternative and more accessible admission route to Pharmacy. Successful FD graduates progress to the second year Pharmacy. However, FD students often encounter challenges in pharmaceutical calculations and chemistry subjects impacting their attainment, retention, and overall progression rate.

The Academic Peer Mentoring programme at KU is a key component of the intervention strategies outlined in the KU Access and Participation Plan. This plan has been designed to reduce disparities in continuation, completion, and degree awards, particularly aiming to bridge the gaps in the outcomes of students from groups underrepresented in higher education. The programme pairs experienced students with less experienced ones, fostering a supportive learning community. This programme takes three forms: in-curricular/embedded, extra-curricular/mentor-led, and bespoke, allowing students to share experiences, concerns and advice while enhancing their subject knowledge and academic skills.

To address low attainment and retention in FD, in 2021-22, the mentor-led form of Academic Peer Mentoring was introduced to support FD students struggling in pharmaceutical calculations and chemistry. Early in the year, diagnostic tests were designed to help students gauge their need for additional learning support for these subjects. Approximately 20% of the cohort opted to join this programme. Higher-level pharmacy students were