

Cyflwynwyd yr ymateb hwn i'r [Pwyllgor Plant, Pobl Ifanc ac Addysg](#) ar gyfer yr [ymchwiliad i recriwtio a chadw athrawon](#)

This response was submitted to the [Children, Young People and Education Committee](#) on the [Inquiry into Teacher recruitment and retention](#)

Ymateb gan: Canolfan Ymchwil Addysg Ysgolion yr Alban
Response from: Scottish Schools Education Research Centre (SSERC)

03 June 2025

The Scottish Schools Education Research Centre (SSERC) warmly welcomes the opportunity to contribute to the Children, Education and Young People Committee of the Welsh Senedd in 2025 and to its important consideration of teacher recruitment, retention, and professional satisfaction in Wales.

SSERC is a registered charity and a leading provider of professional learning and wider resources in support of STEM education in Scotland. Its suite of CPD programmes are accredited by the General Teaching Council for Scotland and, in 2025, SSERC celebrates its 60th anniversary of supporting educators and students alike.

The enclosed submission represents the collective appraisal of the challenges and opportunities present within the educational landscape as appraised by our team of STEM teaching professionals as well as the generously contributed views of those who have recently participated in our in-person and online training programmes.

SSERC strongly believes that a thriving teaching profession requires the continuous provision of training, development and progression opportunities to both the teaching and technical services workforces as well as that such opportunities can be provided without undue or prohibitive cost. We would welcome the opportunity to work further with the Committee, Welsh Government and our local counterparts to support the important aspirations of this committee with regard to the recruitment, retention and professional satisfaction of educators in Wales. We would also be pleased to provide additional written evidence, present oral testimony to the Committee, or engage in further discussion as appropriate to support the aims of this important inquiry where this may be of benefit.

Yours sincerely,

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Written Evidence Submission on behalf of
Scottish Schools Education Research Centre (SSERC)
on 03 June 2025

**For consideration by the
Children, Young People and Education Committee (Welsh Senedd)**
as part of their ongoing inquiry on the subject of
Teacher recruitment and retention

A. Organisation summary

SSERC (Scottish Schools Education Research Centre) is a registered charity that supports STEM education across Scotland. SSERC serves all 32 Scottish local authorities and provides a range of services to the education profession including:

- a comprehensive calendar of both online and in-person professional learning courses with a focus on the facilitation of safe and effective practical work,
- a national health and safety advisory service,
- authoring and distributing publications (known as the SSERC Bulletin series),
- as well as a wider range of engagement activities designed to empower teachers to deliver primary and secondary courses effectively.

In addition, SSERC oversees the Young STEM Leader Programme (a national award scheme designed to inspire and develop leadership skills in young people through engagement in STEM activities) and the Scottish delivery of the UK-wide STEM Ambassadors Programme, connecting volunteers from industry, academia, and research with schools and youth organisations to support student learning and attainment.

SSERC is celebrating its 60th anniversary in 2025 and, as a cross-disciplinary provider of professional learning for teachers, is well placed to respond to this inquiry and offer recommendations and insights that align with the remit of the inquiry.

B. Executive summary

- Practical science work remains essential for learner engagement and scientific understanding. It is critical to support teachers whose initial training was impacted by COVID-19 through targeted CPD as many such educators report that their opportunities for laboratory engagement were reduced considerably as a result of pandemic interruptions.
- Biology education encompasses a broad range of disciplines, leading to considerable diversity in the academic backgrounds of teachers entering the profession. It is therefore essential that professional learning opportunities are provided to equip teachers with the practical and theoretical knowledge most relevant to the curriculum and qualifications they are delivering.
- Technical support staff are a vital resource in science education, enhancing the quality, safety, and efficiency of practical work and contributing to professional development activities. Ensuring adequate training and staffing for technical education professionals is essential in supporting both teachers and students to succeed in STEM subject areas.
- Teachers report learner engagement to be low. Effective primary-secondary transition planning must ensure coherent learner progression, fostering early engagement with STEM and resulting in secondary school students better equipped to succeed in their studies.
- A comprehensive approach to these areas that prioritises training opportunities for both teachers and technicians will strengthen satisfaction and personal confidence within the education profession.

C. Engagement with the following terms of reference:

- **Factors affecting retention**
- **Impact on learners**
- **Addressing recruitment and retention**

Practical science activities

In developing curriculum, the centrality of laboratory and investigative work must be maintained, even within the context of financial and logistical pressures facing schools. These laboratory skills are keenly required across a range of biomedical, pharmaceutical, life science, energy, food manufacturing and environmental science industries. However, many teachers who engage with SSERC's work indicate that they are increasingly required to reduce these activities due to budget constraints. Much of SSERC's laboratory protocol development in recent years has sought to innovate in a manner that supports educators in continuing to undertake practical work despite these pressures. This is exemplified by our microscale biology and chemistry activities, which reduce reagent costs and improve the safety profile of many common science experiments. Many educators who adopt or are instructed in protocols such as these report that they feel more able and empowered to deliver the qualifications with which they are tasked to a high standard [1].

Additionally, in appraising the retention of teaching staff who have recently entered the profession, it is vital to recognise that a significant cohort of newly qualified teachers received their initial scientific training during the COVID-19 pandemic, a period when access to laboratories and practical training was severely restricted. In response, high-quality continuous professional development programmes are essential to address these gaps. Attendee appraisals and course applications for recently delivered examples of SSERC's professional learning in this area, Practical Techniques for Newly Qualified Teachers (Biology), exemplify this recognised need among the profession:

“As a newly qualified teacher with limited practical experience from university it's benefited me a lot.”

“Very beneficial, lots of cost saving ways to improve experiments.”

“Due to missing out on practical techniques during my PGDE due to covid I did little to no practical techniques as most of the course was online.”

The Committee should consider the needs of teachers whose training was impacted by COVID-19 adjustments, as well as those who are striving to fulfil the practical components of their qualifications during a time of challenging public finances, might be empowered to succeed through the provision of similar CPD opportunities. Over the past two academic years, SSERC has supported almost 200 newly qualified teachers (NQTs) in Scotland, demonstrating a need and a willingness from those entering the teaching profession to invest in their training [1,2].

Our recommendation as it pertains to this area of the inquiry's terms of reference is that CPD provision for newly qualified teachers is strengthened and a focus given within this provision to practical laboratory skills that were negatively impacted by COVID-19 restrictions and their impact on tertiary science education/teacher training within Wales. Consideration should be given to a national CPD entitlement framework with a focus on subject-specific training.

[1] SSERC Annual Report (2023),
<https://www.sserc.org.uk/secure/tnkdzdbw/sserc-ar-2023.pdf>

[2] SSERC Annual Report (2024),
<https://www.sserc.org.uk/secure/bqog2c44/sserc24-ar-report-2024.pdf>

C. Engagement with the following terms of reference:

CONTINUED

- **Factors affecting retention**
- **Impact on learners**
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Investment in the training, recruitment and retention of technicians

Technical support staff are fundamental to the delivery of high-quality practical science education and should be appropriately valued and integrated within school staffing structures. Laboratory technicians play a critical role not only in the preparation and maintenance of equipment and materials but also in safeguarding health and safety within practical environments. Their specialist skills can significantly enhance both classroom demonstrations and teacher CPD activities. Ensuring adequate provision of trained technical staff supports efficient lesson delivery, enables teachers to focus on pedagogy, and ensures that practical science is conducted both safely and to a high standard, contributing directly to improved learner outcomes and minimising strain on classroom teachers.

SSERC delivers a three-day course entitled ‘Safety in Microbiology’ multiple times each year and has worked with various partner organisations in the Scottish further education sector to establish a network for accredited providers for the qualification. The course is aimed at those members of the education profession employed within technical services and remains consistently oversubscribed (with approximately 2-3 applicants for each available place on the programme) demonstrating sustained appetite within the profession to engage in competency-based professional learning.

In addition, each year our organisation delivers the SSERC Technicians Conference, an in-person event to which a plurality of our subject specialists contribute. This event is designed to offer technicians in Scotland a variety of workshops, helping them build on their existing skills while also introducing them to new tasks. By participating, they’ll have the opportunity to enhance their expertise and bring fresh ideas and techniques back to their schools. This event is hosted at our SSERC Campus in Dunfermline and is made available to technicians for free as it was noted that even minimal costings are accompanied by a need to secure permissions and support from schools and/or local authorities, potentially acting as a deterrent to attendance or making attendance unfeasible due to restricted public funds.

“Making agar, pouring and setting plates, and producing streak plates. I will be performing these tasks in my workplace. Was great to get hands on experience to build my confidence.”

“The soldering was a skill I was actively looking for a way to learn so that was brilliant timing. The micro-scale chemistry I think will be the most useful going forward as it has ignited an interest to study the subject further.”

“Very useful as I was a novice and had no knowledge of the machines, but after attending the metal turning, I’ve learned lots of basic skills now.”

Our recommendation as it pertains to this area of the inquiry’s terms of reference is that technician recruitment and training is prioritised, particularly in a manner that ensures specialised areas of competency such as microbiology preparation, chemical handling, and radiation protection are well represented within the workforce. In addition, we recommend the development and deployment of an annual technician training event in Wales, offered without cost, in order to offer professional networking opportunities, valuable CPD, and recognition of the important role that technicians play in the education system.

C. Engagement with the following terms of reference:

CONTINUED

- ***Factors affecting retention***
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Importance of supporting primary to secondary transition

It is essential that the early years of secondary education build coherently on the foundations established in primary schools, avoiding unnecessary repetition and instead capitalising on prior knowledge. A deliberate approach to curriculum continuity will ensure that learners experience a sense of progression and challenge, supporting both engagement and achievement. Strengthening collaboration between primary and secondary practitioners, including shared professional learning opportunities, can contribute significantly to a smoother, more effective transition for learners.

This is likely to result in a reduction in the challenges faced by secondary school science educators as they pertain to both subject engagement and the pre-requisite knowledge required by their learners. As educators strive to support their students in achieving successful outcomes, efforts to build learners' confidence and capabilities also enhance teachers' professional fulfilment, empowering them to extend and deepen the educational challenge they provide.

“It was beneficial learning about how we can further improve our transition between Primary and Secondary. The workshops were engaging easily applicable to the Primary classroom! As always with SSERC, I feel enthused and confident [...].”

Our recommendation as it pertains to this area of the inquiry's terms of reference is that implementing projects designed to support students as their science education transitions between primary and secondary settings can improve that experience for both students and teachers. SSERC has actively engaged with transition project development and support for many years and would welcome the opportunity to advise or support similar work in Wales.

Plurality of educational background among biology teachers

Biology encompasses a very diverse and eclectic array of fields such as molecular genetics, zoology, ecology, biomedical science, marine biology, microbiology and human physiology. As a result, the educational backgrounds of those entering the biology teaching profession reflect this diversity, simultaneously creating both the opportunity for the delivery of a varied curriculum coupled with the need to ensure appropriate training opportunities to ensure that the practical laboratory skillsets required for qualification delivery are present within the workforce.

In the 2022-2023 academic year, SSERC delivered 1114 hours of biology-themed CPD, demonstrating significant willingness within the workforce to engage with laboratory focused professional development [1]. The provision of a health and safety advisory service, to ensure that support teachers and technicians have access to guidance in delivering practical activities safely and in accordance with applicable law, has proven to be an important way of supporting the teaching profession in Scotland. This warrants consideration when reviewing factors influencing teacher confidence, professional satisfaction, and subsequent retention. In the 2023-2024 academic year, SSERC received approximately 2000 queries from teachers and technicians via this service [2].

Our recommendation as it pertains to this area of the inquiry's terms of reference is that diversity of education background within the biology teaching profession is recognised and that training is made available to ensure that training in any practical laboratory skills that educators may not have been exposed to during their degree programmes are subsequently provided to enhance professional confidence and satisfaction.

C. Engagement with the following terms of reference:

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Coordinated practical skills training for teachers during initial teacher education studies

In developing a strategy for teacher education and constructing of initial teacher programmes with higher education partners, sufficient opportunities should be made available to engage with practical scientific education. Without exposure to hands-on laboratory experience during their training, new teachers may feel ill-equipped to manage practical lessons safely and effectively, potentially limiting pupils' access to the full breadth of the science curriculum and reducing professional satisfaction within the education workforce.

Embedding structured, well-supported practical training within ITT programmes provides both an opportunity to recognise and reconcile the different practical activities that trainee teachers have experienced across their differing undergraduate degree pathways. Such a programme creates an initial contact between a trainee teacher and professional development organisation such as SSERC and, as such, both creates an awareness of that organisation on the part of the teacher and commences a relationship that offers ongoing training and advice. SSERC has historically sought to build these relationships through the provision of a two-day, in-person professional workshop called the Scottish Universities Science School (SUSS).

Delivered for many years, SUSS is a well-regarded professional development initiative established in partnership between SSERC and the various Scottish teacher education institutions. It was designed for secondary science student teachers enrolled in Professional Graduate Diploma in Education (PGDE). It has attracted approximately 300 student science teachers during each of its annual iterations. Its programme consists of a range of hands-on workshops, lectures, demonstrations and discussion sessions. Regardless of their specialism, all delegates were able to experience biology, chemistry, and physics activities with the intention of supporting those educators in the delivery of general science instruction to early-secondary cohorts. SUSS has not taken place from 2023 onwards due to funding constraints but SSERC continues to work with initial teacher training providers to achieve these same goals.

Online Training and Professional Development Provision for Teachers

One potential response to prohibitive costs such as these is the use of online teacher CPD opportunities, such as the SSERC Meets programme. These virtual sessions enable teachers to engage with practical demonstrations, and in some cases are supported by physical resources (sent out to schools in advance of the video call). In mitigating the need for travel or time away from school, online training takes better account of geographical challenges and for both government bodies and training providers, considerably reduces the costs associated with training. Whilst in-person training will always be a crucial component of supporting educators, particularly in the sciences, our SSERC Meets model has shown itself to be an effective complement to that, with one session attracting as many as 790 attendees in recent years.

Our recommendation as it pertains to this area of the inquiry's terms of reference is that online training opportunities for teachers and technicians are explored as a means of providing cost-effective, widely accessible professional development as a means of improving outcomes, engagement, and professional satisfaction among educators.

[3] 'ASE Futures: Student and Probationer Teachers',
<https://www.sserc.org.uk/secure/5izbus2v/andrews-beaumont-bisset-crawford.pdf>