Sustainability

The sustainability of RAiSE has been addressed from the outset through a number of measures:

- Developments have been embedded in school and local authority plans.
- Networking and collaboration.
- PSDOs identifying others in the local system who could coordinate and sustain developments.
- Shared resource platforms.
- Highlighting and coordinating existing activity.
- Cross-curricular integration of STEM.
- The articulation of STEM with other strategies and drivers, including literacy and numeracy, the National Improvement Framework, Scottish Attainment Challenge and Developing the Young Workforce.

100
Empowered STEM leaders

Leaders of STEM learning

PSDOs have empowered motivated teachers who cascade learning within their own and other establishments.

This enhances collaboration across the authorities while upskilling practitioners with experiential professional learning. A key approach ensuring the sustainability of the programme, this 'train the trainer' approach will develop new STEM leaders each year.

Partnerships

One of the key characteristics of the pilot has been the extent to which local, regional and national networks have been developed to facilitate collaborative partnerships, contributing to the mobilisation of knowledge and resources and promoting sustainability. These networks of appropriately-skilled and motivated practitioners, organisations and businesses have added value to local systems.

"There's an enthusiasm in the local authorities for looking seriously at the longevity in RAiSE in a way that I've not really seen before in other initiatives.

"They are recognising this has had major bonuses."

Scottish Government Strategic Lead

RAiSE local authorities have committed to, or are investigating routes to, continue STEM lead role **100%**

For the full evaluation and associated privacy policy, visit:

www.thewoodfoundation.org.uk/developing-young-people-in-scotland/raise

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Trustees of The Wood Foundation: Sir Ian Wood (Executive Chairman), Lady Helen Wood, Garreth Wood and Graham Good

RAiSE

Raising Aspirations in Science Education

External evaluation

Spring 2019

8 Local authorities

+

12 Primary Science Development Officers

+

600 Professional learning opportunities

+

6500 Practitioner engagements

=

More **confident** practitioners
More **aspirational** pupils

Evaluation by:

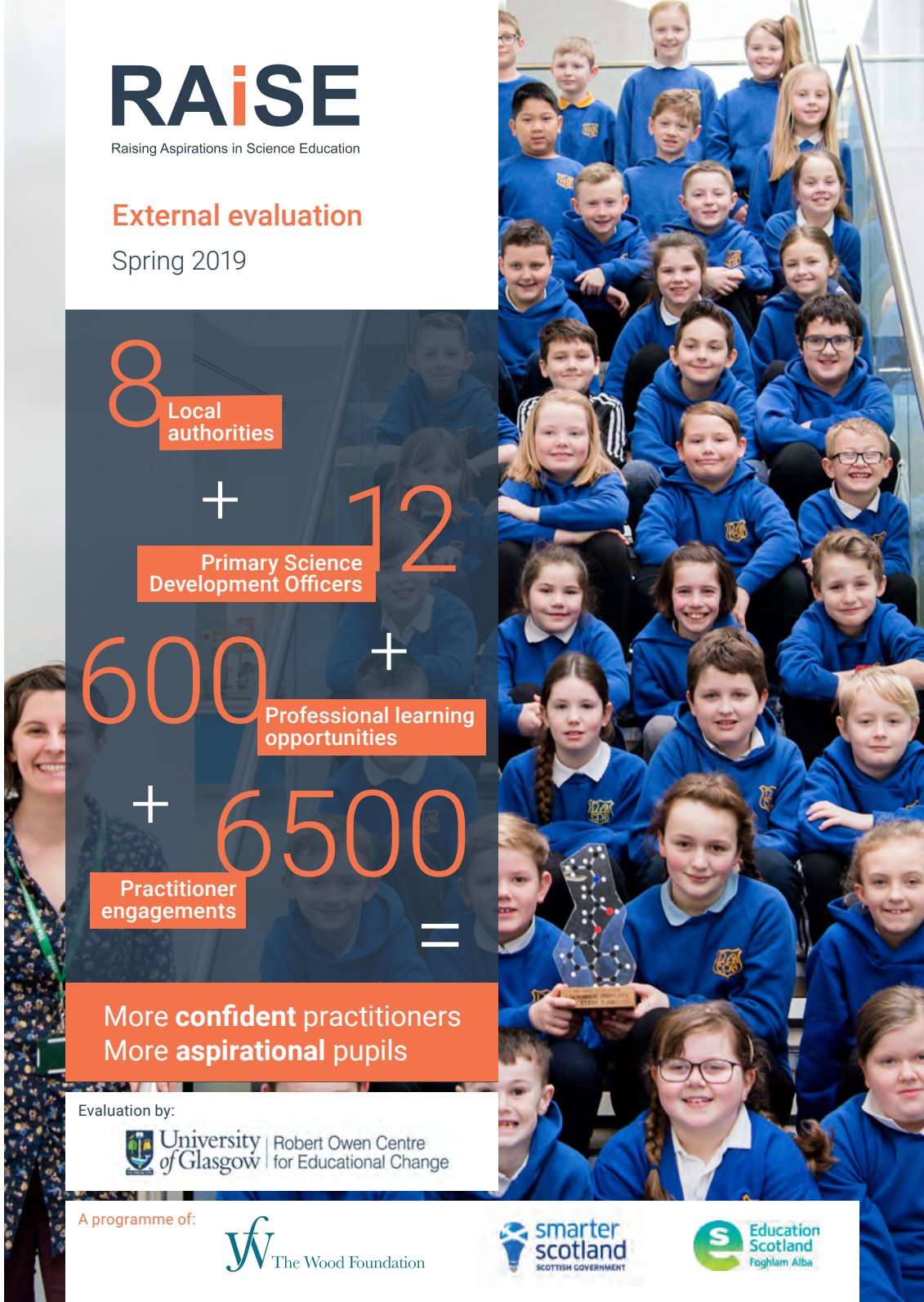
University of Glasgow | Robert Owen Centre for Educational Change

A programme of:

The Wood Foundation

smarter scotland SCOTTISH GOVERNMENT

Education Scotland Foghlam Alba



RAiSE is a four-year pilot programme delivered through a partnership of Education Scotland, The Wood Foundation, Scottish Government and participating local authorities to increase the confidence and skills of teachers to develop motivating, engaging and inspiring science, technology, engineering and maths (STEM) learning opportunities for primary pupils.

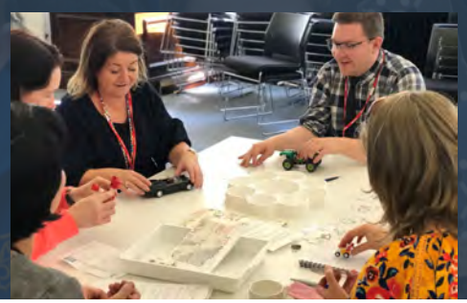
This external evaluation by the Robert Owen Centre at the University of Glasgow focusses on the eight local authorities involved in the initial pilot phase.

Primary Science Development Officer (PSDO)

PSDOs are deployed within local authorities to develop and deliver tailored professional learning opportunities for primary teachers. They foster relationships with key community and industry partners and create sustainable, STEM-focussed networks online and across teaching communities.

National Education Officer (NEO)

The NEO, who is employed by The Wood Foundation and based within Education Scotland through a collaborative worker agreement, provides coordination and strategic support for the team of PSDOs nationally while working alongside stakeholders to develop and embed the programme.



Flexibility of the RAiSE model

One of the most prominent findings of the report is the extent to which the model has been adapted through collaboration with local authorities to reflect local context, conditions and priorities while maintaining its core objectives.

Challenges including rurality and authority scale have been addressed through bespoke approaches. Programme activity has developed to reflect and align with national policies and drivers.

The ambition and motivation to deliver RAiSE with such flexibility highlights the skills of the PSDOs and NEO.

Strength of the RAiSE model

There was consensus across the interviewed professional stakeholder groups that RAiSE supported the development of a more effective and coherent professional learning system for practitioners. This has been achieved by PSDOs:

- Acting as intermediaries by mobilising knowledge, good practice and quality-assured resources and opportunities.
- Systematically assessing local teachers' needs and devising professional learning that addresses these requirements.
- Developing interdisciplinary and cooperative learning strategies.
- Extensively sharing best practice across the PSDO network.
- Building collaborative learning frameworks.

RAiSE made the strongest contribution to capacity and systems when supported by local authority leaders and integrated into local educational systems and processes.

71%

Teachers are more confident in their science pedagogy

76%

Teachers are more confident with science content

Increasing teacher confidence in STEM

One of the strongest and most consistent themes of the evaluation is that RAiSE has increased practitioners' skills and confidence regarding the teaching of STEM education. The role of the PSDO in building capacity has gathered momentum as the pilot developed.

Through engagement with RAiSE, teachers have reported they have heightened the profile of STEM across their school community; increased their personal STEM pedagogy, as well as that of their peers; and developed leadership skills.

"It really has transformed my own knowledge, understanding and teaching. I feel much more confident in my science pedagogy and better able to not only meet learners' needs but also provide progressive and enjoyable science experiences for them."

Teacher, Glasgow

"The level of training offered was very high quality and the continuing support has been hugely beneficial to us. The teaching of STEM subjects in our schools has been totally transformed and there is a real buzz in the classrooms when it comes to STEM."

Headteacher, Glasgow

Increasing pupil engagement in STEM

Practitioners' increased confidence and skills have resulted in improved pupil engagement with STEM and associated reasoning skills and vocabulary. The RAiSE activity was reported to promote learners' STEM-related aspirations and career awareness.

Professional learning has supported STEM activity which excites learners, increases the engagement of girls and contextualises STEM learning. Pupils believed STEM should be taught in primary schools and that anyone can have a job in science.

"I think RAiSE has given the kids aspirations. They realise there's a job for the things that they are interested in."

Teacher, Angus

"We learn from STEM activities. It gives us an opportunity for when we're in academy or want to do jobs involving science. Anyone can do a job in science if they learn and know in school."

Pupil, Dumfries and Galloway

A number of successful initiatives have been spearheaded by PSDOs to develop STEM within wider school communities. STEM has been used as part of schools' parental and community engagement strategies and has been successful in sustaining engagement with target groups. Events such as community fairs are delivered with partners to increase community collaboration and attract interest.

87%

Teachers said RAiSE gave learners increased opportunity to experience challenge in their learning

77%

Teachers said pupils' STEM career aspirations have increased