Inclusion in Schools

Importance of Inclusive Education

ASE
ASSOCIATION FOR
SCIENCE EDUCATION

Equity, Diversity and Inclusion (EDI) are essential components for a healthy school culture. Engagement with EDI helps to create a welcoming and supportive environment in which every young person and staff member can thrive. A lack of an inclusive culture in schools adversely affects students' engagement with learning and their ability to pursue fulfilling future education and careers.

"All schools need to see inclusion as a priority because their students will be the ones making the decision in the future, in our communities making sure that everyone is included, and ensuring that difference is celebrated."
Deputy Head Teacher, Inclusion in Schools programme

We have defined an **inclusive culture** as a place where students:

- ☑ feel welcome and safe to be themselves
- ☑ engage and feel able to participate positively in lessons
- ☑ recognise themselves in examples and role models referred to in lessons
- ☑ see diversity across the school environment and curriculum
- ☑ participate in extra-curricular and enrichment opportunities
- ☑ have their opinions heard and know they will be listened to and valued
- ☑ feel empowered to make informed decisions about their futures
- ☑ celebrate difference
- ☑ are prepared to be part of a diverse workforce

Inclusive Culture in Schools to Diversify Science

The lack of diversity in STEM sectors in the UK, including lack of women, certain ethnic minorities, LGBTQ+ people, Disabled people and those from disadvantaged socioeconomic backgrounds, is well documented [1]. This trend can be seen in student demographics in post-16 science routes where some groups of students are underrepresented in comparison to the UK population,. This then has an impact on the diversity of those we see taking STEM routes post-secondary education.

Science is often perceived as a subject for the 'clever few' and for those who are 'brainy'[2]. These characteristics are frequently linked with white, middle-class men. This highlights the importance of considering social inequalities and biases when looking to challenge stereotypes in science education.

Less than 5% Black Caribbean students progress from GCSE to A level sciences and are amongst the least likely to [3]

Disadvantaged students are less likely to take triple science than their peers. In addition, they perform less well at science GCSEs in both the triple and combined routes [3]

Girls make up 43.4% of those who take core STEM A levels, but only 23% of those who take A level physics [4]

"Restricted opportunity and diversity limits not only UK competitiveness and prosperity but also vitality in the wider scientific workforce and creative society."

Professor Dame Julia Higgins, Chair of the Royal Society's steering group on Diversity
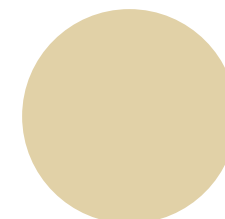
[1] https://www.britishscienceassociation.org/equity-in-stem-workforce
[2] https://kclpure.kcl.ac.uk/ws/portalfiles/portal/64130521/ASPIRES_Report_2013.pdf
[3] Based on 2019 data. https://www.stem.org.uk/sites/default/files/pages/downloads/Science%20Education%20in%20England_%20Gender%2C%20Disadvantage%20and%20Ethnicity.pdf
[4] Based on 2023 data. https://www.wisecampaign.org.uk/a-level-results-show-a-significant-change-needed/

Whole-school approach

Gender differences are seen in all subject choices, not just STEM subjects, showing that stereotypes and biases need to be addressed at a whole school level.
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Previous work at the Institute of Physics through the Improving Gender Balance programme highlighted the importance of tackling gender imbalance in physics using a whole-school approach.

Source: DfE A-level Results & Entry Data
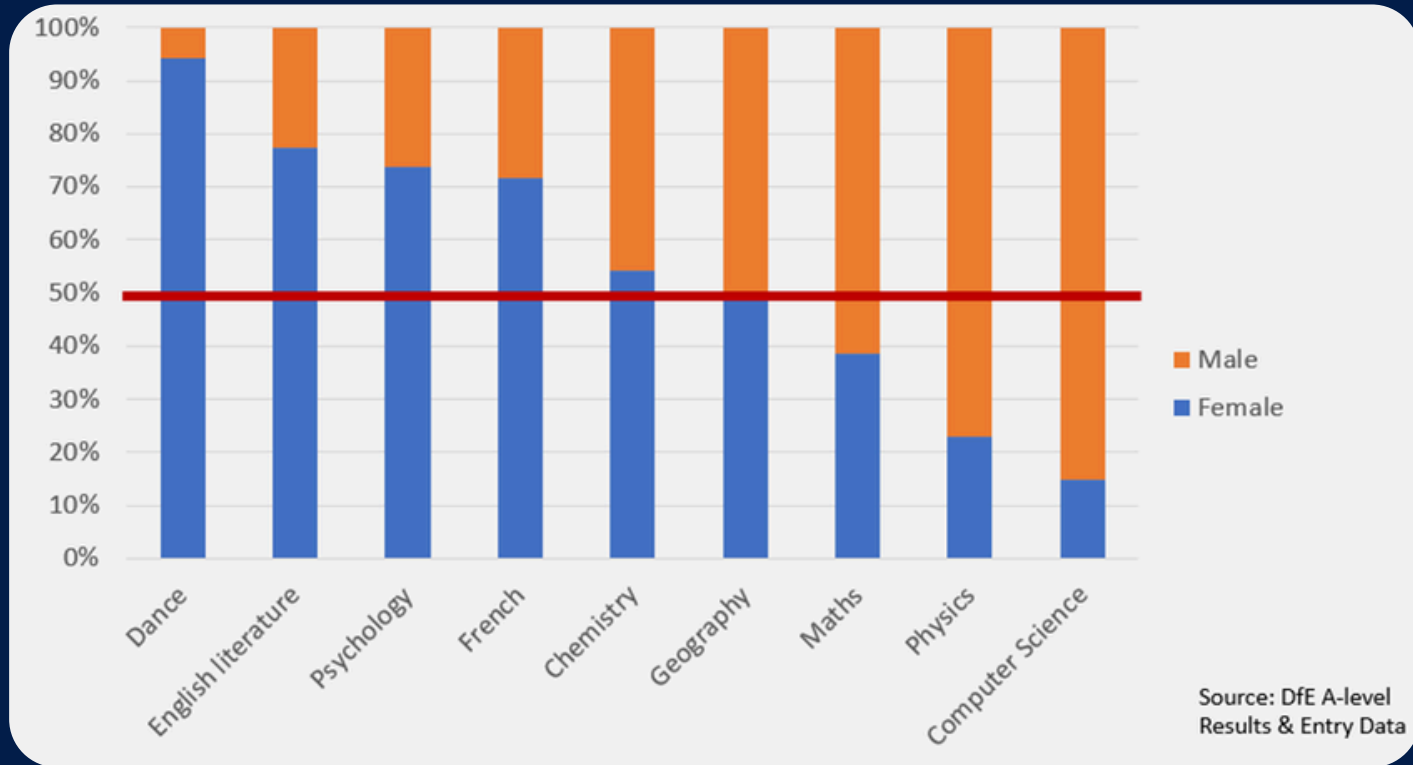
Previous work by the Institute of Physics Improving Gender Balance programme highlighted the importance of:

☑ school leaders to engage the whole school with inclusion work

☑ providing bespoke support based on individual schools need

Providing young people with a sense of belonging in science through an inclusive school culture is vital, so every student sees their future could be in science. To achieve this, it is crucial for schools to implement this through a whole-school approach.

A whole school approach ensures that inclusion is tackled at every level of the school. This approach is an effective strategy for implementing long-term changes in schools [5].

[5] https://www.futureswithoutviolence.org/the-whole-school-approach/
[6] 2023 A level entry data. https://www.jcq.org.uk/wp-content/uploads/2023/08/A-level-outcomes-for-18-year-olds-in-England-Summer-2023.pdf

Inclusion in Schools Programme (2021-2023)

The Inclusion in Schools programme was funded by the Department for Education and run by the Association for Science Education (ASE) Equity in Science team. This programme ran from 2021 to 2023 and involved working with nearly 200 state-funded secondary schools in England. The ASE's impressive range of expertise, in science education and Equity, Diversity and Inclusion ensured they could support schools' varied contexts.

The ASE has an international reputation and seeks to make a positive and influential difference to the teaching and learning of science throughout the UK and further afield. One way in which we make this positive difference is through our inclusive education programmes.

Geographic spread of our schools

The overall aim of the Inclusion in Schools programme was to increase participation from underrepresented groups progressing to A-Levels, particularly in science. The programme was delivered through a combination of:

- ✓ **consultant-led support**
- ✓ **expert-led CPD**
- ✓ **network meetings**
- ✓ **resources**

> *Young people are exposed to different attitudes, opinions and advice. What they are told and how they are treated can either open up worlds to them or serve to limit their aspirations for the future and their choice of what to study.*
> *IOP LimitLess report 2020*

How did the Inclusion in Schools Programme work?

Each school had a dedicated consultant working with school leadership to develop an action plan informed by the school's data. The consultants met their schools on a regular basis to assess progress, review the action plan and provide any additional support. Our programme's bespoke approach allowed flexibility to work with the schools' individual context and agility to respond to changing circumstances.

To help schools identify initial areas of focus, we developed a framework with the following areas:

Teaching & Learning

The curriculum challenges stereotypes and provides diverse perspectives broadening students understanding of the world.

Embed a culture of inclusion across the school by allocating staff training time and ensuring inclusion is included in school policies and improvement plans.

Leadership

Future Pathways

Students awareness around career choices and pathways are increased as careers is a focus throughout their school journey.

All students and staff have increased awareness of the different cultures increasing their understanding of people they meet from different backgrounds.

School Environment

What Inclusion in Schools looked like in schools:

Awareness events

When a school is focused on inclusion, one-off events can lead to significant changes, but to be effective it must be part of a bigger plan to raise awareness across the school. Some events will work well in one school but not in another; there is a delicate balance and nuance to the approach that is needed.

> *The school listen to us and find ways to help us if we don't feel comfortable. Inclusion and diversity means to me everyone is included and it's equal for everyone. No one is judged.*
>
> Student, Inclusion in Schools Programme

Chase High School worked to build trust and respect with students and the local community, which gave student the confidence to ask for a culture day celebration.

Organised by students (with staff support), they shared parts of their culture, such as dress, dances and songs alongside talks on different countries.

This was highly successful because it took place on a strong inclusive foundation, allowing a true celebration of all the students' lives.

Students and teachers celebrating International Hijab Day at Mortimer Community College

At Mortimer Community College, Muslim students invited everyone to wear Hijab for a day to recognise 'International Hijab Day'.

This gave time and space for students to talk about this aspect of their religion, and others the opportunity to ask questions.

This reflected the positive relationship the school had built with their Muslim community, which, through discussion, resulted in changes to their uniform policy.

What Inclusion in Schools looked like in schools:
Training, Supporting and Listening to Staff

"This training has been integral. It has ensured that staff are more mindful around their language choices. It has also underpinned curriculum evaluation work. We have ensured that all subjects include a diverse range of texts and speak around a range of career opportunities.
Teacher, Inclusion in Schools Programme

Hodge Hill School invested in EDI training for their senior leadership team and then cascaded this to all school staff at a training day.

They ran workshops on how EDI could be embedded across the school by actions such as auditing displays and books.

This led to a change in how they deliver reading to Key Stage 3 by diversifying the texts on offer.

Arnewood School wanted to ensure students were confident about homophobic, biphobic and transphobic language not being tolerated in school.

Initially, they used a staff survey to check confidence and then held a staff training day on identifying discriminatory language, understanding the impact on students, and providing guidance on the school reporting system.

The student LGBTQ+ group fed into this training by providing a 'dos and don'ts' list, ensuring this training was relevant to their needs.

Reporting of incidents significantly improved following this intervention, building confidence that discrimination would not be tolerated in the school.

What Inclusion in Schools looked like in schools:
Future Pathways

Careers provision was drawn on to broaden and raise aspirations by challenging stereotypes, increasing awareness, and showing students clear pathways into a range of careers.

'Girls in Physics: The Carbon Researcher's club at St Bernard Catholic High School

St Bernards Catholic High School strengthened existing links with local industry to raise aspirations of all students, especially girls who felt 'physics was for men who are good at maths' (a common stereotype).

To address this, members of the lunchtime club 'Girls in Physics: The Carbon Researchers' calculated the school's carbon footprint and researched suitable ways to reduce it.

This focused, local project developed their scientific skills, as well as building confidence as they went onto bid for funding, worked with professional organisations, and presented their work at a conference.

In Black History Month, Black professionals from the local community were invited into Bedford Academy to talk about their careers and provide a chance for young people to see people like themselves in careers they might not previously have considered.

Local relatable role models are powerful for students to see what is possible for their futures.

> **We want to raise the aspirations of our children moving forward: see the opportunities out there. This way the kids have something to aim for, no barriers**
>
> *Chair of Governor, Inclusion in Schools Programme*

What Inclusion in Schools looked like in schools:

Curriculum

Reflecting on the diversity of a curriculum is important to remove bias, which could otherwise alienate some students, increase representation and challenge stereotypes. This helps reduce alienation and increases students' sense of belonging.

What are receptors?

Touch Smell Sound

Sight Taste

Diversifying the curriculum may mean looking at examples of role models, perspectives that are shared, language that is used, or images.

At Colton Hills Community School, one of their efforts to diversify the curriculum involved changing biological diagrams after recognising many scientific and medical images only included white people.

Meaningful curriculum changes require time and training, which Mortimer Community College committed to.

They first held a CPD session for all staff on diversifying the curriculum during which time was allocated to identify areas of focus that were appropriate to each department.

Importantly, this was followed up with additional time allocated for staff to make these changes.

> *To be an inclusive school we need to change habits; raising people's awareness is the most important thing. We've worked very hard to ensure the curriculum is more diverse, to promote careers and ensure that students know that everyone is capable.*
>
> *The best message we can send is that they can be anything they want to be.*
>
> Deputy Head Teacher, Inclusion in Schools Programme

What Inclusion in Schools looked like in schools:
Student Involvement

Listening to students is essential to identify where support might be needed. Involving them in the changes gives them a sense of belonging within the school.

Students are the largest population within the school, so their involvement is essential for meaningful change and ensuring impact.

> *We're trying to get as many people to explore everything about themselves and not fit themselves into a stereotype, stereotypes can be so limiting and we want to expand horizons across the school, it's a culture and one of the reasons I love working here."*
> *Teacher, Inclusion in Schools Programme*

As a way of teaching students about stereotypes and diversity and giving them ownership in their school, Catshill Middle School invited students to audit the display boards around the school, identifying where changes needed to be made to reflect the school's inclusive values.

The students, empowered to be part of the change, extended their work to the local community, investigating ways to make their local skate park more welcoming to all children.

Oakwood Academy started regular 'Let's Talk' student sessions, where they created a safe space for students to discuss, learn about, and share their opinions around issues that were important to them.

The first of these sessions was around the influence of Andrew Tate: the session was so popular, there wasn't space for all the students to attend. This powerfully demonstrated shutting down the conversation isn't the answer; instead, students need to be part of the conversation.

> *This school is about including people from the community, including people from different backgrounds. The school is teaching us to be proud of who we are.*
> *Student, Inclusion in Schools Programme*

What Inclusion in Schools looked like in schools:
Displays

Auditing displays and making changes to ensure they show diversity and don't reinforce stereotypes is an important starting point for many schools.

Displays around the school should be informative, thought-provoking and inspiring – to all students. That means they need to be considered from every student's perspective. Who the school chooses to celebrate on their displays impacts every student to feel welcomed, seen and valued.

The PE department of William de Ferrers School designed display boards to show a range of gender, ethnicity and disability of successful world class athletes and sports stars. Some of those sports stars extends students understanding of who successful athletes are, such as Eddie Edwards (Eddie the Eagle), who is a good example of someone who continues to strive towards a goal against all expectations.
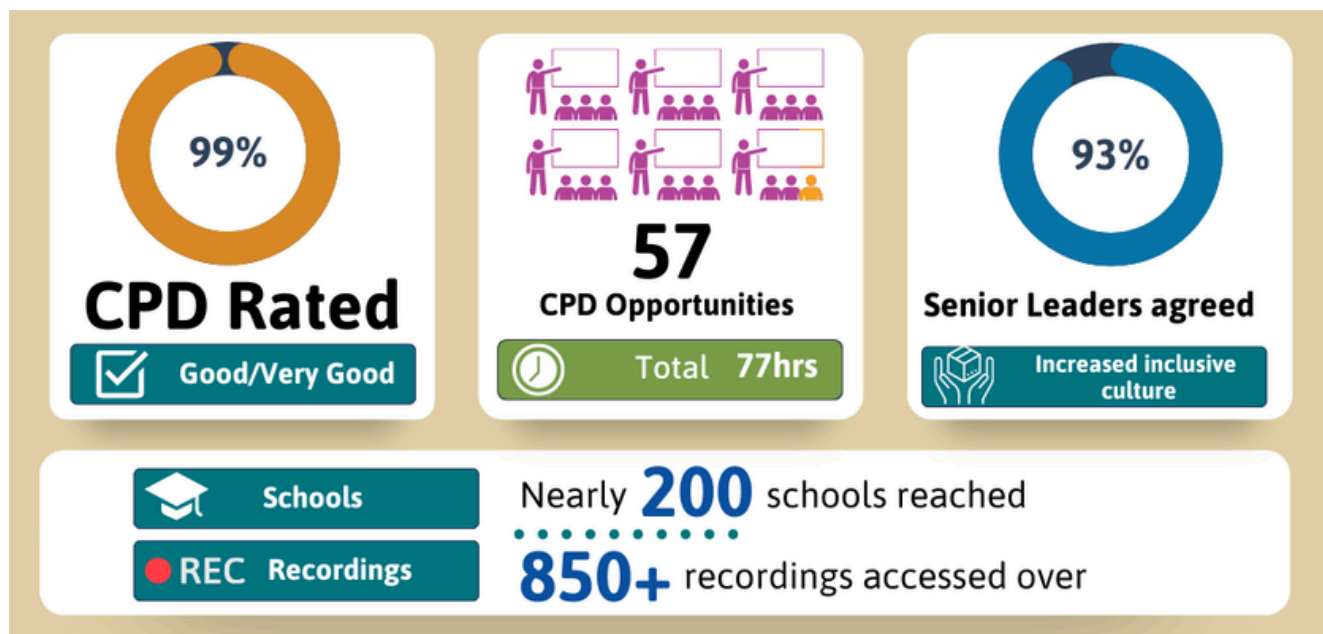
To develop the use of display boards, some schools used them to complement the work they were doing to broaden students' understanding of subjects and how they link together. For example, Mortimer Community College used displays in their maths classrooms to show the links to other subjects like geography, science, art and MFL.

Key takeaways

Based on the different approaches taken by our schools, alongside the findings from an external evaluation of the programme, here are the core key principles identified by our exertnal evaluators, that lead to effective change in our schools:

99% CPD Rated — ☑ Good/Very Good

57 CPD Opportunities — ⏱ Total 77hrs

93% Senior Leaders agreed — Increased inclusive culture

🎓 Schools
🔴 REC Recordings
Nearly **200** schools reached
850+ recordings accessed over

- 1-1 consultation support was the element of the programme that had the most impact.

- School leadership is needed to create a culture of inclusion

- Schools need to set goals that are flexible and have adequate time to implement changes

- All schools made positive change, particularly on leadership and the school environment

- It's important for the whole school to be able to contribute towards inclusion and having a staff lead for inclusion can help make it a priority and coordinate ongoing work

Inclusion is seen as high priority by the principal, SLT and down into the school. It is something they will build on over time. There has been a lot of impact from the IIS project. Having someone externally to work out how to move forward, bounce ideas off and make suggestions has been invaluable.
Teacher, Inclusion in Schools Programme

1. Bespoke 1-1 support

The relationship between the consultant and the school emerged as the main advantage and most valued part of the programme.

Schools were very positive about the quality of support and appreciated the expertise the team could offer through our consultants.

More than half of the schools that participated in the external evaluations said that they would not have achieved what they had achieved without it. It was also found that a third of responders were able to make more and faster progress towards their inclusion goals when compared to not taken part in the programme.

A large part of this is down to consultants helping schools to assess the their existing work on inclusion. From this, they were able to clearly identify next steps forward that specifically met the school's needs, plus identifying resources and CPD to support them with this.
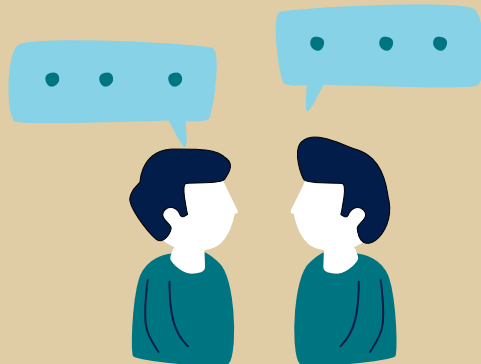
2. School leadership is needed to create a culture of inclusion across the school

Engaging senior leadership from the start of the process helped consultants gain an overview of what the needs were for their school for developing their action plan. Having buy in from senior leadership also meant that changes at all levels could be implemented and the programme was more likely to engage staff from across the school.

Our external evaluation found that, by the end of the programme, more staff were aware of the school's inclusion policy and that more staff agreed that their school communicates its vision for inclusion clearly, in comparison to the baseline survey.

Having this vision clearly communicated through leadership is crucial to this awareness and for inclusion to be embedded consistently through the school and be part of the school's ethos

> *I completed the unconscious bias training and have been trying to then roll that out across my department and then the school and [my consultant has] supplied me with a much-shortened version that I can then use with them.*
> *Head of Science, Inclusion in Schools Programme*

3. Time and flexibility

Staff need dedicated time for CPD focused on inclusion, such as diversifying the curriculum, as well as time to embed in the learning, such as reviewing and developing their curriculum.

Where schools reported that time was a barrier, we developed action plans that took this into account and applied an inclusive lens to existing priorities.

Our relationship with schools allowed flexibility to respond to changing school priorities.

In addition, the consultants would help schools to consider what inclusion looks like in the long term, planning beyond their action plan that just looked at the next academic year.

4. Measuring Impact

We found that schools particularly progressed with leadership and school environment focus areas as these areas require less long-term planning and afford schools some quick wins.

Our evaluation found that by the end of the programme, 51% of schools have delivered CPD on unconscious bias and/or inclusive teaching

- 30% of schools report that inclusive practice is being monitored on learning walks and lesson observations
- 44% of schools are diversifying the curriculum
- 40% of schools are making diversifying the curriculum a priority next academic year
- 51% of schools have reported that staff see the Inclusion in Schools programme as a positive contribution to the community of the school

Because of the unconscious bias training, we've had some really good conversations between staff, where staff had certain preconceived ideas. But they kind of took a step back and went 'Oh, maybe I could tweak my displays to make them a little bit more open for other people.'
Teacher, Inclusion in Schools Programme

5. EDI leadership

Having a lead for EDI initiatives in schools can help coordinate their inclusion work. However, it is important for all staff to be able to participate actively in this work and to have a voice in order to maximise engagement and impact. Schools either approached this with an EDI lead and/or an EDI staff group.

Our evaluation found that 9% of schools created a new SLT Equality, Diversity, and Inclusion post and 11% of schools have a governor with responsibility for EDI.

Summary

Schools have been able to achieve sustained change where equity, diversity and inclusion take higher priority, leading to a more inclusive culture. The bespoke approach of the programme meant schools achieved this in many different ways, meeting the different needs of their staff and students.

With competing priorities, it can be challenging to give the time needed to embed EDI across schools. We addressed this with 1-1 support, so we could work alongside exiting initiatives: teachers found this the most valuable part of the programme.

A fifth of schools demonstrated their commitment to improving inclusion by joining our 6-month Inclusion in Science CPD programme. Work on creating inclusive cultures is ongoing, and the progress made by all schools on this programme is only the start, but essential to improve all student outcomes.

"We're not going to solve it in a year, it's a long-term process, a culture shift, not just a series of activities"
Teacher, Inclusion in Schools Programme