ESB SCIENCE BLAST DELIVERED BY THE RDS

Executive Summary Inclusion evaluation of ESB Science Blast

Maynooth University National University of Ireland Maynooth

RDS

Taighde Éireann Research Ireland

Key Findings

A mixed methods evaluation of inclusion across the ESB Science Blast 2026 Dublin event, capturing the experiences of over 2,000 participants from six stakeholder groups.

2,000+ Stakeholders Engaged
Surveys, interviews, observations, and interactive methods

1,345+ Students Consulted
Voices captured through surveys and interactive methods

6 Stakeholder Groups
Students, Teachers, SNAs, Performers/Exhibitors, Judges, Facilitators

High Overall Inclusion Experience
Strong experiences, clear enablers, and opportunities for improvement

Overall Inclusion Scores

(% agreeing or strongly agreeing that they had an inclusive and positive experience at ESB Science Blast.)

Students	88%
Teachers	88%
SNAs	85%
Performers/Exhibitors	86%
Judges	85%
Facilitators	87%
Overall Inclusion Score	**86%**

What Works Well?

- Welcoming, friendly, and supportive environment across the event (Students, Teachers, SNAs)
- Clear communication from event staff and volunteers (Multiple Groups)
- Accessible facilities and inclusive design features (Teachers, SNAs, Facilitators)
- Engaging, interactive, and inspiring stage shows and activities (Students)
- Opportunities for curiosity, creativity, and STEM learning (Students, Teachers)

Key Themes Shaping Inclusion

Additional Needs Inclusion
82% of Teachers & SNAs agree students with additional needs feel included and supported. Positive experience contributes to strengthening connections and supports.

Accessible Event Environment
84% of stakeholders agree the event environment was accessible and well organised. Quiet and sensory spaces, signage, layout, and accessibility were highly valued.

The Human Side of Inclusion
88% of stakeholders agree staff and volunteers were friendly, approachable and helpful. Relationships, respect, and empathy created a strong sense of belonging.

Foreword

In recent years, there has been increasing recognition of the importance of ensuring that all children have equitable access to high quality STEM education. As Ireland continues to invest in developing future skills, creativity and innovation, initiatives such as ESB Science Blast play a central role in engaging young learners with science in meaningful and accessible ways. At the same time, there is a growing expectation that educational programmes move beyond broad participation and demonstrate how inclusion is realised in practice across diverse learner groups. ESB Science Blast represents a significant national investment in informal STEM learning. As a free, non-competitive and inquiry-based programme, it offers primary school students across Ireland the opportunity to explore scientific questions, collaborate as a class and present their work within a large-scale public event. Since its inception, the programme has engaged tens of thousands of children and has become a prominent feature of the Irish STEM education landscape.

However, large-scale, high-energy learning environments also can prove challenging for participation and support for students and stakeholders with additional needs. It is clear from past evaluations that extensive measures have been taken to ensure that ESB Science Blast is inclusive, however the extent to which all children and other stakeholders are able to engage meaningfully depends on a complex interaction between environment, communication, support structures and individual needs. This is particularly relevant in the Irish context, where students participate from a range of educational settings including mainstream classrooms, special classes and special schools, each with differing supports and requirements.

This evaluation, led by the IRESI Research Centre, School of Business, Maynooth University, was commissioned to examine inclusion at the ESB Science Blast Dublin 2026 event. Drawing on data from over 2,000 participants across multiple stakeholder groups, the study provides a comprehensive analysis of how inclusion is experienced within the event. It builds on previous programme evaluation

and accessibility work, while extending the focus to consider inclusion as a multi-dimensional and lived experience. The study adopts a mixed methods approach, integrating quantitative survey data with qualitative insights from observations, conversations and interactive evaluation methods. This enables a detailed understanding of participation levels, and how students, teachers and other stakeholders experience the event environment in practice. The evaluation is grounded in a strong conceptual framework, drawing on Universal Design for Learning, the Social Model of Disability, inclusive pedagogy and the Capability Approach. These perspectives support the concept of understanding inclusion as meaningful participation, where all students are supported to engage, contribute and experience a sense of belonging.

The findings presented in this report offer valuable insights for the continued development of ESB Science Blast and for the wider field of informal STEM education. They highlight both the strengths of the programme and the areas where further development can support more consistent and equitable participation across all learner groups. Inclusion is central to national education policy and practice and this evaluation contributes important evidence to support ongoing improvement. It reinforces the need for design, effective communication and strong stakeholder support in ensuring that all children and staff/volunteers can participate fully in ESB Science Blast and similar initiatives.



Research Team

The evaluation was conducted by researchers from the IRESI Research Centre, School of Business, Maynooth University. The interdisciplinary research team brings together expertise in primary STEM education, equality, diversity and inclusion (EDI), universal design learning (UDL), mixed-methods research, stakeholder engagement and data analytics.

The team has extensive experience leading and evaluating large-scale educational and societal impact projects involving schools, communities, industry, policymakers, and civil society stakeholders. Their work focuses on developing inclusive and evidence-informed approaches to STEM engagement, educational participation, and community-based innovation.

Acknowledgements

The research team would like to acknowledge the invaluable contribution of all stakeholders who participated in this study, including students, teachers, judges, facilitators, performers/exhibitors, and members of the wider RDS ESB Science Blast community. Special thanks are extended to the RDS team for their ongoing support, collaboration, and commitment to fostering inclusive STEM engagement. The team also gratefully acknowledges Research Ireland for supporting this research. Appreciation is further extended to colleagues and educational stakeholders whose insights and expertise contributed to the development and delivery of the study.



Executive Summary

This report presents the findings of the Inclusion Evaluation conducted at ESB Science Blast 2026. The evaluation was undertaken by the IRESI Research Centre, School of Business, Maynooth University, and explored how inclusion was experienced across the event by students, teachers, judges, facilitators, performers, exhibitors and wider stakeholders. The evaluation examined inclusion in relation to access, participation, communication, confidence, engagement, wellbeing and overall experience within a large-scale informal STEM learning environment. Informal STEM initiatives are often recognised as important spaces for engagement and participation across Ireland and internationally but limited large-scale research examining how inclusion is experienced in practice within these environments has been carried out, particularly within the Irish primary education context. This evaluation therefore provides evidence regarding inclusive participation within one of Ireland's largest STEM education initiatives and offers insight into how inclusive practices can be embedded across large public engagement events.

ESB Science Blast engages over 17, 000 primary school students annually through a whole-class inquiry-based STEM model that prioritises curiosity, creativity, collaboration and participation. Since its launch in 2019, over 110,000 students have taken part in ESB Science Blast. The programme includes students from a wide range of educational settings, including mainstream classes, special classes and special schools. Against this backdrop, the evaluation explored how effectively the event environment supported meaningful participation for diverse learner groups and stakeholders involved in the programme. The evaluation adopted a mixed-methods approach, integrating quantitative survey findings with qualitative insights gathered through observations, interviews, conversation data and interactive feedback activities. Data were collected from over 2,000 participant interactions during the event, including:

- **1,345** student-related interactions and responses
- **6** stakeholder groups
- **650** Surveys
- **1,500** post-it note responses,
- **350** structured observational records,
- **100** interview and conversational reflections,
- **+** interactive methods (graphics, digital visual interface & emoji marble jars) and additional qualitative field notes collected by a team of 15 researchers.

The evaluation drew on established inclusion and education frameworks, including Universal Design for Learning (UDL), Inclusive Pedagogy and the Social Model of Disability, to examine how accessibility, participation and support were experienced across the event environment. Across all stakeholder groups, findings were overwhelmingly positive. Students, teachers, judges, facilitators, performers and exhibitors consistently described ESB Science Blast as welcoming, engaging, accessible and supportive. The findings indicate that inclusive practices are already strongly embedded throughout the event environment and are experienced positively not only by students, but also by wider stakeholder groups participating in the event.

Current Inclusion Supports Provided by ESB Science Blast

In recent years, ESB Science Blast has undertaken extensive work to strengthen accessibility, participation and inclusion across the event. Research Ireland funding enabled the appointment of a dedicated Inclusion Officer for a two-year period. The purpose of this role was to strengthen participation opportunities for students with additional needs and support increased engagement from special schools and special classes participating in the programme.

Working in collaboration with the RDS team, schools and external accessibility specialists, the Inclusion Officer coordinated the implementation of recommendations arising from the Tilting the Lens Inclusion and Accessibility Audit (2025) and previous ESB Science Blast evaluations. This work resulted in significant enhancements across multiple aspects of the event, including accessibility, navigation, sensory supports, communication, judging, event preparation and participation supports.

Venue accessibility and navigation were strengthened through improvements to signage, maps, visual communication supports and a multi-modal wayfinding system incorporating colour-coding, pictograms and accessible signage. Sensory supports were expanded through the introduction and enhancement of facilities including a mobile sensory room, a redesigned quiet room, an outdoor quiet space, sensory kits, noise-reduction headphones and designated quieter areas throughout the event.

Considerable attention was also given to improving preparation and predictability for students attending the event. Schools received information regarding available supports in advance of attendance, alongside venue familiarisation videos, photo maps, visual schedules, illustrated narratives and preparation materials designed to help students understand what to expect on the day. These resources were particularly beneficial for students with autism, anxiety and sensory processing differences.

Particular attention was given to increasing participation opportunities for students with additional needs and special schools. Supports included direct engagement with schools before attendance, opportunities to identify individual support requirements, early-entry arrangements, adjusted timetables where required, additional transport supports and enhanced accessibility of project stands. Venue familiarisation resources were also provided in advance to support preparation by both students and staff.

Inclusion supports were also embedded within exhibits, performances and judging activities. Exhibitors, presenters and performers received guidance on accessible and inclusive participation approaches, while judges were provided with additional supports to facilitate engagement with students who had diverse communication and learning needs. Adapted judging feedback sheets incorporating visual supports and emoji-based responses were introduced, and judges with experience of supporting students with additional needs were assigned to special school classes where appropriate.

Many of these developments were informed by Universal Design for Learning (UDL) principles and reflected a commitment to providing multiple ways for students to access information, engage with activities and participate in the event. Collectively, these enhancements represented a significant strengthening of inclusion supports across ESB Science Blast and provide important context for the positive experiences reported by students, teachers and other stakeholders throughout this evaluation.

Inclusion Evaluation Key Findings

Overall Student Experience

Student findings were exceptionally positive across all measures of inclusion and engagement. Students reported:

- **97%** inclusivity
- **96%** engagement
- **97%** confidence
- **98%** agreement that they could participate in their own way
- **98%** enjoyment in showing their project
- **100%** enjoyment of the day overall.

Students consistently reported feeling included, listened to and supported throughout the event. Many highlighted the value of teamwork, collaboration and the opportunity to present and discuss their work in a positive and encouraging environment. The findings also suggest that the inquiry-based and whole-class nature of Science Blast supports participation across a broad range of learner needs, interests and abilities.

Overall Teacher Perspectives

Teachers also reported very high levels of inclusion across the event, with an overall inclusion score of 88%. Teachers positively highlighted:

- student engagement and wellbeing,
- accessibility and venue layout,
- organisation and communication,
- collaboration and participation,
- supportive staff interactions,
- and judging experiences.

Teachers particularly valued the flexibility of the ESB Science Blast model, which enabled students to participate and contribute in different ways according to their strengths, interests and support needs. Teachers from mainstream classes, special classes and special schools all reported positive experiences regarding participation and inclusion. Areas identified for enhancement largely centred around strengthening and expanding supports that were already viewed positively. These included improving communication regarding existing inclusion supports, increasing visibility of quiet spaces and sensory supports and continuing to strengthen adaptable participation opportunities for students with additional needs.



> The staff were so kind and helpful.
>
> -Student, ESB Science Blast Dublin 2026

Overall Judge, Facilitator, Performer and Exhibitor Perspectives

Judges, facilitators, performers and exhibitors also reported highly positive experiences of inclusion throughout the event. Overall inclusion scores included:

FACILITATORS	PERFORMERS/ EXHIBITORS	JUDGES
87%	86%	85%



High levels of satisfaction were reported in relation to:

- accessibility,
- communication and preparation,
- signage and navigation,
- student participation,
- student confidence and engagement,
- and overall event organisation.

Stakeholders consistently described the event environment as welcoming, supportive and well organised. Facilitators and judges particularly highlighted the flexibility of participation across the event, noting that students could engage in ways that suited their individual communication styles and confidence levels. The findings also show that inclusion was experienced positively by wider stakeholders themselves, not solely through observing student participation. Judges, facilitators, exhibitors and performers consistently reported positive experiences in relation to communication, accessibility, support and participation within the event environment. Similar to the feedback provided by teachers, recommendations from judges, performers, facilitators and exhibitors focused largely on further strengthening the extensive inclusion supports already in place across ESB Science Blast. Suggestions included increasing awareness of available supports, continuing to embed Universal Design for Learning (UDL) approaches within exhibits and performances, improving accessibility through lower exhibition stand heights and clearer wayfinding, and providing microphones for judges where required. Additional suggestions included Irish Sign Language (ISL) interpretation and closed captioning for stage shows, more quiet spaces throughout the venue and consideration of more child-friendly trophy and award designs.

Overall Accessibility and Inclusive Supports

Accessibility and inclusive design emerged as significant strengths of the event. Participants consistently highlighted:

- spacious venue layout,
- clear signage and navigation,
- quiet spaces,
- sensory supports,
- tactile and hands-on activities,
- supportive staff,
- and flexible participation opportunities.

Key inclusion theme findings included:

- 82% of teachers and SNAs agreed students felt included and supported,
- 84% of stakeholders agreed the event environment was accessible and well organised,
- 88% of stakeholders agreed staff & volunteers were friendly, approachable and helpful.
- Quiet spaces and sensory supports were viewed particularly positively by teachers, SNAs and support staff working with students with additional needs. These supports were described as valuable in helping students regulate, remain engaged and participate meaningfully throughout the event. Participants also highlighted the positive impact of tactile exhibits, LEGO activities,
- visual supports and noise-cancelling headphones in supporting participation across diverse learner needs.

> **It was so exciting and fun!**
>
> **Everyone made us feel welcome.**
>
> - Students, ESB Science Blast Dublin 2026

Overall Human Support and Event Culture

One of the strongest findings emerging from the evaluation related to the role of people in shaping inclusive experiences. Teachers, SNAs, facilitators, judges, exhibitors, safeguarding staff and event staff were consistently described as approachable, welcoming and supportive.

Participants frequently referred to the positive atmosphere of the event and the importance of encouragement, responsiveness and interpersonal support in helping students feel comfortable and confident. The findings suggest that the inclusive culture of Science Blast plays a central role in supporting participation and wellbeing across the event environment.

Specific Findings from Special Education Teachers, Special Needs Assistants and School Staff Supporting Students with Additional Needs at the Event

Findings from 14 survey responses, 16 conversations/interviews and observational data indicate a highly positive experience of ESB Science Blast among Special Education Teachers (SETs), Special Needs Assistants (SNAs) and other staff supporting students with additional needs.

SETs, SNAs and other support staff highlighted the accessibility of the event, the welcoming atmosphere, flexibility in participation and the wide range of supports available to students with additional needs. Particular praise was given to the quiet room, mobile sensory room and wider sensory supports, which were viewed as important in enabling students to regulate and participate throughout the day. Staff also highlighted ease of movement around the venue, accessible stand locations, opportunities to avoid lengthy queues and the flexibility afforded to students to participate according to their strengths, interests and abilities.

> **...the inclusive culture of ESB Science Blast plays a central role in supporting participation and wellbeing across the event environment...**

Observations conducted during judging sessions, exhibits and stage performances reinforced these findings. Students with additional needs were observed engaging confidently with judges, participating in hands-on activities, interacting with exhibitors and taking part in stage shows and demonstrations. Judges, exhibitors and presenters were observed adapting their interactions to support a range of communication styles, abilities and support needs.

An important finding related to awareness of the supports available at the event. Several SETs, SNAs and other support staff who were accompanying students, but were not the lead coordinating teacher, indicated that they had not been aware of the full range of inclusion supports available before arriving at the venue. Responses were extremely positive once staff became aware of supports such as the quiet room, mobile sensory room, sensory kits and “skip-the-line” priority lanyards. This highlights an opportunity to strengthen communication regarding existing supports with all staff accompanying students.

The limited recommendations identified by this stakeholder group focused on reducing queues during busy periods, reviewing noise levels and duration of some stage performances, providing additional seating in selected locations and considering lower exhibition stand heights to further improve accessibility for students using wheelchairs.

Overall, triangulation of survey responses, conversations/interviews and observations presents a consistently positive picture of inclusion for students with additional needs attending ESB Science Blast.

Overall Recommendations

The areas for improvement are therefore about further enhancing the core model that is working well. The issues identified are twofold. (i) More practical and more specific: making quiet spaces easier to find, improving signage and colour contrast, strengthening stand numbering, making sensory information clearer, giving all attending adults the same accessibility information before the event, improving predictability for students, and making stage events more accessible through better management of sound, lighting, captioning and Irish Sign Language interpretation. (ii) Enhancing overall professional development provision and platforms for teachers, industry and government stakeholders to promote sharing the provision of supports, and supporting students to develop and present projects incorporating universal design learning.



Overall Conclusion

Overall, the findings position ESB Science Blast as a leading example of inclusive informal STEM education in Ireland. Across all stakeholder groups, the event was experienced as highly accessible, engaging, supportive and meaningful. The evaluation highlights the significant progress already made in creating an inclusive STEM event environment and provides strong evidence that inclusive participation is already embedded throughout the programme.

The findings also demonstrate the importance of combining accessibility supports, flexible participation opportunities, sensory supports, strong organisational systems and supportive interpersonal interactions in creating inclusive STEM engagement environments at scale. The recommendations identified within the report primarily centre around enhancing existing inclusive practices and improving communication and visibility regarding supports already available across the event.



Top Opportunities for Improvement

- Enhance sensory supports and quiet spaces
- More visibility, availability and consistency
- Improve communication of practical information
- Especially around accessibility, timing and logistics
- Strengthen inclusion for students with complex additional needs
- Tailored supports, training and planning
- Extend time for projects and enhance feedback
- More time for investigations and more consistent feedback
- Increase teacher CPD and resource supports
- To build confidence and inclusion practice

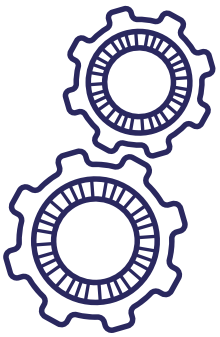


Overall Message

ESB Science Blast is creating a positive, inclusive, and inspiring experience for children and educators across Ireland. With continued focus on inclusion, we can make it even stronger for every learner.

KEY RECOMMENDATIONS

- **Strengthen communication** about existing inclusion supports before the event.
- **Increase visibility** and awareness of quiet spaces and sensory supports.
- **Expand** sensory and quiet space provision during busy periods.
- **Develop** additional visual preparation materials for schools.
- **Strengthen** signage, navigation and wayfinding supports.
- **Review** exhibit and stand height accessibility for wheelchair users and students with different mobility needs.
- **Provide** microphones for judges and students where required to support accessible communication.
- **Continue and expand** the use of Brand Ambassadors and additional support staff to assist specific schools and students with higher support needs.
- **Continue to provide** flexible participation opportunities aligned with UDL principles, enabling students to engage, communicate and present in ways that suit their individual strengths and needs.
- **Consider further opportunities** for arts integration across the event to support creativity, communication, sensory engagement and participation for students with diverse learning and communication needs.
- **Explore** opportunities to further incorporate digital skills and assistive technology supports within projects and presentations.
- **Support the sharing** of good practice case studies highlighting UDL approaches and inclusive project themes used by schools.
- **Explore** the development of a digital sharing platform where teachers, industry partners, government organisations and wider stakeholders can share resources, inclusive project ideas, case studies and examples of UDL and inclusive STEM practice across different educational settings.
- **Explore** the development of teacher professional development and micro-credential opportunities focused on inclusive STEM and arts-integrated project development.
- **Continue to strengthen** professional development and guidance relating to inclusive STEM participation and accessibility practices.

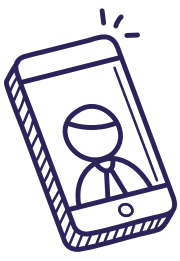














Who We Are

ESB Science Blast is Ireland's largest STEM education programme for primary schools, providing pupils with an opportunity to investigate, discover and present scientific questions in a fun, inclusive and non-competitive environment.

The programme encourages curiosity, creativity and critical thinking while supporting participation from pupils of all backgrounds and abilities.

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About This Evaluation

This report presents the findings of a mixed methods evaluation of inclusion across ESB Science Blast 2026, undertaken by researchers from Maynooth University.

The evaluation draws on observations and stakeholder feedback gathered throughout the event and highlights both existing strengths and opportunities to enhance inclusion strategies for all involved in the programme.

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