

Reframing Evaluation: Lessons from Transition Year STEM Projects in Ireland (2018–2022)

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Abstract

Transition Year (TY) is a one-year programme in the Irish secondary school system designed to support personal, social, and vocational development. It takes place in year four of a six-year cycle in secondary school after the first formal State exam. Children who are in TY are typically aged 15-16. This study presents a systematic analysis of 32 STEM-focused TY projects funded through the Discover Programme of Research Ireland (formerly Science Foundation Ireland) between 2018 and 2022. Using internal reports, externally commissioned evaluations, and mixed-methods analysis, the study explores how project teams approached impact assessment within diverse educational contexts. While surveys were commonly used (75%) and mixed-methods approaches appeared in half of all projects, external evaluation (31%) and longitudinal tracking were applied selectively, often reflecting project scope, capacity, and local considerations. The findings highlight the natural variation that emerges when flexible funding programmes support a wide range of partners, pedagogical models, and community needs. The findings also reveal that Research Ireland can encourage researchers to strengthen their evaluation capacity through cocreated, context sensitive methodologies by enhancing support for reflective and participatory practices. This work contributes to the ongoing development of a coherent, inclusive evaluation culture in Ireland's STEM education landscape.

Keywords: Transition Year, STEM Education, Evaluation practices, Longitudinal tracking, Discover programme

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Evaluation is a critical yet often underexamined component of Education and Public Engagement (EPE) in Science, Technology, Engineering and Mathematics (STEM) (Department of Education and Skills, STEM education policy statement 2017–2026, 2017; Discover Programme, Research Ireland, n.d.). This gap is particularly salient in school-based STEM engagement, where evaluation practices vary widely across programmes and remain insufficiently documented in the Irish context. Recent scholarship in Irish education further highlights a growing national appetite for more robust, transparent, and theoretically grounded evaluation practices (Gilleece & Clerkin, 2025; O'Connor, 2024). These works identify systemic challenges such as inconsistent evaluation design, limited use of mixed methods, and gaps in the integration of evaluation with programme planning. Situating the present study within this evolving policy and research landscape clarifies its motivation: to contribute evidence that strengthens Ireland's broader evaluation culture and supports evidence-informed EPE practice.

The Discover Programme (DP), administered by Research Ireland, is a core component of the national EPE funding portfolio. It supports initiatives that enhance public understanding of STEM, broaden participation among underrepresented groups, and foster inclusive, participatory engagement with research. Discover-funded projects vary widely in scale, design, and delivery, which is important context for interpreting the evaluation patterns presented later in this paper. Some projects operate at a single-school or community level, while others are large multi-school or national initiatives involving hundreds of participants. For example, national Discover-funded programmes such as the *All-Ireland STEM Passport for Inclusion* reach more than 5,350 students across multiple regions and partner institutions, illustrating the broad scope of the programme's engagement model. Projects are typically initiated by university

researchers, youth and community organisations, cultural or science institutions, or industry-academic partnerships, often in collaboration with public bodies such as the Department of Education. Participation is voluntary rather than randomly sampled, reflecting the Programme's commitment to widening access and motivating schools and communities to opt into STEM engagement activities. Project durations commonly range from one to two years, in line with Discover Programme funding guidelines.

The aims of these initiatives include broadening participation and equity of access, supporting STEM education and career pathways, increasing public engagement with STEM, promoting sustainability, and fostering co-creation with communities. Discover-funded activities take diverse forms; including hands-on workshops, maker events, school-based modules, digital learning programmes, community-based initiatives, and public engagement festivals; and therefore vary considerably in scale, complexity and delivery.

As a result, evaluation practices also differ substantially across projects. Smaller, locally organised or single-school initiatives often lack the resources or scope to commission formal external evaluations, whereas larger multischool or multiyear projects are more likely to engage independent evaluators in order to demonstrate broader impact and accountability. This variability has historically been enabled by the Discover Programme's flexible approach to evaluation, which has granted project teams wide discretion in defining and measuring impact. However, recent legislative and policy developments; including the Research and Innovation Act (Government of Ireland, 2023), the Public Spending Code (Department of Public Expenditure and Reform, 2019), and the revised Transition Year Programme Statement (Behan & Geraghty, 2025) now place stronger expectations on public bodies to demonstrate value for money, coherence, and alignment with national strategic goals. Together, these shifts create an important opportunity to strengthen evaluation frameworks across Discover-funded initiatives while maintaining the creativity and community responsiveness that characterise the programme.

Transition Year (TY), typically undertaken by students aged 15-16, occupies a pivotal space in the Irish education system. TY is a unique one-year optional programme situated between the Junior Cycle and Senior Cycle that provides students with a semistructured "developmental pause" between examination cycles. It emphasises experiential learning, personal development, and exploration, and has no direct equivalent in many other education systems. This distinctiveness is widely documented in national and international analyses (Jeffers, 2011; Clerkin, Jeffers & Choi, 2022). As a non-exam year, TY serves as an intentional bridge between the more prescriptive, teacher-directed Junior Cycle and the greater independence required in the Leaving Certificate years. Research shows that TY offers students a valuable opportunity to sample subjects, reflect on future pathways, and make informed decisions before reentering high-stakes academic environments, contributing to gains in maturity, confidence, and self-reliance (Clerkin, 2019, 2020).

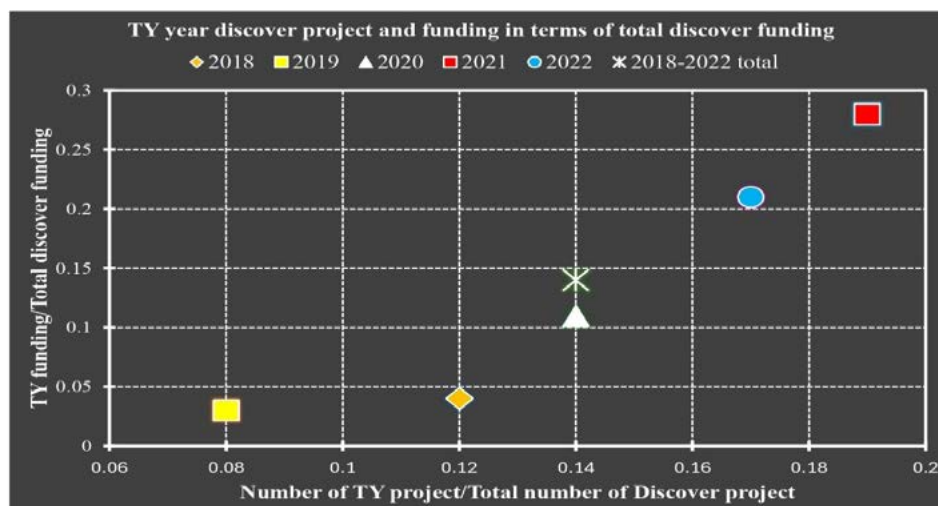
TY is particularly well suited to STEM engagement because it prioritises active, real-world, and interdisciplinary learning. Students frequently participate in work experience, enterprise education, and experiential learning modules, creating conditions that support STEM engagement approaches grounded in inquiry-based tasks, engineering design cycles, community-based science activities, and scientific fieldwork. Schools routinely integrate STEM-rich opportunities into TY, such as participation in the Young Scientist competition, coding programmes, STEM enterprise projects, design-thinking challenges, and maker-based initiatives. These activities align strongly with TY's broader emphasis on experiential learning and student agency.

Scaffolding (defined as structured support that gradually fades as learners gain independence) is especially relevant to TY's pedagogical model. TY places strong emphasis on active, hands-on learning; peer collaboration and team-based project work; and co-creation and mentorship through partnerships with teachers, researchers, community organisations, and industry experts. These practices require scaffolded structures that guide students through inquiry, design, and reflection while supporting independence and ensuring meaningful learning outcomes.

Between 2018 and 2022, 32 Discover-funded projects either directly targeted TY students or included a significant TY strand, with both the number of TY projects and the proportion of funding allocated to TY projects increasing over time (Fig. 1). This paper undertakes a systematic analysis of these projects to examine the evaluation methodologies employed; what was done well, what challenges emerged, and how these practices align with or diverge from emerging best practice standards in EPE evaluation. We investigate whether projects achieved their stated objectives, how success was defined and measured, and what barriers (structural, methodological, or contextual) may have shaped their outcomes. Particular attention is paid to formative, summative, process and impact evaluation; the integration of qualitative and quantitative methods; the role of external evaluation; and the extent to which projects addressed inclusion, scalability, and longitudinal impact. To support reader clarity, these evaluation types are defined prior to the presentation of findings (Jensen, 2014).

FIGURE 1

Transition Year Discover projects and funding as a proportion of total Discover Programme projects and funding (2018-2022)



By publishing this analysis, we aim to strengthen the evidence base for evaluation practice within TY-focused STEM engagement and contribute to Ireland's broader movement toward research-informed public engagement. The study offers insights for applicants, project teams, funders, and policymakers and lays the groundwork for future research that will extend beyond TY to inform evaluation practices across the wider EPE landscape.

Previous Research on Evaluation in EPE

Key Evaluation concepts

To support clarity and ensure consistency in terminology, we define below the evaluation types referenced throughout this paper, drawing on established frameworks within education and public engagement evaluation (Jensen, 2014):

- **Formative Evaluation:** Ongoing assessment conducted during project implementation with the aim of improving delivery, design, or participant experience.
- **Summative Evaluation:** End-of-project assessment focused on documenting outcomes, outputs, or overall achievement of objectives.
- **Process Evaluation:** Examination of how a project is implemented, including fidelity to plans, quality of delivery, participant engagement, contextual influences, and operational barriers.

- **Impact Evaluation:** Assessment of longer-term changes attributable to the intervention, such as shifts in attitudes, behaviour, identity, or participation, often requiring longitudinal or delayed data collection.
- **External Evaluation:** An assessment conducted by an independent evaluator or organisation, often used to enhance credibility, transparency, and methodological rigour.

These definitions provide a grounding framework for the subsequent methodological analysis.

Evaluation in Irish education and EPE Contexts

The evaluation of EPE initiatives in Ireland has gained increasing attention in recent years, particularly in the context of STEM education (Department of Education and Skills, 2017; Behan & Geraghty, 2025; University of Limerick, n.d.; Honey & Hilton, 2011).

However, systematic studies focusing on evaluation frameworks, especially within school-based programmes, remain limited. Between 2013 and 2024, the Discover Programme supported over 500 STEM outreach projects, with a total investment of approximately €50 million, yet few have published detailed process or impact evaluations.

The Department of Education's Inspectorate has emphasised the need for improved assessment and evaluation practices in schools, noting that many institutions lack the capacity to gather and use data effectively to inform teaching and learning. This capacity gap has been linked to limited evaluation expertise, competing workload demands, and the absence of dedicated structures to support data-informed reflection and improvement (Royal Irish Academy, 2023; Gilleece & Clerkin, 2025; O'Connor, 2024). As a result, evaluation is frequently approached as an administrative requirement rather than an embedded element of pedagogical practice, which constrains the depth and consistency of schoollevel evaluation work (Royal Irish Academy, 2023; Jensen, 2014). While these findings are not specific to EPE, they underscore a broader national challenge in embedding robust evaluation practices across educational initiatives.

At the institutional level, centres such as EPI-STEM at the University of Limerick have contributed to the development of research-informed STEM education, including public engagement and teacher professional development. Their work highlights the importance of integrating formative, summative, and impact evaluation into programme design, yet also points to the need for more consistent national standards. Internationally, studies have shown that effective EPE evaluation requires a mixed-methods approach that includes process evaluation, stakeholder feedback, and longitudinal tracking to assess behavioural and attitudinal change (Davies & Horst, 2016; W.K. Kellogg Foundation, 2004).

These approaches are essential for transitioning from outreach to genuinely engaged research, where public participation informs both the content and direction of scientific inquiry, a point emphasised in the wider science communication literature (Davies & Horst, 2016; Jensen, 2014).

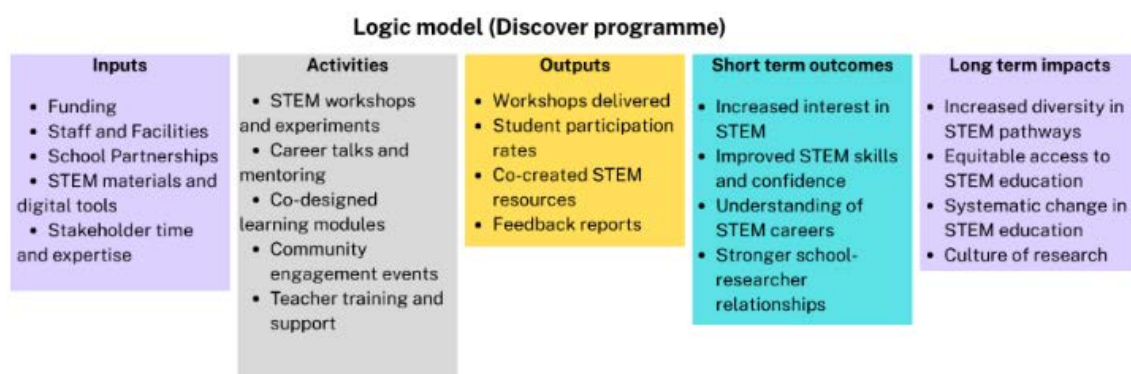
Despite these advances, challenges persist. As noted in wider critiques of science communication evaluation, many projects rely heavily on self-reported data, often without external validation, and sometimes fail to distinguish between outputs and outcomes (Jensen, 2014). Moreover, the absence of a unified national framework for EPE evaluation in Ireland limits the comparability and scalability of findings. This study tries to address these gaps by offering a detailed, comparative analysis of evaluation practices in TY-focused Discover projects, with the aim of informing future policy and contributing to better practices and standards in EPE evaluation.

Theoretical Framework

This study is grounded in a multi-theoretical approach that draws from educational evaluation theory and constructivist pedagogy. At its core, the research is informed by the Theory of Change and Logic Model frameworks, which are widely used in programme evaluation to map the logical sequence from inputs and activities to outputs, outcomes, and long-term impacts (W.K. Kellogg Foundation, 2004). These models help clarify the assumptions behind TY-related Discover project designs and the mechanisms through which engagement activities are expected to influence students' STEM attitudes, skills, and aspirations. A logic model is provided to clarify understanding of the Discover programme (Fig. 2).

FIGURE 2

Logic model for the Discover Programme.



Note: The diagram illustrates the sequence from inputs (funding, partnerships, resources) through activities (STEM workshops, mentoring, community engagement) to outputs (workshops delivered, co-created resources), short-term outcomes (increased STEM interest, improved skills), and long-term impacts (diversity in STEM pathways, systemic change in STEM education).

Complementing this, the study draws on constructivist learning theory, particularly social constructivism as articulated by Vygotsky (Vygotsky, 1978; Robinson et al., 2024). This theory emphasises the role of social interaction, cultural context, and collaborative learning in cognitive development. Vygotsky's concept of the Zone of Proximal Development (ZPD) and the practice of scaffolding are especially relevant to TY projects, where students often engage in peer learning, mentorship, and co-creation (Vygotsky, 1978; Robinson et al., 2024). These concepts are particularly valuable in the TY context because students are operating within a developmental stage where structured support can significantly enhance their capacity to engage with new skills, unfamiliar technologies, and open-ended problem-solving tasks.

In the context of STEM education, the STEME framework (Science, Technology, Engineering, Mathematics, Education) provides a holistic model that integrates pedagogy, identity formation, and real-world relevance. It supports the development of 21st-century competencies such as critical thinking, creativity, and problem-solving, which align with TY's exploratory ethos and the goals of the Discover Programme (Greene, Caracelli, & Graham, 1989).

Together, these frameworks provide a robust lens through which to evaluate the design, implementation, and impact of TY-focused STEM initiatives, while also positioning this work within a broader movement toward research that is socially responsive.

Methodology

This study employed a qualitative meta-evaluation approach, systematically analysing final reports from Discover Programme (DP) projects that targeted Transition Year (TY) students between 2018 and 2022. The methodology was designed to align with both Theory of Change and Logic Model frameworks, enabling a structured examination of how project inputs (e.g., funding, partnerships, pedagogical strategies) translated into outputs (e.g., workshops, student projects) and outcomes (e.g., new skill development, better STEM engagement, increased inclusion) (Davies & Horst, 2016).

The first phase involved identifying relevant projects from the DP database, using a manual review of award records and project descriptions to isolate those with a significant TY component. The total number searched was 226, of which 32 related to TY. Projects were then analysed for their evaluation strategies, including the use of formative, summative, process, and impact evaluation methods.

Data were extracted from project reports, Research Ireland internal records and supplementary materials (e.g., evaluation tools, reviewer feedback). Where external evaluations were referenced but not included, Project Leads were contacted to obtain additional documentation. The analysis was guided by a logic model lens (W.K. Kellogg Foundation, 2004), mapping each project's stated objectives against its reported

outcomes and identifying gaps in implementation, measurement, or reporting. Particular attention was paid to how projects defined and assessed success, the extent to which they addressed inclusion and scalability, and whether they incorporated longitudinal tracking or external validation.

The methodology also considered the degree of co-creation and stakeholder involvement in both project delivery and evaluation. Projects that demonstrated participatory design such as engaging students, teachers, and community partners in shaping activities and reflecting on outcomes were noted as exemplars of socially responsive practice. This aligns with Research Ireland's emphasis on research that is collaborative, inclusive, and impactful beyond academia.

Finally, the study adopted a reflective evaluative stance (Crawford, 2023), not only documenting what was done but also interrogating the assumptions, constraints, and contextual factors that shaped evaluation practices.

Results

The results have been summarised in Table 1 and 2. Table 1 summarises the evaluation types identified across the 32 TY-focused Discover projects, reporting both the number and percentage of projects using each approach. Table 2 summarises additional evaluation-related features, including tools used, inclusion and equity indicators, dissemination activities, and stakeholder engagement.

Evaluation Methods: Diversity and Depth

The TY Discover projects employed a wide spectrum of evaluation methods, but with considerable variation in depth, consistency, and theoretical grounding.

- **Formative and Summative Evaluations:** Table 1 summarises the number and percentage of TY-focused Discover projects using each evaluation type. This provides insight into the overall evaluation workload undertaken across the period 2018-2022, with years of higher project volume naturally producing more evaluation activity. Most projects (75% of all) included some form of formative evaluation, i.e., feedback collected during implementation to adjust delivery. However, these were often informal and lacked systematic documentation. Summative evaluations were less common (59% of all), typically in the form of end-of-project reports, but they often focused on descriptive statistics (e.g., number of participants) rather than deeper outcome analysis.
- **Process and Impact Evaluations:** A subset of projects (47%) engaged in process evaluation (examining how the project was implemented) or impact evaluation (25%) (assessing long-term effects), though the depth and duration of tracking varied significantly. Where present, these were often superficial or anecdotal, with limited use of validated tools or longitudinal tracking.

- Implementation of mixed methods in evaluation: Mixed methods, combining qualitative and quantitative approaches, were employed in 50% of the evaluated projects (Table 2). This substantial proportion suggests that many project teams valued the ability to capture both numerical outcomes and contextual insights.
- External Evaluations: A minority of projects (approximately 31%) commissioned external evaluations. While not widespread, these externally led assessments tended to be more rigorous, methodologically robust, and reflective in nature. They often provided a more independent lens on project outcomes, stakeholder engagement, and longer-term impacts. Most evaluations were conducted either during delivery or shortly after project completion, with timing typically aligned to final outputs. They were carried out by independent evaluators or external reviewers, including academic teams, consultants, and project partners. Budgets for evaluation were rarely detailed, though most appeared modest and embedded within overall project funding. Despite variability in format and commissioning, these evaluations consistently added value by strengthening transparency, credibility, and the overall quality of project insights.

TABLE 1

Evaluation types used across TY-focused Discover projects (n=32)

Evaluation Type	Number of projects	Percentage of projects
Formative evaluation	24	75%
Summative evaluation	19	59%
Process evaluation	15	47%
Impact evaluation	8	25%
External evaluation	10	31%

Evaluation Tools

Evaluation tools varied widely in quality and design. Surveys were the most commonly used method, appearing in 75% of projects (Table 2). However, many of these surveys exhibited methodological limitations that reduced their evaluative value. For instance, several surveys included leading items such as “*Did you enjoy the workshop?*” without neutral formulations, while others lacked pre-/post-comparisons, limiting claims about change over time. Some tools also included double-barrelled questions (e.g., combining enjoyment and learning within a single item), making responses more difficult to interpret.

Focus groups and interviews were used in 13% of projects, providing richer qualitative insights, though they were rarely triangulated with quantitative data. Where focus groups or interviews were used, they typically involved either students reflecting on workshop experiences or teachers commenting on implementation logistics, with

a smaller number involving both groups. The limited use of these richer qualitative methods appears to reflect practical constraints: teachers reported limited time to facilitate additional evaluation activities, and project teams often lacked specialist qualitative research expertise or resources to undertake more labour-intensive data collection. These factors help explain why qualitative approaches were rarely integrated or triangulated with quantitative findings.

Observational data and facilitator reflections were notably underutilised, despite their potential to capture process-level dynamics and contextual nuances that other methods might miss. Greater use of such approaches could help strengthen understanding of participant experiences, implementation fidelity, and contextual factors influencing project outcomes.

TABLE 2

Evaluation-related features reported across projects (n=32)

Feature	Number of projects	Percentage of projects
Surveys	24	75%
Mixed-method approaches	16	50%
Focus groups/interviews	4	13%
DEIS/underrepresented group	7	22%
Dissemination strategy	28	88%

Inclusion, Equity, and Context Sensitivity

In this study, we use the term *inclusion* to refer to the intentional design of activities and evaluation tools that ensure meaningful participation by students from diverse socioeconomic, cultural, and educational backgrounds. *Equity* concerns the degree to which projects recognise and respond to differential needs, providing appropriate supports so that outcomes are not limited by structural disadvantage. *Context sensitivity* refers to the extent to which evaluation practices account for the specific environments in which TY projects unfold; including school culture, resource availability, community partnerships, and local constraints, rather than applying uniform methods across highly varied settings. These concepts help to illuminate variation in how Discover-funded TY projects address participation, access, and fairness within their evaluation designs.

Projects varied considerably in how they addressed inclusion. Around 22% (Table 2) explicitly targeted Delivering Equality of Opportunity in Schools (DEIS) or other underrepresented groups, and some of these adapted their evaluation tools to better reflect the needs and contexts of these audiences. In contrast, several projects claimed to be inclusive but did not provide disaggregated data or clear strategies to assess

differential impact, making it difficult to determine whether inclusion was meaningfully achieved or simply stated as an objective. For example, some evaluations reported overall participant satisfaction without indicating whether responses varied by socio-economic background, gender, or ethnicity. While socio-economic context was acknowledged in a few cases, it was rarely integrated into the design or analysis of evaluation frameworks, limiting the ability to understand how context influenced outcomes or engagement.

Knowledge Dissemination and Stakeholder Engagement

Most projects (88%, Table 2) included dissemination strategies, often through public showcases, digital platforms, or the development of teacher toolkits. These efforts suggest a strong emphasis on visibility and resource-sharing within the immediate project context. However, many projects lacked clear plans for communicating findings beyond their direct stakeholders, limiting the potential for broader learning or policy influence. Stakeholder engagement in the evaluation process, such as involving students or teachers in designing tools or interpreting data, was rare but appeared to be particularly valuable when it did occur.

Structural and Practical Constraints

Several systemic issues emerged across the projects. Timing (i.e., time of the year) was a recurring challenge, with many initiatives clashing with school calendars and thereby limiting teacher and student availability. Teacher engagement was also affected, as educators were often overburdened and had limited incentives to participate in evaluation activities or attend training sessions. Digital access posed another barrier; online components struggled due to uneven infrastructure and varying levels of digital literacy among participants. Finally, scalability proved difficult for resource-intensive models, particularly in rural or under-resourced contexts where logistical and financial constraints limited broader implementation.

Discussion

The findings from this study reveal a complex and evolving picture of evaluation practice within TY-focused Discover projects. While there is evidence of innovation and responsiveness, the evaluation strategies employed remain uneven and often disconnected from established theoretical frameworks. This section explores how these findings intersect with broader debates in EPE evaluation, the implications for the Irish context, and how TY projects can contribute to a more theoretically grounded and socially responsive body of research.

Fragmentation in Evaluation Practice

The diversity of evaluation methods, ranging from informal feedback loops to

externally commissioned reports, reflects a lack of shared evaluative language or framework across projects. For instance, while 75% of projects used surveys, only a small minority incorporated observational data and 13% used focus groups, indicating inconsistent application of mixed methods approaches. None of the projects employed sophisticated statistical method such as Difference-in-Difference Analysis or Propensity Score Matching. Furthermore, only 31% of projects commissioned external evaluations, and these were often conducted post hoc, limiting their influence on project design.

This fragmentation mirrors a broader tension within EPE between instrumentalist approaches (driven by expectations for outputs such as participant numbers, event counts, and visibility metrics) and more developmental, formative approaches that emphasise learning, reflection, and adaptation. In practice, these two logics often sit uneasily together: instrumentalist evaluation tends to privilege easily quantifiable outcomes, while formative evaluation focuses on understanding processes, improving practice, and supporting participants' learning experiences. This tension helps explain why TY-focused projects frequently relied on quick, output-oriented surveys rather than richer qualitative or mixed-method approaches, and why more reflective, process-driven evaluation was less consistently embedded across projects. Recognising this tension is important, as it highlights the need for evaluation frameworks that value both accountability and learning, rather than prioritising one at the expense of the other.

Theory-Practice Gaps in Constructivist Learning

Many TY projects are pedagogically aligned with constructivist and social constructivist theories emphasising inquiry, collaboration, and real-world relevance. However, their evaluation practices often fail to reflect these same principles. A high percentage (71%) of projects reported incorporating some forms of co-creation. However, this was typically limited to programme delivery rather than evaluation design. Moreover, only a minority of projects used reflective tools such as journals or peer feedback mechanisms. The under-use of observational data and focus groups (13%) further suggests that process learning and student voice were not systematically captured. This disconnect weakens the internal coherence of TY projects and limits their contribution to constructivist educational research.

The Role of TY in Expanding the EPE Evidence Base

Transition Year occupies a unique space in the Irish education system because of its flexible, exploratory nature, and is well-suited to interdisciplinary and experiential learning. As such, TY projects offer a valuable testing ground for new models of STEM engagement and evaluation. However, their potential to inform national and international debates on EPE with STEM remains underutilised.

The current evaluation practices offer limited insight into the transformative potential

of TY experiences, such as shifts in identity, confidence, or long-term aspirations. While 25% of projects reported some form of longitudinal tracking, most relied on short-term post-event surveys. Few included indicators related to personal growth, STEM identity, or behavioural change. As a result, the evidence base tends to prioritise immediate outputs over the broader developmental impacts these experiences may foster.

Implications for the Irish EPE Landscape

These dynamics have broader implications for how evaluation is conceptualised and practised within Ireland's EPE ecosystem. The wide variation in evaluation tools, the lack of information around appropriate methodological approaches (50%), and limited commissioning or use of external evaluation (31%) reflects a broader absence of shared standards, training, and infrastructure. At the same time, the high rate of survey use (75%) and strong dissemination efforts (88%) point to a foundation of commitment and creativity. If harnessed effectively, TY projects could serve as laboratories for evaluative experimentation, helping to develop models that are both rigorous and responsive, structured and participatory. Their integration into the national conversation on EPE evaluation could help bridge the gap between policy aspirations and on-the-ground realities. Digital access barriers also constrained evaluation design, particularly for projects reliant on online tools or remote data collection.

Implications for Policy and Practice

The findings of this study highlight a pivotal moment for evaluation practice within Ireland's Education and Public Engagement landscape. While TY Discover projects demonstrate innovation and commitment, they also expose systemic gaps in coherence, capacity, and theoretical alignment. Addressing these challenges requires a coordinated policy response and practical support mechanisms. The following recommendations outline key areas for action.

Strengthening Coherence in Evaluation Practice

Evaluation practices across Discover-funded projects reveal considerable variation, with limited consistency in methodological approaches or reporting standards. This variability underscores the need for a more integrated and coherent approach to evaluation that can support both accountability and learning, while remaining sensitive to the diverse contexts in which EPE activities take place. Drawing on principles such as Theory of Change and Logic Models can help projects articulate their intended outcomes more clearly and design evaluations that are proportionate to their scale and complexity.

Providing adaptable templates and practical guidance on mixed methods, longitudinal tracking, and ethical data collection would further strengthen evaluation capacity across the sector. Importantly, such resources should be designed to accommodate the specific needs of different educational settings, including DEIS schools and

rural communities, without imposing rigid structures. By fostering greater alignment in evaluative practice, this integrated approach can enhance the strategic value of evaluation, enabling projects to contribute more effectively to broader policy goals while remaining responsive to local priorities.

Invest in Evaluation Capacity Building

To move beyond fragmented or ad hoc evaluation practices, it is essential to invest strategically in building evaluation capacity across the research and engagement ecosystem. This means prioritising professional development opportunities that equip educators, project leads, and community partners with the skills and confidence to design robust evaluations, analyse data meaningfully, and engage in reflective practice that informs future work. Such investment should include structured training in evaluation methodologies, participatory approaches, and impact assessment, alongside the creation of mentorship and peer-learning networks that foster collaborative growth and support emerging evaluators. Co-developing toolkits that feature validated instruments, real-world case studies, and adaptable frameworks can further democratise evaluation knowledge and reduce dependence on externally imposed models. By embedding these supports into the fabric of engaged research, we will cultivate a confident, capable, and context-sensitive evaluation community that is empowered to generate insights that matter to all stakeholders involved.

Embed Participatory and Co-Created Evaluation

Evaluation and engaged research contexts should embody the participatory ethos that defines these approaches, transforming assessment from a top-down exercise into a collaborative and inclusive learning process. Policies and practices must actively support the involvement of students, teachers, and community members in shaping evaluation questions, determining what success looks like, and interpreting findings in ways that reflect diverse perspectives and lived experiences. Reflective tools, such as journals, storytelling, and peer feedback, should be integrated to capture the nuances of learning, growth, and relational dynamics that traditional metrics often overlook. Moreover, sharing findings collaboratively with schools, families, and the wider public reinforces transparency and mutual accountability, while also celebrating collective achievements. By embedding co-created evaluation practices into the core of engaged research, we foster a culture of responsiveness, inclusion, and shared ownership that strengthens both the process and the outcomes of educational and community-based initiatives.

Support Longitudinal and Developmental Evaluation

Capturing the long-term impact of TY experiences demands a commitment to sustained and adaptive evaluation practices that reflect the evolving nature of student development. Policy frameworks should actively support multi-year projects that embed longitudinal evaluation components from the outset, enabling researchers

and educators to trace the influence of TY initiatives over time. Follow-up studies that track student trajectories beyond TY, into further education, career pathways, and civic life, are essential for understanding how early engagement shapes STEM identity, aspirations, and social participation. In parallel, developmental evaluation models should be embraced for their flexibility and responsiveness, allowing evaluators to adapt their approaches in real time as projects evolve and new insights emerge. These strategies not only deepen our understanding of TY's transformative potential but also ensure that evaluation remains a dynamic, learning-oriented process that supports innovation and long-term impact.

Create a Central Repository for Evaluation Learning

To foster sector-wide learning and continuous improvement, a central repository should be established as a dedicated infrastructure for evaluation knowledge generated through Discover projects and related initiatives. This repository would serve as a dynamic hub for hosting evaluation reports, tools, and case studies, making them accessible to educators, researchers, community partners, and policymakers. By enabling comparative analysis across projects and funding cycles, it would support evidence-informed decision-making and highlight patterns, innovations, and areas for growth. Importantly, such a resource would reduce duplication of effort, promote transparency, and provide practical guidance for applicants and evaluators seeking to build on existing work. Embedding this shared space within the engaged research ecosystem reinforces a culture of openness, learning, and collaboration, ensuring that evaluation insights are not only preserved but actively used to shape future practice.

As with any meta-evaluation, this study is limited by the variability and incompleteness of project documentation, and the absence of publicly accessible full reports. Strengths include the breadth of the dataset, use of a structured analytical framework, and triangulation across multiple evaluation types. These considerations help contextualise the patterns identified and highlight the need for more consistent reporting frameworks.

Conclusion

This study provides a systematic analysis of evaluation practices within Transition Year (TY) projects funded through the Discover Programme of Research Ireland between 2018 and 2022. The findings demonstrate a landscape characterised by commitment, innovation, and responsive practice, shaped by varied educational contexts and the flexible structure of the programme. Evaluation approaches differed naturally according to project scale, aims, available resources, and prior experience, reflecting patterns common in wider STEM education and public engagement settings.

Rather than indicating shortcomings, this diversity highlights the importance of tailored evaluation support and the value of creating shared frameworks and capacity building

opportunities. The study suggests practical avenues for strengthening evaluation coherence across the sector, including co-created methodologies, participatory approaches, longitudinal thinking, and accessible tools that respect the unique needs of TY environments.

By situating the analysis within established theoretical frameworks such as Theory of Change, Logic Models, and constructivist learning theory, this paper offers a constructive foundation for ongoing enhancement of evaluation practice. The insights aim to support educators, project teams, and policymakers in building upon existing strengths, deepening reflective learning, and contributing to a more integrated and evidence-informed EPE ecosystem in Ireland. Future work at Research Ireland will extend this focus beyond TY to examine evaluation practices across the broader education and public engagement landscape.

Although this analysis focuses on TY-focused projects funded through the Discover Programme, the insights generated extend well beyond this specific funding scheme. Many of the patterns observed, such as the dominance of survey-based evaluation, the limited use of mixed methods, the challenge of embedding reflective or process-focused approaches, and the variable integration of inclusion and equity considerations are consistent with findings reported in Irish education more broadly and in international STEM engagement literature (Gilleece & Clerkin, 2025; O'Connor, 2024; Davies & Horst, 2016; Jensen, 2014). Similar evaluation challenges have been highlighted in school based interventions across Europe, the UK, and OECD contexts, where practitioners often balance practical constraints with the need for methodological rigour and meaningful stakeholder engagement, and demonstrable impact (Davies & Horst, 2016; Jensen, 2014).

The emerging trends identified here therefore offer transferable lessons for funders, project teams, and policymakers working across diverse educational and public engagement settings. By articulating the structural and methodological pressures shaping evaluation practice, this study contributes to wider debates on how to build evaluation capacity, strengthen reflective and participatory approaches, and support more coherent, evidence-informed STEM engagement ecosystems.

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