



What Works Hub
for Global Education

Systematic Review of Gender, Equality, Disability and Social Inclusion in Implementation Science Research

Working Paper

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Executive Summary

This review systematically reviews theoretical and empirical studies that incorporate Gender Equality, Disability and Social Inclusion (GEDSI) in implementation science research in education. The review is guided by the overarching research question: **'How is gender equality, disability and social inclusion addressed in implementation science research, with lessons for education in the global South?'** Empirical studies were selected on the grounds that they include some information on GEDSI. Specifically, using an adapted version of the WHO Gender Responsive Assessment Scale, we examined whether programme design is GEDSI-informed, whether data collection and analysis incorporate GEDSI considerations, and whether research teams are diverse and representative.

In total only 19 education-focused studies were identified that paid some attention to GEDSI, three of which provided conceptual frameworks or theories around GEDSI integration in implementation research. We thus reviewed 16 empirical studies in more detail, focusing on how GEDSI has been integrated into implementation research to date. Amongst these 16 such studies, many demonstrated only moderate to low GEDSI integration. Studies that explicitly engaged with power dynamics were more likely to adopt participatory and community-led methodological approaches. It is important to note that as implementation science is a relatively recent term in education, many studies that align with its core principles may not use the formal terminology and therefore would not be captured in our systematic search. To address this, we include some examples of studies in reflection boxes throughout the review that could offer insights but do not directly use implementation science research terminology. However, to capture fully research that does not use the terminology is beyond the scope and aim of this paper. As the purpose of this paper is to identify trends in education and implementation science research, the identified approach is valid.

In addition to the studies focusing on education, we reviewed additional studies from other sectors (predominantly health) through searches and citation tracing to broaden our understanding of how GEDSI dimensions are integrated into implementation science research. This cross-sector review was driven by the recognition that challenges and facilitators associated with embedding GEDSI are not unique to educational settings but are also prevalent in health and related fields, and that there is more literature on implementation science research. The literature that provides frameworks were mostly from the health sector. These highlight the importance of addressing power imbalances, structural barriers, and cultural contexts in designing and executing interventions. Despite their potential to inform equitable practices, many conceptual frameworks lack practical tools for translating GEDSI principles into real-world applications, and do not yet seem to have been used extensively.

This systematic review provides a series of recommendations for GEDSI integration in implementation science research. Future research should prioritise the development of methodologies that incorporate GEDSI considerations at all stages, from design of both the intervention and research to analysis and feedback to inform the intervention's implementation. This includes consideration of relevant research methods, systematic disaggregation of data collection and analysis across intersecting identities, meaningful engagement with affected communities to

redress power imbalances, inclusive and accessible dissemination of the findings to inform programme design and implementation and fostering diversity within research teams to ensure GEDSI representation. Additionally, implementation science frameworks must evolve from theoretical constructs to provide actionable strategies for addressing systemic inequities and power imbalances. Policymakers, practitioners and researchers should work together to ensure that implementation science research promotes equity, challenges structural barriers that reinforce power imbalances, and contributes to the development of inclusive systems that leave no one behind.

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1. Introduction to Implementation Science in the What Works Hub for Global Education

Implementation science is the scientific inquiry into the implementation process to discover how and why it is going right or wrong. This research aims to use evidence to scale successful practices and improve less effective ones and involves iterative hypothesis testing, baseline-midline-endline evaluations, and routine monitoring. However, systematic documentation and publication of such evidence efforts are rare, especially in education (Dowd, 2024).

Implementation science is divided into two focal areas in the context of the What Works Hub for Global Education: the **'implementation of science'** and the **'science of implementation.'** The first area focuses on how evidence is adopted by policymakers and practitioners in real-world settings, while the second area centres on advancing and formalising methods and measurements to navigate the complexities of implementation.

Implementation science research involves the systematic study of how policies and programmes are delivered in real settings, with attention to why they work, for whom, under what contextual conditions, and whether they can be implemented equitably at scale (Alison, 2023). Ideally, the evidence is then used to scale what is working and/or improve what is not working (Dowd, 2024). For the What Works Hub for Global Education, implementation science research puts into practice evidence on what works, while simultaneously generating insights on how effective implementation occurs, so that quality practices can be replicated and sustained at scale (Angrist et al, 2025).

Curran (2020) frames what makes implementation research distinctive: unlike effectiveness research, which begins by asking 'whether the thing works,' implementation research starts with the implementation itself, 'studying options for helping people and places to do the thing.' This orientation means that inquiry is inherently cyclical, embedded in practice, and geared towards continuous adaptation and improvement. Building on the health literature (an area where implementation science research was first used and developed), the field of education is also now adapting these insights into routine practice and the delivery and scaling of education interventions (What Works Hub for Global Education, 2024).

Approaches to implementation science research reinforce this embedded and collaborative orientation. First, it is pragmatic and embedded within the implementation of interventions themselves, asking questions that cannot be separated from delivery and ideally positioning implementation teams as core members of the research process. Second, it is co-designed with implementers and researchers, ensuring that research questions are jointly developed to support collaborative decision-making and remain demand-driven and contextually relevant (Alison 2023; What Works Hub for Global Education, 2024).

Box 1 outlines different forms that implementation science research can take.

Box 1: Forms of implementation science research in education

Methods and designs

- **Process and fidelity studies**

Implementation science research can use responsive and flexible designs, with multiple cycles of data collection and analysis. This allows for knowledge to be produced in real time. This requires strong feedback loops and systems to document adaptation and learning throughout delivery.

- **Case studies**

Case study approaches can provide insights into how interactions between interventions, implementation strategies, context, and stakeholder motivations affect outcomes in different contexts.

- **Policy analysis and political economy studies**

Implementation science research can also involve political economy analysis focusing on the context of delivery, including political and economic systems, institutional arrangements, incentives, and governance factors. Such an approach analyses how these conditions shape opportunities, constrain implementation, and determine whether interventions achieve intended results at scale.

- **Adaptive and rapid-cycle experimentation**

Implementation research can advance new methods such as test-learn-adapt approaches and A/B testing¹. These rapid-cycle strategies shorten the feedback loop between evidence and practice, producing timely evidence to inform adaptation, decision-making, and policy debates.

Levels of analysis

- **Comparative studies at scale**

Implementation science research often aims to examine whether interventions that prove effective in controlled or pilot settings remain effective under government delivery systems and at scale. It analyses enabling conditions for sustained take-up and highlights why some efforts succeed while others fail.

- **System-level analyses**

Implementation research may also integrate analysis of political economy, state capacity, financing, and system incentives in order to understand the overall system. It goes beyond classroom interventions to explain why implementation processes vary across contexts and why reforms succeed or stall.

Source: Alison (2023) and What Works Hub for Global Education (2024)

This systematic review aims to synthesise findings from empirical studies to identify how implementation research in education, and related fields of study, have incorporated **gender equality, disability and social inclusion (GEDSI)** where GEDSI is defined as:

¹ A/B testing is an approach to programme evaluation that is similar to randomised controlled trials. In A/B testing there is also random assignment between groups, except rather than include a pure control group, multiple versions of a programme are compared: version A vs. B. For example, group A would receive the remedial education programme and group B would receive the same programme but with more intensive mentoring for teachers, and success would be measured by comparing student learning outcomes for groups A vs. B ([Angrist et al, 2024](#)).

*'Gender equality, disability and social inclusion (GE[D]SI) is a concept that examines **unequal power relations** between different social groups. The GE[D]SI approach...focuses on the need for action to **re-balance these power relations and ensure equal rights, opportunities, and respect for all individuals regardless of their social identity**' (GEDSI Working Group 2017, p. 37).*

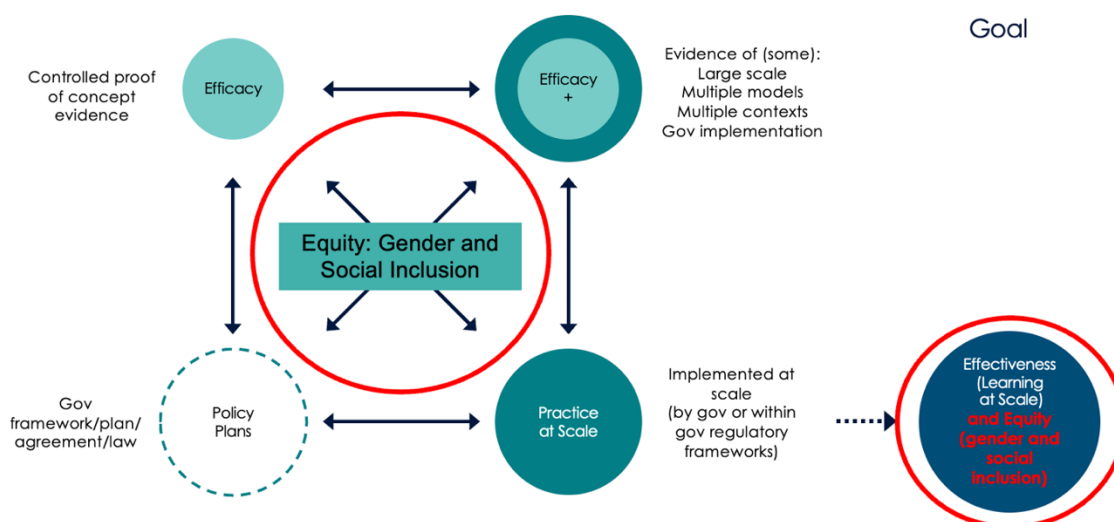
Our approach to social inclusion focuses on key intersecting dimensions such as gender, disability, religion, race, ethnicity, conflict, and geographic location. The What Works Hub for Global Education implementation science desk review served as a foundational starting point for our search, offering key insights and frameworks (What Works Hub for Global Education, 2024). Building on this, we refined our focus to literature explicitly addressing GEDSI to align with our research objectives. We also have attempted to identify studies based in the Global South in particular.

The Hub has created an intellectual framework for implementation science that examines four different areas (efficacy, efficacy +, policy plans, practice at scale), and the interrelation between them:

- **Efficacy:** Evidence from controlled studies showing improved learning outcomes (eg target instruction based on children's understanding).
- **Efficacy+:** Evidence showing interventions' effectiveness across different contexts, including government settings.
- **Policy Plans:** Governmental plans, policies, frameworks, and regulations aimed at enhancing children's learning, yet to be implemented at scale.
- **Practice at Scale:** Current practices in education systems and classrooms, which may or may not align with evidence and policy.

This paper provides insights into incorporating GEDSI within this framework both in terms of process and goals, drawing on what can be learned from existing studies. As identified in Figure 1, this can be achieved by ensuring that interventions and research incorporate GEDSI in all their dimensions of implementation science research, including by addressing structural barriers and power imbalances that perpetuate inequality. This will ensure that scaling up of interventions is achieved effectively and equitably. By adding a GEDSI lens, the framework will better guide researchers and practitioners in developing interventions that benefit education of all children and young people in ways that are both inclusive and transformative.

Figure 1: What Works Hub for Global Education Intellectual Framework



Most implementation science models divide the process of implementation into several phases (eg pre-implementation, implementation, and maintenance/enhancement). There is general recognition that implementation may not always move linearly through such phases (California Institute for Mental Health [CIMH] 2006; Fixsen et al. 2009; Mendel et al. 2008). Recently, some frameworks, particularly in health have aimed at integrating equity into implementation science research (for example Digital Health Equity-Focused Implementation Research (DH-EquIR, Quality Enhancement Research Initiative Implementation Roadmap). However, the same consideration has not yet been given to implementation science research in education. In addition, most of the health frameworks are relatively recent, and empirical studies that fully integrate GEDSI remain sparse. Importantly, both empirical and conceptual studies are based in the Global North (the majority being in the United States), with limited research in the Global South.

This paper focuses on the design and delivery of implementation science research from the perspective of learning from studies that adopt a GEDSI approach. To select papers, we apply the GEDSI assessment framework, which enables a systematic review of how far identified studies that do take account of GEDSI incorporate GEDSI in their design, analysis, team composition and community engagement. A related dimension of implementation science research, which focuses on the uptake and use of evidence for policy and practice, remains an important but separate issue, which lies beyond the scope of this review of research evidence.

This systematic review aims to address this gap by providing a systematic review of studies on GEDSI in implementation research in education. It is primarily concerned with empirical research focused on education. Considering the relatively recent focus on implementation science in education and the limited availability of empirical studies, we expanded our search to other sectors, notably health. While not exhaustive, the inclusion of information from other sectors aimed to provide an indication of how GEDSI is reflected in implementation science research across these fields and to draw transferable conclusions. Our focus was on research in the Global South. However, due to the limited availability of studies from this context, we also included research from other locations to position our analysis within a broader perspective. To tackle the gap in evidence from implementation science research

on education in the global South, we also include indicative examples of studies throughout the systematic review that do not explicitly use the term implementation science (and so are not identified through the systematic searches) but could be considered to integrate its underlying principles in their research design and analysis.

2. Methodology

This systematic review explores GEDSI in implementation science research using a rigorous systematic review approach, as defined by Gough et al. (2017). The review is guided by the overarching research question: **'How is GEDSI addressed in implementation science research, with lessons for education in the global South?'**

1 Conceptual Framework: GEDSI assessment

To assess GEDSI within the publications identified, we adapted the WHO Gender Responsive Assessment Scale. This tool enables us to evaluate GEDSI integration across projects along the following spectrum:

- **GEDSI Unequal Research (-1):** Reinforces and potentially exacerbates gender and social inequality.
- **GEDSI-Omitting Research (0):** Ignores GEDSI considerations in the design, conceptualisation, process, and outcomes of the research.
- **GEDSI-Aware Research (1):** At best, collects and analyses data disaggregated by GEDSI variables.
- **GEDSI-Sensitive Research (2):** Intends to address GEDSI issues but does not challenge existing power dynamics.
- **GEDSI-Transformative Research (3):** Places GEDSI at the core of the design, aiming to transform harmful norms and foster equitable power relationships.

For this assessment, we focus on the following dimensions:

1. The design of research.
2. Data collection and analysis processes.
3. Diversity within the research team composition.

Diversity within the research team composition is critical for ensuring that multiple perspectives, lived experiences, and forms of expertise inform the research, thereby strengthening both its relevance and its equity focus. For each of these three dimensions, a score of 0 or -1 is considered low, score of 1 is considered moderate and a score of 2 and above is considered high.²

² With respect to diversity within the research team composition, projects with teams that include both female representation and in-country representation (ie team members from the country where the project is based) receive a score of 2 ie 'GEDSI-sensitive research.' Projects with teams that have either female representation or in-country representation are scored 1. Projects with no consideration of either receive a score of 0. For a project to be scored a 3, we require more information on the gender and social inclusion expertise of its PIs.

2 Search Strategy

The literature search employed the systematic planner framework outlined by Gough (2019). Key concepts were identified and translated into primary and secondary search terms.

Search Terms and Synonyms

Primary search terms included:

- Education AND "social inclusion" AND "implementation science"
- Implementation research AND education
- Implementation science AND education
- Gender AND implementation research
- Inclusion AND "implementation science"
- Inclusion AND "implementation research"
- Diversity AND "implementation science"
- Diversity AND "implementation research"
- Equity AND "implementation science"
- Equity AND "implementation research"

With the use of the primary search words, predominantly studies focusing on health equity, transgender inclusion, and anti-racism in the Global North were identified. Subsequently the search also included terms for 'Education' and

- Girls AND "Implementation Research"
- Girls AND "Implementation Science"
- Disability AND "Implementation Science"
- Disability AND "Implementation Research"
- Inclusion AND "Implementation Science"
- Inclusion AND "Implementation Research"

Similarly, search terms related to the other markers of social inclusion mentioned above, such as ethnicity and implementation research, were also utilised. The terms were adjusted iteratively when search results were limited or overly broad, for example, replacing 'gender' with 'girls' or 'gender equity' with 'gender representation' or 'intersectionality'.

Databases and Search Scope

The search was conducted across the following databases:

- SCOPUS
- Web of Science
- PubMed
- Google Scholar

Grey literature, such as policy reports, was identified using the pearl growing method, where key references from initial relevant sources were mined to discover additional documents and reports that met the search criteria. We also reviewed the references in the What Works Hub for Global Education implementation science

review (What Works Hub for Global Education, 2024). However, none of these met our criteria of incorporating both **implementation science principles and a focus on education with GEDSI considerations** (see Box 2).

Box 2: GEDSI in What Works Hub for Global Education implementation science review

The What Works Hub for Global Education implementation science review, including 124 references, does not systematically engage with GEDSI issues directly within the report itself. Upon further analysis of the references, we found that some studies engage with GEDSI issues but do not systematically apply an implementation science approach. References included that relate to GEDSI include:

- **Evans and Yuan (2022):** Analyses educational interventions across multiple countries, highlighting gender disparities. However, it does not use an implementation science framework.
- **Sabates et al. (2021):** Examines the cost-effectiveness of an education programme for marginalised girls in Tanzania. While it considers equity, it does not adopt an implementation science approach explicitly (box 9 provides more details on this study).
- **Aiyar et al. (2021):** Explores governance and education reform in Delhi, touching on policy implementation while examining equity efforts through improved learning and support for disadvantaged students. However, it lacks structured implementation science analysis.

Other studies in the review apply an implementation science approach but do not focus on education:

- **Sukhtankar et al. (2022):** Investigates police reforms to improve responses to women in India, using an implementation science lens. However, as it does not focus on education, it does not meet our criteria.

As these studies do not fully meet our inclusion criteria, they are excluded from our systematic review.

Source: What Works Hub for Global Education, 2024.

We also reviewed the Building Evidence in Education (BE2) systematic review on implementation research in education, including the references in the systematic review. These also did not meet our criteria for selection as explained in Box 3.

Box 3: GEDSI in BE2 systematic review

The BE2 Systematic review on Using Implementation Research in Education highlights several promising initiatives that integrate GEDSI into education programmes. However, these examples were not included in our systematic review because of issues with terminology and availability of evidence – some of these examples are given below:

- **SOMGEP-T Case Study – The Somali Girls’ Education Promotion Programme – Transition:** This case study demonstrates how research can improve learning outcomes for marginalised girls in Somalia by strengthening Girls’ Empowerment Forums that focus on developing girls’ agency and building supportive networks. However, this project’s evaluation report was not included as it does not explicitly adopt the implementation science terminology.
- **UNICEF’s Digital Learning for Marginalised Groups:** This initiative applies participatory research approaches to enhance the accessibility and effectiveness of digital learning solutions for marginalised children, including girls and children with disabilities. Evaluation reports and/or academic outputs on this initiative are not available.
- **USAID’s ACCELERE! Activity in Early Grade Reading:** This project supported the Ministry of Education in Democratic Republic of Congo to improve teaching and learning in targeted classrooms by conducting teacher and administrator training in early-grade reading methods in some cases, leading to narrower gender gaps. Evaluation reports and/or academic outputs on this initiative are not available.

Source: Alison, 2023.

Additionally, we adopted a snow-ball approach to identify selected studies that could be considered as implementation science research in terms of their design and analytical approach but do not use this term, and that have a strong GEDSI approach. These examples were identified through our own experience as researchers working on implementation science and GEDSI, as well as through consultations with experts, including the What Works Hub for Global Education team. As these examples are not identified through the systematic searches, we include an overview in reflective boxes throughout the systematic review. These examples are intended in particular to demonstrate lessons from their strong GEDSI integration. However, as a key objective of the paper is to identify the extent to which research that identifies itself as focusing on implementation science adopts a GEDSI approach, this remains the focus of the paper overall.

One example of studies that potentially adopt an implementation science approach while not using the terminology was the Girls’ Education Challenge. Both authors of this paper have been a part of these evaluations which combined rigorous methodological and analytical approaches with real time implementation for a consortium of projects spanning 41 projects in 17 countries over 12 years, as outlined in Box 4.

Box 4: Girls’ Education Challenge: Iterative research design, analysis, and stakeholder engagement

The Girls’ Education Challenge (2012–2025), funded by FCDO, supported 41 projects across 17 country contexts in sub-Saharan Africa and South Asia and impacted the lives of over 1.6 million of the most marginalised girls. Independent evaluations of the programme employed mixed-method design, using large scale quantitative data while also embedding participatory approaches with girls,

communities, and local organisations. The approach used showed particular strengths in how to adopt an implementation science approach with a GEDSI lens.

- **Iterative use of data:** Implementing partners and evaluators collaborated to generate evidence on barriers and enablers of girls' learning, retention, and transition and other life outcomes such as aspirations and agency, using findings to adapt programme strategies across phases.
- **Range of methods including quantitative and participatory:** Many evaluations incorporated multiple methods such as quasi-experimental alongside girls' and community voices through interviews, focus groups, participatory methods and workshops such as river of life and photovoice, ensuring that data reflected lived realities.
- **Equity-focused analysis:** Evaluations went further than disaggregation of data to also look at intersectionality of disadvantaged by gender, poverty, disability, conflict, rurality and other markers of exclusion, allowing identification of which sub-groups benefited most and where inequities persisted. By combining quantitative and qualitative data, it was able to understand the extent to which programmes tackled the root causes of exclusion, and how and why they were or were not successful.
- **Stakeholder engagement:** The evaluations included the perspectives of the girls themselves as well as the community stakeholders around them, such as mothers' and fathers' groups, girls' and boys' clubs', school management committees, and local volunteers and mobilisers to understand changes in community norms and power structures. They also engaged with key government officials at local and national levels to understand the wider policy environment which could support or hinder progress.
- **Diverse research teams:** Evaluations drew on partnerships between international and in-country researchers, building contextual knowledge into study design and interpretation.

The GEC demonstrates the benefits of large-scale programmes adopting implementation science principles to provide rigorous evidence, feedback loops, participatory design, and contextual adaptation with GEDSI principles.

Inclusion and Exclusion Criteria

Table 1 presents the inclusion and exclusion criteria applied in this systematic review.

Table 1: Inclusion and exclusion criteria

Criteria	Inclusion	Exclusion
Topic Relevance	Focused on gender equality, disability and social inclusion, and characteristics related to this, within	Did not address gender or social inclusion, or related characteristics, explicitly.

	implementation science or related fields.	
	Incorporates implementation science principles.	Not related to implementation science
	Linked to policy, practice or theory.	Lacked clear application to theory, policy or practice.
	Linked to education.	Not linked to education.
Time Frame	Published between 2010 and 2024.	Published before 2010.
Language	Available in English.	Not available in English.
Research Design	Primary research studies, systematic reviews or meta-analyses, conceptual frameworks.	Blogs, newspaper articles, academic dissertations, social media posts etc.

Data Screening and Extraction

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009) were used to screen references. The following steps were followed:

- **Title and Abstract Screening:** Retrieved titles and abstracts were examined for relevance.
- **Full-Text Review:** Where abstracts did not provide enough information, the papers were downloaded and their methods, results, and inclusion/exclusion criteria were reviewed.
- **Data Extraction:** Relevant information, including context, study design, instruments used, and processes and outcomes related to GEDSI, was extracted.

3 Data Synthesis

Data was synthesised focusing on four key aspects:

- **Geographical Focus:** Studies were examined for their geographic distribution (Global North vs Global South), identifying gaps in representation.
- **Methods:** The synthesis reviewed methodologies used in implementation science research.
- **GEDSI Assessment:** The extent to which studies incorporated GEDSI principles, including intersectionality.

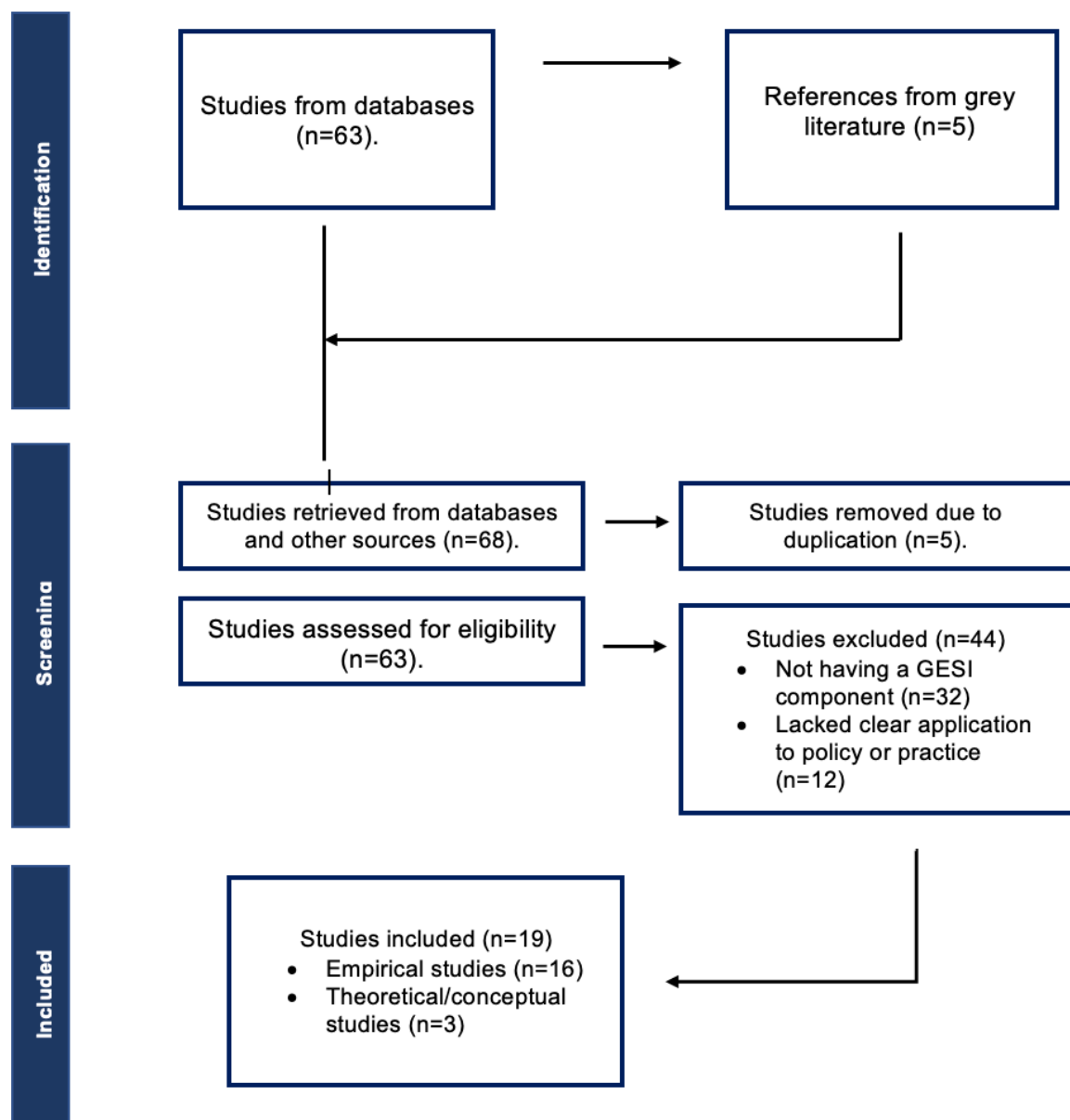
3. Overview of studies identified

1 Included studies

A total of 68 publications were identified through database searches and other sources such as google searches and using the pearl growing methods and underwent an initial screening of titles and abstracts. After removing five duplicate

studies, 63 unique publications remained. These publications underwent full-text review, resulting in the exclusion of 32 publications that lacked references to GEDSI and 12 that did not demonstrate a clear application to policy or practice. Ultimately, 19 publications focused on education were selected for the systematic review. Of these, 16 were empirical studies evaluating education interventions using implementation science approaches, while three were focused on theoretical or conceptual frameworks, including a specific emphasis on GEDSI considerations. In total, only two of the 19 empirical articles were published between 2010 and 2015, with the remainder appearing after 2015, indicating that implementation science research has gained traction in education in more recent years. A PRISMA flow diagram (Page et al, 2020) of the screening and selection process is presented in Figure 1.

Figure 2. PRISMA flow chart



2 Theoretical Studies Addressing GEDSI in Implementation Science

Initially, our search revealed three theoretical studies focusing specifically on integrating GEDSI into implementation science within the field of education. Building on these findings, we expanded our search strategy through citation tracing to capture transferable reflections across other relevant sectors. In total, 18 additional theoretical studies were identified: nine focused on implementation science in health, two on anti-racism, two on conflict, and five on general implementation science principles. Since these studies are largely theoretical, they do not focus on particular regions but instead address concepts and frameworks that are applicable across diverse settings. Several studies explicitly addressed dimensions of GEDSI, including gender, race, structural inequities, and broader social determinants, while others concentrated on fostering equity more generally.

Frameworks Incorporating GEDSI

The three education-focused publications highlight the need for specifically adapting frameworks to the challenges of education systems (Cook et al, 2019; Cook and Odom, 2013; Chen et al, 2024). These studies demonstrate that addressing the implementation gap in education requires frameworks to integrate GEDSI effectively. Despite this, structured frameworks that systematically embed GEDSI into education implementation science remain limited.

Beyond education, studies in other sectors (particularly health) incorporate GEDSI into implementation frameworks. Groom et al. (2024) developed the Digital Health Equity-Focused Implementation Research (DH-EquIR) model, which blends digital health interventions with equity-focused strategies across five phases: assessing health disparities, planning culturally inclusive programmes, designing user-centred digital tools, implementing equitable access strategies, and evaluating outcomes. Similarly, Baumann and Cabassa (2020) integrate social determinants such as housing and economic stability into health implementation models to tackle systemic inequities. Shelton et al. (2021) call for the integration of structural racism into implementation frameworks, while Hassen et al. (2021) outline principles for embedding anti-racism in healthcare interventions, such as accountability mechanisms and long-term partnerships with marginalised communities.

Methodological Innovations for Embedding GEDSI

Studies in education identify that methodological advancements are essential for embedding GEDSI in ways that reflect real-world challenges. Education-focused studies by Cook et al. (2019), Cook and Odom (2013), and Chen et al. (2024) highlight the need for adapting existing strategies and developing new, context-specific metrics and participatory approaches to ensure equitable outcomes.

In other sectors, studies focused on methodological innovations for integrating GEDSI into implementation science research. Brownson et al. (2021) highlight the importance of equity-relevant metrics and tailored interventions that address social determinants such as health, education and economic stability. Their work underscores the need for anti-racism and anti-bias training, co-development of strategies with marginalised communities, and context-specific adaptations. McNulty et al. (2019) emphasise partnership-driven approaches and three

methodological paradigms, using existing data, inclusive research design, and studies focused exclusively on disadvantaged groups, to advance both scientific and health equity.

Community Engagement for Achieving GEDSI

Studies in education identify that community engagement is central to embedding GEDSI. Cook et al. (2019), Cook and Odom (2013), and Chen et al. (2024) highlight the role of schools, students and parents in co-designing and sustaining inclusive interventions. Their research illustrates how participatory approaches help bridge implementation gaps and create more equitable learning environments.

In other sectors, studies highlight the role of community engagement in advancing GEDSI. Pinto et al. (2021) reviewed 74 dissemination and implementation (D&I) models, identifying capacity building and leadership as essential to fostering inclusivity, even when equity factors like gender or disability were not explicitly referenced. Ramanadhan et al. (2018) promote participatory approaches in cancer prevention, underscoring the need for stakeholder involvement in addressing health disparities. While valuable, these studies largely focus on social determinants without isolating gender or other intersectional variables.

Greater Focus on Intersectionality needed

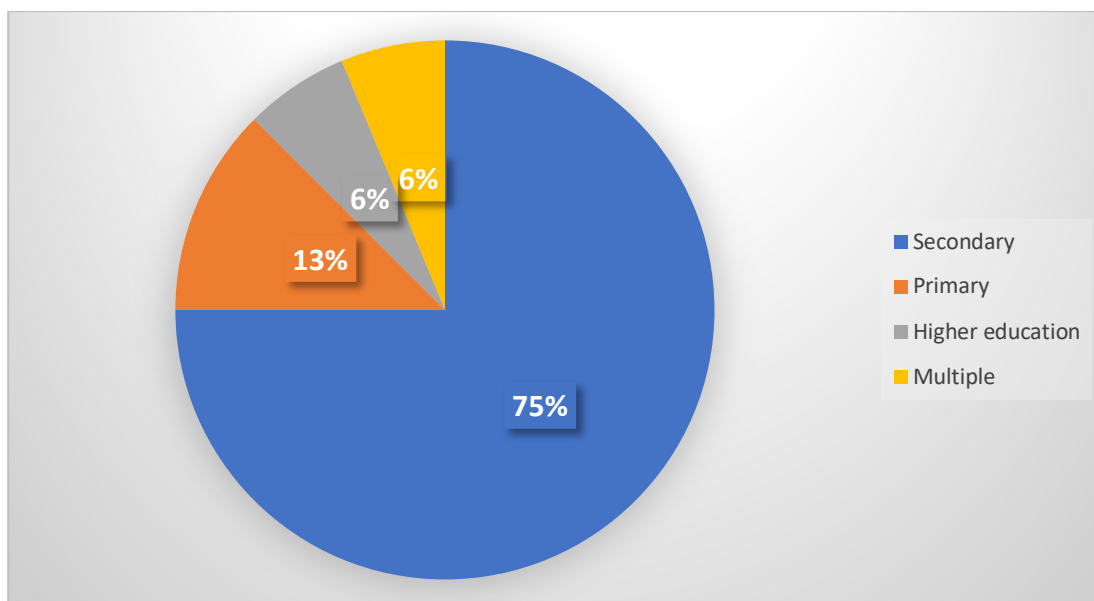
Current implementation science frameworks acknowledge GEDSI but do not fully address the intersectionality of gender with other identity factors. Cook et al. (2019), Cook and Odom (2013), and Chen et al. (2024) highlight GEDSI integration in schools but reveal gaps in how gender intersects with race, economic status, and other dimensions of identity. While social inclusion and equity are increasingly recognised, more nuanced frameworks are needed to capture these complex interactions.

Studies from other sectors also show gaps in intersectional analysis. While Shelton et al. (2021) and Hassen et al. (2021) examine racial and structural inequities, they provide limited discussion of gender-specific dynamics. Theobald et al. (2018) emphasise the role of implementation research in bridging the know-do gap in global health by linking research and practice in real-world settings. They highlight partnerships, multidisciplinary approaches, and case studies from low- and middle-income countries to illustrate how implementation research can inform policy, strengthen health services, empower communities, and ultimately improve health outcomes.

3 *Key characteristics of empirical articles*

The systematic review analysed a total of 16 empirical articles consisting of 15 journal articles and one book chapter. Out of these 16 empirical articles, 12 focus on secondary education, two on primary education, one on higher education and one encompassing multiple levels of education (Figure 3).

Figure 3: Thematic breakdown of empirical articles



The education focused articles focused on a variety of GEDSI variables. Gender was most common, with some on conflict, race/ethnicity, poverty, rurality and religion. Disability was only addressed in three of the 16 studies (Figure 4). Some publications include more than one GEDSI variables such as gender and race, gender, and poverty etc, reflecting intersectionality of marginalising factors.

Figure 4: Education focused publications by GEDSI variable



The vast majority of studies identified are based on the Global North. 10 of the 16 education studies are focused on the United States (Table 2). One study was focused on interviewing international development experts based in a variety of regions and is therefore considered global, hence it is not included in the table below (Dowd, 2024). Only one study was identified in sub-Saharan Africa, which was focused on South Africa (Pike et al, 2023). No studies on education were identified from South Asia.

Table 2: Geographical concentration of education focused articles

Region	Number of articles	Countries	Number of articles
North America	10	United States	10
Sub-Saharan Africa	1	South Africa	1

		United Kingdom	1
Europa and Central Asia	2	Italy	1
East Asia and the Pacific	2	Australia	2

Publications in other sectors were also predominantly in the Global North, although there was some coverage in the Global South. These studies were focused on countries such as South Africa, Kenya, Burkina Faso, Tanzania and South Sudan in sub-Saharan Africa, Bangladesh in South Asia, Columbia, Jordan and Lebanon in Middle East and North Africa, and Ecuador in Latin America.

Methodologies adopted

Qualitative Methods

In education-focused research, qualitative methods were employed to gain rich, context-specific insights in eight out of 16 studies. For example, one study investigating LGBTQ-supportive practices in New Mexico high schools used an iterative coding approach to analyse annual interviews with school professionals, revealing how outer-context determinants, such as heteronormativity, policy influences, and crisis events, affect the uptake of supportive practices (Shattuck et al, 2024). Other education-based studies examined topics like school meal standards in rural high schools and applied the Consolidated Framework for Implementation Research (CFIR) from a race-conscious perspective, relying on in-depth interviews and team coding to explore nuanced implementation challenges and opportunities (Asada, Mitric and Chiqui, 2020).

In publications from other sectors, qualitative methods were prominent. For instance, Jackson-Gibson et al. (2021) investigated barriers and facilitators to PrEP uptake in Kenya by conducting interviews and focus group discussions with girls and young women enrolled in the DREAMS Initiative at a community-based organisation in Kisumu, identifying peer mentors and safe spaces as key enablers while highlighting stigma and resource shortages as critical barriers.

Quantitative Methods

Quantitative methods were used in four out of 16 education-focused studies to measure outcomes and assess intervention impacts. For instance, the Carbon TIME project analysed a large dataset of 59,654 student assessments collected over four years from diverse schools, applying design-based implementation research methods to demonstrate significant improvements in student achievement linked to curricular changes and professional development initiatives (Lin et al, 2022). Another study by Cook et al. (2015) examined a supportive beliefs intervention within a multi-tiered system of supports (MTSS) across 62 elementary schools in five districts, assessing how educator beliefs influenced the implementation of evidence-based practices targeting students' social, emotional and behavioural needs.

In non-education publications, quantitative methods featured prominently. For example, Islam, Sanin, and Ahmed (2017) designed a pre- and post-test evaluation, complemented by cross-sectional surveys and service statistics reviews, to compare changes in community awareness and childhood tuberculosis case detection.

Mixed Methods

Mixed methods approaches were adopted in four out of 16 studies, integrating both quantitative and qualitative techniques. In education, one notable study on motor competence in youth combined self-report questionnaires from 18 teachers with focus group discussions, using descriptive statistics to summarise the questionnaire data and qualitative analysis via NVivo 11 to explore the programme's sustainability three years post-intervention (Lander et al, 2020). Another mixed methods study, an evaluation of the SKILLZ comprehensive sexual education programme in Cape Town, South Africa, combined cluster randomised controlled trial design with qualitative interviews and focus groups among 40 secondary schools (Pike et al, 2023). The study examined both intervention effectiveness and the contextual factors influencing implementation and is detailed in box 5.

Box 5: Contextual evaluation of SKILLZ for Girls in Cape Town, South Africa

Pike et al. (2023) evaluated SKILLZ, a sport-based sexual and reproductive health education programme for adolescent girls, through a cluster randomised controlled trial across 40 secondary schools in Cape Town. The intervention combined physical activity with facilitated discussions on sexual health, relationships, and gender norms, delivered by young female 'caring coaches' recruited from local communities.

Community engagement and GEDSI sensitive research

- The evaluation measured both biomedical outcomes (HIV, HSV-2, and pregnancy) and social/behavioural outcomes, including empowerment, gender norms, self-concept, and social support.
- The evaluation worked with provincial and district education authorities, school principals, and teacher liaisons to secure participation and support implementation.
- A Youth Community Advisory Committee was convened, and pilot activities with adolescent learners informed adaptations such as including yoga and stretching alongside football.
- Local 'caring coaches' from participating communities delivered the programme, and qualitative data collection (focus group discussions and interviews) engaged learners, coaches, and teachers to capture community perspectives.

This evaluation demonstrates how a randomised trial incorporated community engagement and attention to GEDSI in both programme delivery and the outcomes assessed.

Source: Pike et al., 2023.

In non-education publications, mixed methods were also adopted. For example, Kwon et al. (2017) used surveys with community coalition partners to assess health interventions in Asian American faith-based organisations, while Caldwell (2012) evaluated bilingual literacy interventions through a combination of randomised

controlled trials, surveys, literacy assessments, and focus groups enhanced by digital storytelling.

Community-based participatory research and human-centred design approaches were adopted to enhance GEDSI inclusion in some studies. Out of the 16 education-focused studies, one explicitly employed a community-based participatory research approach (Pike et al, 2023). Additionally, in the publications from other sectors, a study on the Family Navigation service for transgender youth demonstrated that by incorporating feedback from transgender youth and their families, training programmes for community health workers were tailored to meet the specific needs of this population, ensuring culturally competent care (Barnett et al., 2023).

Thematic focus of the research studies

The 16 studies in the field of education highlight key disparities in school access and student retention. Asada, Mitric and Chriqui (2020) examined the implementation of school meal standards in rural high schools across seven US states, motivated by concerns that rural schools lag behind urban counterparts. They identified key challenges, including negative community food environments and limited staff capacity, and highlighted opportunities such as co-ops, state technical assistance, and external partnerships to strengthen access to health-promoting nutrition environments. Balenzano et al. (2019) evaluated *Storie in gioco* (SIG), a dropout-prevention programme for at-risk students in Italy, using a mixed-methods design (two-group pre/post randomised controlled trial design with 230 students plus stakeholder focus groups/interviews). Cook et al. (2015) highlighted the importance of educator beliefs in implementing multi-tiered system of support (MTSS), with a focus on their perceptions of students with disabilities, finding that supportive beliefs enhanced fidelity and outcomes.

Studies from other sectors emphasised equity, accessibility and scalability of interventions, often targeting vulnerable populations. Schwitters et al. (2021) evaluated the Baby Shower faith-based intervention in Benue State, Nigeria, finding that community events combining prayer, education, music, safe delivery kits and on-site HIV testing linked 93% of HIV-positive pregnant women to antiretroviral therapy and successfully reached many not enrolled in antenatal care. Similarly, Sami et al. (2018) explored neonatal care in South Sudan, identifying task-shifting and community acceptance as enablers for improved service delivery. Panter-Brick et al. (2018) developed a culturally grounded resilience measure for Syrian refugees in Jordan, highlighting the importance of individual, family, and community-level dimensions.

Unlike studies focused on education, which did not incorporate implementation science frameworks, health-based studies incorporated determinant implementation science frameworks to systematically evaluate interventions, providing a more comprehensive understanding of implementation processes. This could be because comprehensive implementation science frameworks have yet to be developed in the field of education.

4. Applying the GEDSI Assessment Framework

We used the GEDSI assessment scale to assess GEDSI in the empirical studies, with attention to programme formulation and design, data collection and analysis, and diversity in team composition. This section highlights notable trends, strengths, and gaps across studies, along with quantitative assessments of their GEDSI integration levels.

Overall, the review found varying levels of GEDSI integration across studies. While two education focused studies demonstrated strong inclusion in programme design, data collection, and team composition, 14 showed only moderate or low consideration of equity and social inclusion. Full details of these ratings are provided in the annex (separately attached).

1 Programme Formulation and Design

Of the 16 education focused studies, three studies achieved high GEDSI ratings in programme formulation and design (Shattuck et al, 2024; Willging, Green and Ramos, 2016; Pike et al, 2023). These interventions demonstrated a strong commitment to addressing systemic barriers and power dynamics through context-sensitive and inclusive approaches. The design of the interventions and evaluations in themselves incorporated GEDSI considerations, for instance by evaluating outcomes based on GEDSI variables and focusing on changing existing power dynamics.

Those that scored highly in terms of programme formulation and design tended to focus on changing community norms and power structures. For instance, Shattuck et al (2024) focused on LGBTQ-supportive evidence-informed practices (EIPs) in New Mexico high schools by changing community and within-school attitudes and power structures. Willging, Green, and Ramos (2016) focused on implementing school nursing strategies to reduce suicide risk among LGBTQ youth in U.S. high schools. This mixed-methods study, conducted through a cluster randomised controlled trial in 40 high schools, examines the impact of the intervention on suicidality, depression, substance use, bullying and truancy among LGBTQ students. These interventions tackled structural discrimination and heteronormative norms, ensuring that school environments were conducive to the well-being of LGBTQ youth. Finally, Pike et al (2023) focused on changing power dynamics to foster comprehensive sexual education (CSE) in schools in Cape Town, South Africa – however, the programme suffered from low uptake.

Box 6 provides an illustration from education-based evidence that applies implementation science research principles (although does not use this term) alongside strong GEDSI considerations.

Box 6: Using implementation science principles and GEDSI considerations in a randomised controlled trial on gender norms in schools in Haryana, India

Dhar, Jain and Jayachandran's (2022) study evaluated a school-based programme in Haryana, India, using a randomised controlled trial (RCT) in 314 government secondary schools. The programme consisted of bi-weekly 45-minute sessions over the course of two years, led by trained community facilitators in

government secondary schools. The sessions focused on gender equality, roles within the household, educational and career aspirations for girls and boys, and the social acceptability of gender-based restrictions. Activities included debates, games, and role-plays designed to encourage reflection and dialogue among adolescents.

How the design was GEDSI-transformative

- The intervention did not treat girls as a stand-alone group in need of support but deliberately engaged both girls and boys. This reflected an understanding that norms are enforced through relationships and shifting them requires engaging those who hold social power (boys) as well as those disadvantaged by it (girls).
- By centring classroom discussions on topics like mobility, education, and household labour, the programme directly addressed power structures within families and communities. Adolescents were encouraged to question who controls decision-making and why certain roles are deemed acceptable.
- The delivery model created a collective space for renegotiating norms. Through repeated debates and interactive activities, adolescents confronted the unequal expectations placed on boys and girls, making social hierarchies visible and contestable.

How the analysis was GEDSI-transformative

- Impacts were reported for both boys and girls, showing that boys' views shifted alongside girls'. This is significant because it demonstrates movement among those positioned to reinforce unequal power structures, not just those burdened by them.
- The evaluation tracked not only attitudes but also behaviours linked to power relations, such as participation in household chores and whether restrictions on girls' mobility changed. This helped to assess whether shifts in discourse were altering the lived distribution of power and responsibilities.
- A two-year follow-up demonstrated that many of the changes persisted, suggesting that adolescents had internalised new ways of thinking about gender hierarchies rather than temporarily adjusting their answers.
- Variation across schools highlighted how differences in fidelity and context influenced outcomes, offering lessons on how local social structures can either reinforce or undermine norm change.

Conclusion

Dhar, Jain and Jayachandran's (2022) evaluation of a school-based gender attitudes programme demonstrates how RCT methods can be harnessed within implementation science and GEDSI frameworks. Its design created safe and sustained opportunities for adolescents to reflect on power and norms, while its analysis tracked behavioural change, gender-differentiated impacts, and durability over time. Together, these features show how rigorous research can move beyond documenting inclusion to actively examining how unequal norms and power relations can be shifted.

Source: [Dhar, Jain, and Jayachandran \(2022\)](#)

Some studies that did not focus on education achieved high GEDSI ratings in programme design and formulation. The child marriage prevention programmes in Burkina Faso and Tanzania integrated innovative methods such as community dialogues and conditional incentives, which empowered local stakeholders to actively participate in designing solutions tailored to the needs of girls and young women (Erulkar et al., 2020). These programmes not only targeted the immediate challenges of child marriage but also addressed broader socio-economic inequities by promoting education and reducing generational poverty.

Eight education focused studies exhibited moderate GEDSI consideration. The motor competence programme in Australia, for instance, focused on promoting physical activity for adolescent girls but lacked mechanisms to challenge broader societal factors influencing participation, such as cultural expectations or accessibility barriers (Lander et al., 2020). It received a GEDSI rating of 1 for programme formulation and design as it primarily focuses on disaggregated data collection, targeting girls as a specific group, but does not address or challenge underlying power dynamics, structural inequities, or broader issues of inclusion and equity in its approach. Lin et al (2022) report quantitative findings from the Carbon TIME project, a design-based implementation research (DBIR) initiative focused on teaching carbon cycling across multiple scales in U.S. middle and high schools. It received a moderate GEDSI rating in programme design and formulation because, while it includes some equity considerations, such as analysing the impact of school demographic factors and student background, it does not explicitly integrate GEDSI principles into the intervention design.

Some non-education focused studies demonstrated moderate GEDSI consideration. Sami et al (2018)'s evaluation in conflict affected South Sudan includes some GEDSI considerations. It discussed neonatal morbidity and mortality and identified barriers to achieving optimal health outcomes, particularly in rural and underserved areas in South Sudan. While the study primarily focuses on maternal health and there was an element of gender hierarchies considered, the focus of the evaluation was health care workers and hospital staff and voices and experiences of women themselves.

Five education-focused studies received low ratings for GEDSI in programme formulation and design, along with two studies from non-education sectors. These studies collected disaggregated data along variables such as gender, socio-economic status but did not prioritise GEDSI considerations in the design of the interventions/evaluations. Hudson, Lawton, and Hugh-Jones (2020) used disaggregated data (along gender and socio-economic status) when identifying factors affecting the effectiveness of a whole school mindfulness programme in five UK secondary schools. However, GEDSI considerations were not built in the design of the intervention and/or its evaluation including considerations for instance in observing how factors such as gender and or socio-economic status impacts how mindfulness programmes are implemented in different UK schools.

Examples of studies that applied implementation science principles without explicitly using the term are BRAC Empowerment and Livelihood for Adolescents (ELA) Programme and Uganda Room to Read's Girls' Education Programme in Rajasthan, India, which illustrate how careful design choices can make interventions both scalable and GEDSI-transformative (see Box 7 and 8).

Box 7: GEDSI transformative research design: BRAC Empowerment and Livelihood for Adolescents Programme, Uganda

Bandiera et al. (2020) evaluated BRAC's Empowerment and Livelihood for Adolescents programme through a large-scale cluster RCT across 150 communities in Uganda. Beginning in 2008, the intervention provided adolescent girls aged 14-20 with two years of vocational skills training, life skills sessions on sexual and reproductive health, and a safe space to meet regularly with slightly older female mentors drawn from their own communities. Clubs were open five afternoons per week, allowing both school-going and out-of-school girls to participate.

Transformative design of the evaluation

- Cluster RCT: The evaluation randomly assigned 100 communities to receive ELA clubs and 50 as controls, enabling robust causal estimates of impacts across multiple dimensions of adolescent empowerment.
- Multidimensional outcomes: The study measured economic empowerment (eg self-employment, income-generating activities), control over the body (eg teen pregnancy, early marriage/cohabitation, unwanted sex), and aspirations and gender norms, capturing the programme's effects on interlinked sources of disadvantage.
- Contextual and behavioural analysis: The evaluation analysed heterogeneity by household context, schooling status, and community setting, and investigated spillovers to non-participants to understand how empowerment norms diffuse across communities.
- Integration of safe spaces and local mentors: The programme design positioned mentors from within communities and created protected adolescent clubs, recognising that safety, social pressures and norms around sexuality shape girls' ability to act on information and skills.
- The study found that most short-term shifts in gender attitudes faded by four years, but norms around ideal ages for marriage and childbearing showed sustained, long-term improvement.

This design demonstrates how combining vocational skills, life skills, and adolescent safe spaces, and evaluating them rigorously over multiple years, can produce transformative and sustained improvements in girls' economic and bodily autonomy in highly constrained settings.

Source: [Bandiera, et al \(2020\)](#)

Box 8: GEDSI transformative research design: Room to Read Girls' Education Programme in Rajasthan, India

Edmonds, Feigenberg and Leight (2020) evaluated Room to Read's Girls' Education Programme in Rajasthan through a cluster RCT across 119 government schools in Ajmer district. Beginning in 2016, the intervention provided two years of bi-weekly life skills classes and monthly mentoring sessions to girls in grade six, delivered by locally recruited female mentors known as Social Mobilisers.

Transformative design of the evaluation

- **Cluster RCT:** The evaluation used a cluster RCT design to generate robust causal evidence on the programme's effects across schools and communities.
- **Gendered outcomes:** Beyond enrolment and retention, the study measured outcomes linked to gendered social norms, such as decision-making, aspirations, and agency, to capture mechanisms that influence girls' schooling.
- **Attention to timing:** Data collection was aligned with the transition to secondary school, a point at which pressures related to early marriage and dropout are most acute, allowing the evaluation to assess how interventions intersect with critical moments in girls' lives.
- **Contextual analysis:** The evaluation examined how effects varied across household and community settings, recognising the influence of restrictive norms and highlighting how these shape opportunities differently for girls.

This design demonstrates how embedding locally led, norm-focused interventions into school structures can make inclusion both transformative and scalable.

Source: [Edmonds, Feigenberg and Leight \(2020\)](#).

2 Data Collection and Analysis

High GEDSI ratings in data collection and analysis were achieved in two of the 16 education focused empirical studies. These interventions effectively used disaggregated data along multiple aspects of inclusion to highlight disparities and inform programme improvements. For example, Willging, Green and Ramos (2016) incorporates GEDSI considerations in data collection and analysis by focusing on the specific needs of LGBTQ adolescents, a historically marginalised group. The study design integrates both qualitative and quantitative methods, including in-depth interviews, focus groups, and population-based surveys. These methods allow for capturing diverse perspectives and experiences of LGBTQ adolescents, their peers, and school staff. Additionally, the inclusion of school-level and community factors in the analysis provides a broader understanding of the structural and systemic barriers impacting the implementation of evidence-based strategies.

Box 9 illustrates how rigorous quasi-experimental analysis, combined with cost data, can apply implementation science principles to integrating a strong GEDSI lens on cost-effectiveness.

Box 9: GEDSI transformative analysis on cost-effectiveness - CAMFED Tanzania

Sabates et al. (2021) evaluated CAMFED's secondary school programme in Tanzania using a quasi-experimental design combined with detailed cost data to assess both impact and cost-effectiveness. CAMFED's programme provided financial and material support to girls alongside peer-mentoring and life skills support, aiming to improve retention and learning for marginalised girls in government secondary schools.

Transformative analysis

- **Equity and targeting:** The study explicitly focused on whether targeting the most marginalised girls can be cost-effective. It showed that, while the per-student cost was higher for the most marginalised girls, the resulting gains in learning demonstrated that equity and cost-effectiveness can be aligned.
- **Spill-over effects:** Analysis showed positive impacts not only for direct beneficiaries but also for other girls and boys in the same schools, particularly in retention and learning outcomes.
- **Disaggregated analysis:** Results were disaggregated by gender and beneficiary status, showing gains not only for targeted marginalised girls but also for other girls and boys in intervention schools.
- **Methodological contribution:** By combining quasi-experimental impact evaluation with cost data, the study advanced methods for assessing cost-effectiveness with an equity lens.
- **Policy relevance:** The findings suggest that investing in marginalised girls can yield system-wide benefits and provide evidence that equity-oriented programmes need not come at the expense of efficiency. The findings have fed back into CAMFED's programming, and informed other related programmes.

This analysis demonstrates how rigorous evaluation can integrate an equity lens into cost-effectiveness studies, producing evidence that directly informs debates on reaching the most marginalised at scale.

Source: Sabates et al 2021.

Out of the studies that did not focus on education, some demonstrated high GEDSI consideration for data collection and analysis. For example, Woodward et al (2019) integrated a GEDSI perspective in data collection and analysis by focusing on healthcare disparities among Black, rural-dwelling, older adult veterans within the U.S. Department of Veterans Affairs system. Semi-structured interviews captured experiences of racial discrimination, stigma, and rural inequities, reflecting power dynamics that affect healthcare access and treatment uptake. The analysis utilised the Health Equity Implementation Framework to identify barriers and facilitators across multiple levels, including individual, provider, and system contexts, with a particular emphasis on how structural inequities shape patient-provider interactions and access to care. While the study's primary focus was on race and rurality, the findings indirectly address broader GEDSI concerns by highlighting systemic inequities and their impact on healthcare outcomes.

Nine education-focused studies demonstrated moderate GEDSI considerations in data collection and analysis. These articles, while addressing specific dimensions of inclusion, such as LGBTQ youth in schools in the United States, did not incorporate disaggregated data across multiple intersecting levels of inclusion. By failing to account for factors such as socio-economic status, ethnicity, disability, or geographic location, the analyses overlooked how broader power dynamics shape access to and outcomes of these interventions. For instance, Lander et al. (2020) examined the sustainability of a motor competence programme for adolescent girls in Australia, finding it continued three years post-intervention due to curriculum alignment, observed improvements, and programme demand. While the study demonstrated strong sustainability, it did not explore whether impacts varied across different sub-groups of girls, limiting insights into broader equity considerations.

A number of the non-education focused studies exhibited moderate GEDSI considerations in this category. For instance, Asrade et al (2021) collected data on factors affecting immunisation service delivery during and after conflict among internally displaced communities in Northwest Ethiopia with displacement and conflict being important social exclusion variables integrated in the design itself of the study. However, the data was not disaggregated according to other demographic factors such as gender, disability etc. Another example is Birdthistle et al's (2018) evaluation of the DREAMS initiative in Kenya, South Africa and Zimbabwe, which incorporated some GEDSI considerations but lacked a comprehensive focus on structural power dynamics. While the evaluation employs community mapping and participatory methods to understand the intervention's reach and uptake, the primary focus remains on the impacts of the programme on adolescent girls and young women (AGYW). There is little emphasis on interrogating the broader societal structures or systemic inequities contributing to AGYW's vulnerabilities. Additionally, while gender-disaggregated data is collected, the evaluation does not explicitly challenge existing gender norms or power hierarchies, indicating limited incorporation of transformative GEDSI approaches. It also focuses on gender-disaggregated data to assess impacts on adolescent girls and young women (AGYW), but it does not extend to disaggregation by other critical variables of exclusion, such as socioeconomic status, disability or ethnicity.

Five education focused studies scored low on GEDSI consideration in data collection and analysis. These studies did not collect data disaggregated by GEDSI variables or focus on impacting existing power dynamics through the data collection. For instance, Dowd (2024) employed a qualitative methodology to explore the barriers and facilitators of equity-focused dissemination and implementation (D&I) practices. The study conducted interviews with sixty-three international education stakeholders from government, academia, think tanks, local and international non-governmental organisations, multi- and bi-laterals and foundations but without considering aspects such as gender and Global South representation in the study design, the collection and analysis of data.

The evaluations of a negotiation skills training programme in Zambia and the Adolescent Girls Empowerment Programme (AGEP) in Zambia illustrate how data analysis can apply implementation science research principles in a GEDSI-transformative way (see Box 10 and 11).

Box 10: GEDSI transformative research analysis – Negotiation Skills Training for Adolescent Girls, Zambia

Ashraf et al. (2020) evaluated a negotiation-skills programme for eighth-grade girls in Lusaka through a multi-arm cluster RCT across 41 schools. The intervention taught girls how to articulate their interests, recognise parental constraints, and identify mutually beneficial solutions. The study followed participants for three years to assess schooling and behavioural outcomes.

Transformative analysis

- **Behavioural mechanisms:** The evaluation measured concrete behaviours, parent-daughter cooperation, and decisions in a lab-in-the-field investment game, allowing researchers to directly test whether negotiation skills shifted real decision-making dynamics within households.
- **Long-term follow-up:** Administrative and survey data were collected over three years, showing that the negotiation arm produced cumulative gains, particularly at the transition to secondary school when parental decisions are most decisive.
- **Intersectional lens:** The analysis incorporated multiple intersecting variables, including academic ability, age, household socioeconomic status, ethnicity, and family structure. Analysis showed that benefits were largest for higher-ability girls who were most at risk of leaving school.
- **Norms and household power:** By examining how girls and parents behaved in joint-decision settings, the study analysed norms of obedience, bargaining, and cooperation, showing how improved communication expanded the space for girls' educational advancement.

This evaluation illustrates how rigorous, mechanism-focused research can assess whether interventions shift intra-household power, who gains most, and why, aligning closely with GEDSI-transformative principles. However, for an implementation science approach, there is a need to assess the implications of this programme for going to scale given only 41 schools were included in the evaluation.

Source: [Ashraf et al \(2020\)](#).

Box 11: GEDSI transformative research analysis – Adolescent Girls Empowerment Programme (AGEP), Zambia

Austrian et al. (2020) evaluated the Adolescent Girls Empowerment Programme (AGEP) in Zambia through a large cluster RCT that followed over 4,000 girls across multiple provinces. The intervention combined weekly girls' groups led by trained female mentors with health vouchers and savings accounts, aiming to strengthen girls' agency, health and economic resilience.

Transformative analysis

- **Behavioural and attitudinal outcomes:** The evaluation tracked not only attitudes but also concrete behaviours, including use of health services, savings practices, and school progression, connecting shifts in empowerment to lived changes.
- **Long-term follow-up:** Surveys were conducted two and four years after the start of the programme, allowing researchers to test whether initial impacts persisted, weakened, or deepened over time, a rare feature in education-focused trials.
- **Equity lens:** Analyses disaggregated impacts by age cohort and schooling status, showing that benefits (such as improved health knowledge and savings) were greater for the youngest and most vulnerable participants.
- **Norms and power:** By examining outcomes such as marriage timing, fertility, and decision-making, the analysis engaged directly with the social norms and household power relations that constrain girls' educational trajectories.
- **Variation and context:** The RCT tested different combinations of programme components (girls' groups only, with health voucher, or with voucher and savings), providing insight into which mechanisms mattered most in shifting empowerment outcomes.

This analysis demonstrates how rigorous evaluation can move beyond average effects to ask whether interventions reshape norms and power, who benefits most, and whether gains endure, embodying GEDSI-transformative principles in research.

Source: [Austrian et al \(2020\)](#)

3 Diversity in Team Composition

Diversity in research teams

Diversity in team composition was a notable strength in one out of 16 education focused studies, scored with a high GEDSI rating in this dimension. The research team of this study on the implementation of a school-based sexual health education programme for adolescent girls in Cape Town, South Africa had both gender and in-country representation in its team (although given only one study was based in the Global South overall, diversity in the team was potentially less of a consideration). It was also the only one from the global South that met the criteria for inclusion in the systematic review.

10 education-focused studies demonstrated moderate diversity in team

composition. These studies often relied heavily on external researchers or facilitators, with minimal representation from the countries in which the research was being conducted. For example, the motor competence programme in Australia and mental health programmes in Ethiopia were primarily designed and implemented by external teams, which may have limited their ability to fully address local contexts and ensure inclusivity (Lander et al., 2020; Asrade et al., 2021). This lack of diverse representation in leadership roles highlights a recurring gap in many interventions.

Engagement with local stakeholders

Although we did not assign a separate rating for engagement with local stakeholders due to limited access to comprehensive information on this, many studies mentioned engagement with local community members and stakeholders. For example, the PrEP uptake study in Kenya incorporated peer mentors and actively involved community members in programme development and consisted of a study team with both gender representation and representation from Kenya (Jackson-Gibson et al., 2021).

The evaluation of the Educate Girls and the PanKH programmes in Rajasthan shows how community engagement and diverse teams can embody implementation science research principles in a GEDSI-transformative way (see Box 12 and 13).

Box 12: Community Engagement and Norm Change in the PAnKH Programme, Rajasthan, India

The Promoting Adolescent Engagement, Knowledge and Health (PanKH) programme aimed to expand girls' mobility, participation and wellbeing in highly restrictive rural settings. Implemented with adolescent girls aged 12–19, it combined facilitated Girl Groups with sports activities to strengthen confidence, agency, and life skills. A second version added community-wide 'Call for Action' campaigns designed to challenge norms around girls' movement, safety and early marriage. The programme was evaluated through a three-arm cluster randomised controlled trial across 90 communities.

Community engagement and diversity

- **Girl-led public engagement:** Girls participating in PAnKH planned and led community events that brought together parents, extended family members, and local leaders. These events created shared spaces to discuss issues such as mobility, safety and educational aspirations.
- **Engaging norm-enforcing actors:** The Community Campaigns included those who typically enforce social expectations, fathers, elders and influential community leaders, supporting wider acceptance of girls' participation in school and community life.
- **Reduced fear of sanctions:** Girls and their mothers in communities with the engagement component reported a lower perceived likelihood of violence, harassment or social sanctions for challenging gendered expectations, indicating a shift in the surrounding social environment.

This model illustrates how girl-led community engagement can reinforce programme effects by shifting local norms, strengthening girls' sense of safety, and creating supportive conditions for sustaining improvements in schooling and wellbeing.

Source: [Andrew et al \(2022\)](#)

Box 13: Educate Girls in Rajasthan, India – Community volunteers and research partnerships

The Educate Girls programme in Rajasthan, evaluated through a cluster randomised controlled trial as part of a Development Impact Bond, mobilised community volunteers known as *Team Balika* to support girls' education. The evaluation, conducted by IDinsight across 332 schools in 282 villages, measured both learning outcomes and enrolment of out-of-school girls.

Community engagement and research collaboration

- **Local volunteers:** Team Balika members were recruited from within the same villages, enabling them to identify and engage out-of-school girls through household visits and community dialogue. Community feedback gathered through door-to-door visits and dialogues directly informed programme activities, training content for volunteers, and the targeting of out-of-school girls.
- **Monitoring enrolment:** Volunteers tracked school enrolment and supported retention, complementing school-level data collection verified independently through the evaluation. This not only strengthened programme delivery by enabling real-time adjustments but also improved the reliability of enrolment data feeding into the evaluation.
- **Research collaboration:** The evaluation brought together an India-based NGO and an international evaluation team, supported by local field staff, ensuring contextual knowledge was embedded into the design and data collection.

This model illustrates how community engagement and partnerships between local organisations and evaluation teams can strengthen both programme delivery and the credibility of research findings.

Source: [Educate Girls & IDinsight \(2018\)](#).

These findings underscore the need for future interventions to adopt more GEDSI-embedded frameworks. Programmes must challenge entrenched power structures, employ comprehensive disaggregated data collection, and foster diverse team compositions to achieve meaningful GEDSI outcomes.

5. Limitations

There are several limitations for this systematic review. Firstly, the inclusion criteria were restricted to peer-reviewed articles, book chapters, and reports, with limited representation from grey literature (which was only identified through pearl growing). Additionally, the review was limited to articles published in the English language, excluding potentially valuable research from non-English sources, particularly local-language journals, which might offer important insights, especially given the global scope of this review.

Importantly there might be studies that adopt an implementation science approach but not use the terminology (as apparent from examples included in the BE2 Systematic review as well as boxes 5 to 10). This programme engaged with implementing partners and evaluators to collect and use data to inform programme design and formulation and the use of rigorous research as evidence. However, it does not use the term implementation science, so studies associated with the programme are not included in this review. There are likely to be other examples that are similarly not included in this review but could inform a GEDSI approach to implementation science research. It would require a less systematic approach to identifying them than adopted by this review.

Finally, the review did not include pre-2010 studies. However, since 2010 only two studies were published between 2010 and 2015 that met the inclusion criteria for this review, indicating that publications directly engaging with implementation science research is more recent.

6. Implications for GEDSI in implementation research and future directions

This section highlights key recommendations on the integration of GEDSI using examples from the articles that received a high GEDSI rating in this systematic review, together with the additional studies identified that adopt implementation science principles. These recommendations highlight both the challenges observed in current research and the opportunities for moving the field forward.

1. Address geographical imbalances in research contexts

Challenge: Of the 16 education-focused studies reviewed, only one was conducted in the Global South (South Africa), with the remainder predominantly focused on the United States. This narrow geographical base risks reproducing Northern perspectives and neglecting systemic inequities in lower-resource settings.

Opportunity: Health research demonstrates that incorporating Global South perspectives is both feasible and valuable for developing inclusive implementation science frameworks. Education case studies such as Pike et al. (2023) together with the other studies identified through the wider processes illustrate how research can integrate GEDSI considerations at the design and analysis stages in global South contexts.

2. Develop tools and methodologies that integrate GEDSI across all stages of research

Challenge: Few studies systematically integrate GEDSI from intervention design through to evaluation and feedback. GEDSI considerations are often treated as an add-on rather than a central principle guiding the research cycle.

Opportunity: Examples such as [Dhar, Jain, and Jayachandran \(2022\)](#) and [Edmonds, Feigenberg and Leight \(2020\)](#) show how research designs, including RCTs, can move beyond enrolment and learning outcomes to include measures of agency, aspirations and gender norms. Future implementation science research studies can build on lessons from such studies by embedding GEDSI in the approach to methods and analysis.

3. Interrogate underlying power structures in research design

Challenge: Research studies rarely interrogate hierarchies and systemic inequalities in the design phase. This exclusion risks reproducing and/or sustaining existing power structures and overlooking the needs of marginalised groups.

Opportunity: Methodologies that explicitly examine and rebalance power relations in research design are critical. For example, Room to Read in Rajasthan incorporated outcomes related to girls' agency, aspirations, and gender norms into its RCT design, showing how power-sensitive measures can be evaluated alongside education outcomes. This provides an important example for GEDSI integration while scaling evidence.

4. Ensure GEDSI integration in data collection and analysis that goes beyond GEDSI disaggregated data

Challenge: Data are often aggregated, which masks disparities between groups, and even when disaggregation is undertaken, it typically focuses on single categories such as gender or disability. This approach overlooks the intersecting nature of identity markers and the ways in which multiple forms of exclusion operate simultaneously.

Opportunity: Systematic disaggregation of data across gender, disability, socio-economic status, and other characteristics, combined with an intersectional lens, can better capture how overlapping identities shape experiences of exclusion. Complementing this with a contextually sensitive lens strengthens credibility. In Willging et al. (2016), ongoing consultation with a community advisory panel supported interpretation of findings in ways that reflected lived experiences and enhanced trustworthiness of the analysis.

5. Ensure diverse research teams

Challenge: Amongst the publications reviewed in the systematic review, many research teams lacked representation from marginalised groups and from in-country researchers in the Global South.

Opportunity: GEDSI-transformative research requires team composition that includes gender balance, lived experience of marginalisation, and representation from study contexts. Pike et al. (2023) demonstrated this by including South African researchers in a school-based sexual and reproductive health programme, ensuring both

gender and local representation as well as community engagement for informing the research. Future implementation science research should similarly elevate the voices of local stakeholders to inform contextually based findings.

6. Expand inclusive and meaningful community engagement

Challenge: Voices and perspectives of community members are often absent from the design and analysis of education-focused implementation research, leading to limited alignment with local needs.

Opportunity: Structured engagement with communities enhances the relevance and legitimacy of research. The Educate Girls programme in Rajasthan, India recruited local volunteers from within the same village in which the intervention was implemented for all data collection and ensured community perspectives were integrated in the design of the study. Similarly, implementation science research in the Global South can strengthen its impact by embedding community engagement in the shaping of interventions.

7. Strengthen structured frameworks and practical tools for education

Challenge: Compared to health, where frameworks such as the Health Equity Implementation Framework provide structured approaches, education lacks equivalent tools that systematically address power dynamics and structural barriers.

Opportunity: There is scope to adapt health frameworks and to co-develop education-specific tools that incorporate robust evaluation metrics, adaptive feedback loops, and community engagement strategies. These tools can help move the field beyond abstract commitments to measurable, context-sensitive actions.

Moving forward, it is important for policymakers, practitioners and researchers to collaborate in integrating robust research, adaptive feedback loops, and active community and wider stakeholder engagement, to foster more inclusive education systems.

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