

Barriers and Effective Strategies for Stakeholder Engagement in Inclusive and Language Education: Sustainable Development Goals (SDGs) Perspective

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Abstract

This study aims to identify the barriers limiting stakeholder participation in inclusive and language education, and to develop strategies aligned with the Sustainable Development Goals (SDGs). Using visual-adaptive questionnaires, interviews, and case studies across three regions in Uzbekistan, the study explored awareness, collaboration, and infrastructure-related challenges. Results revealed that most teachers and parents had only a partial understanding of inclusive education, and students lacked methodological resources. Effective practices (such as training sessions, collaborative teams, and targeted communication) were implemented to improve engagement. These strategies proved effective because they addressed both

structural and perceptual gaps, especially in supporting language development and inclusive teaching. The research highlights that coordinated and inclusive stakeholder engagement contributes significantly to educational equity. It also reinforces the role of inclusive and language education in promoting social justice and lifelong learning, consistent with SDG 4 on quality education and SDG 10 on reducing inequalities.

Keywords: Barriers; effective collaboration; inclusive education; stakeholders.

Introduction

Inclusive education has become a global priority, aimed at ensuring equal access to quality learning for all children, regardless of their physical, intellectual, linguistic, or social conditions (UNESCO, 2020). It emphasises the importance of participation, equity, and rights in education as aligned with the principles of human dignity and social justice. Alongside the development of inclusive language education, it plays a crucial role in supporting communication, cognitive growth, and cultural integration, particularly for students with diverse abilities and backgrounds. To achieve these goals, systemic reform, teacher training, and cross-sector collaboration are continuously developed at national and international levels (Mukhamedov et al., 2024).

Inclusive education has gained strategic momentum through key legislative instruments in Uzbekistan. Notably, Presidential Decree No. PP-4860 outlines measures for integrating children with special educational needs into general education while ensuring appropriate infrastructure and pedagogical resources. Additionally, Cabinet Resolution No. 46 provides updated guidelines on education and rehabilitation support, including specialised tools and adapted curricula. These documents mark a shift from a medical model of disability towards a social model, emphasizing the child's interaction with their environment rather than their limitations (Rakhimova, 2023).

However, challenges persist at the implementation level. While policies promote inclusive practices, in reality, many schools lack ramps, trained specialists, or adapted materials. Contradictions still exist between policy and practice, especially in the inclusion of children with moderate or severe intellectual disabilities. For example, students with mild impairments may be accepted, but those with complex needs often face institutional resistance. Moreover, language-related barriers in instruction (such as a lack of communication strategies for children with hearing impairments) further complicate inclusion in mainstream classrooms. These gaps demonstrate that physical access alone is not sufficient without linguistic and pedagogical inclusion (Teshaboeva et al., 2024).

In addition to the structural and technical barriers, limited stakeholder collaboration remains a pressing issue. Weak coordination among teachers, school leaders, and families hinders inclusive efforts. As educational transformation requires shared responsibility, it becomes essential to understand and address these interactional dynamics. Effective stakeholder engagement in inclusive and language education must therefore go beyond legal mandates and include ongoing professional development, open dialogue, and localized support systems (Usmanovna et al., 2025).

The purpose of this study is to identify the dominant barriers that hinder active stakeholder participation in inclusive and language education, while offering effective strategies that align with Sustainable Development Goals (SDGs), particularly SDG 4 on quality education and SDG 10 on reducing inequalities. The novelty of this research lies in the use of a publicly-oriented pedagogical framework piloted in 15 schools, combined with a region-specific case analysis across Chirchik, Kokand, and Fergana. By integrating inclusive practices with the development of communication and language skills, the study provides a dual focus on equity and expression in education. This contributes practical insights into how inclusive education can be actualized through coordinated stakeholder efforts in diverse linguistic and social contexts.

Literature review

Inclusive education theory is rooted in the principles of human rights and social inclusion, asserting that all learners (regardless of disability, language background, or socio-economic status) should have equal access to meaningful learning experiences within mainstream settings. This makes research regarding special needs education well-documented (Table 1). This approach has evolved significantly from earlier deficit-based models to a more empowering and capacity-building framework that recognizes diversity as a resource rather than a barrier (Mukhamedov et al., 2025).

Table 1. Previous studies regarding special needs education

No	Title	Reference
1	Primary school teachers' competence level in the early identification of gifted children	Saadu et al. (2024)
2	Diversity, equity, and inclusion as essential tools in promoting teaching and learning	Adeoye et al. (2024)
3	Managing visually impaired students: Factors that support and inhibit inclusive programs in elementary	Al Shaban and Hanafi (2024)
4	Relationship between the counselor's personal characteristics and self-development experience with individual counseling skills	Hafina (2024)
5	Parents' and teachers' perception of indicators for the choice of marriage partner among hearing-impaired adults	Adesokan et al. (2024)
6	Anti-bullying Act of 2013 and holistic development of secondary students in term of emotional development, mental development, and social development	Malaguial et al. (2024)
7	Development of Traluli program of family-resourced early intervention for multiple disability and visual impairment (MDVI) children with fine motor impairment in inclusive school	Rizqita et al. (2024)
8	Student's perception of school-related factors of mental health problems	Ojonugwa et al. (2024)
9	Secondary school violence among adolescents: The contributing factors and way forward	Ajani et al. (2024)
10	Developing the ability to add integer through live worksheets among grade II pupils with autism in mathematics learning	Suprihatin et al. (2024)
11	Development of a family-based early intervention program to improve consonant letter articulation skills in children with articulation barriers	Bela et al. (2024)
12	The financial burden of disability: Narratives of Filipino families with low socioeconomic status raising children with disabilities	Bondad et al. (2024)
13	Coping with adolescence: Parents' experiences in providing sexuality education to deaf adolescents	Stackus and Asnancie (2024)
14	Developing computational thinking questions for upper elementary students with mild autism spectrum disorder	Al Husaeni et al. (2024)
15	Effectiveness of assertiveness training techniques in classical guidance to increase career confidence of special needs students	Munawwarah and Muslihata (2024)
16	Pedagogical and psychological foundations in preparing future teachers	Sotbarova (2024)
17	Structured approach to diagnosis and rehabilitation of children with autism spectrum disorder: Strategies for effective social adaptation	Azizovna et al. (2024)
18	Emotional maturity and emotional adjustment of adolescents with emotional and behavioral disorder	Adesokan et al. (2024)

19	School feeding program in Nigeria: Special schools experience	Dada et al. (2024)
20	Teachers' knowledge and use of multiple disciplinary measures in curbing pupils' antisocial behaviour	Saadu (2024)
21	Serial mediation effect of self-confidence in the relationship between hedonic lifestyle and consumptive behavior in generation Z	Anisah et al. (2024)
22	Emotional stability as correlate of students' academic performance in primary schools	Olarewaju et al. (2024)
23	Coaching competencies and sports-facility utilization: Their influence on the commitment and psychological well-being of student-athletes	Braquez and Morbo (2024)
24	Impact of knowledge training on COVID-19 management among individuals with intellectual disability in Nigeria	Dada et al. (2024)
25	Psychological factors shaping emotional states in early adolescence	Eshbekovich and Sayfullayevna (2024)
26	Challenges of studying language loss in marginalized communities: methodological reflections from Bangladesh	Karmaker (2024)
27	Transforming special and inclusive education: Leveraging information technologies for enhanced learning	Baxtiyor and Sardor (2024)
28	Overcoming barriers and implementing best practices in inclusive higher education: Strategies for accessibility, equity, and student support	Oktamovna and Ruslanovna (2024)
29	Pedagogical and psychological factors for ensuring the sustainability of inclusive education in Uzbekistan	Khudayshukurovna et al. (2024)
30	Individualized assessment strategies for students with special needs in inclusive classrooms	Yunusovna et al. (2024)

In parallel, the concept of language education within inclusive frameworks focuses on enabling communication and comprehension for all students, especially those with speech, hearing, or cognitive impairments. Language access is foundational in building confidence, participation, and academic progress.

A key contribution of inclusive language education lies in its role as a bridge for social integration. When children with disabilities develop expressive and receptive language skills, they are more likely to engage with peers and teachers, reducing isolation and enhancing emotional well-being. This is particularly important for students with hearing loss or speech delays, where early interventions and structured language exposure directly influence academic success (Rakhimova, 2023; Makhmudova et al., 2024). The combination of speech therapy, didactic language games, and visual-based communication strategies has shown promise in previous research (Teshaboeva et al., 2024).

Recent literature also emphasizes the alignment of inclusive education with the Sustainable Development Goals (SDGs). Specifically, SDG 4 aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all", while SDG 10 seeks to "reduce inequality within and among countries". Effective stakeholder collaboration is vital in achieving these goals. Teachers must be equipped not only with inclusive pedagogies but also with linguistic tools to support children with diverse needs. Likewise, parents and local communities must be actively involved in fostering an inclusive mindset (Khimmatiev et al., 2025).

Despite policy-level advancements in Uzbekistan, research indicates that many educators remain underprepared to handle language diversity and special needs in the classroom. Moreover, inconsistencies between national regulations and implementation practices often discourage

teachers from fully embracing inclusion (Usmanovna et al., 2025). This underscores the importance of both top-down policy reforms and bottom-up innovations, such as school-based support teams, teacher training on inclusive communication, and peer collaboration platforms.

Taken together, the literature highlights that inclusive and language education is inherently interconnected. Without accessible language instruction, educational inclusion remains incomplete. And without systemic inclusion, linguistic interventions risk being isolated and ineffective. Therefore, any strategy aimed at fostering stakeholder participation must integrate these dual elements to ensure equity and educational sustainability.

Method

This study employed a mixed-methods approach, combining quantitative and qualitative techniques to capture a comprehensive view of stakeholder collaboration in inclusive and language education settings. The first phase utilized structured visual-adaptive questionnaires, which were designed to accommodate respondents with varying cognitive and communicative abilities. The instruments targeted three primary groups: teachers, parents, and students preparing to enter the teaching profession. Questions focused on awareness of inclusive education principles, readiness to engage in inclusive practices, and perceived obstacles in language-based learning environments (Usmanovna et al., 2025).

Table 2 outlines the survey instruments employed to assess stakeholder awareness, identify engagement barriers, and determine support needs in the context of inclusive and language education. The results indicate that while inclusive education is broadly acknowledged, both teachers and parents often possess only a partial understanding of its principles and requirements. Furthermore, students preparing to become educators highlight a clear demand for practical exposure and access to adequate methodological resources. These instruments were intentionally designed to capture not only general perceptions but also specific gaps in collaboration, instructional strategies, and communicative competence necessary for effective stakeholder participation.

Table 2. Types of survey

No	Type of Survey	Purpose
1	Survey for Teachers	To determine teachers' preparedness for inclusive education, their attitudes, and methodological knowledge.
2	Survey for Parents	To assess parents' awareness of inclusive education and their level of support.
3	Survey for Students (Pedagogy)	To identify future educators' views on and readiness for inclusive education.
4	Problem Identification Survey	To determine existing problems, barriers, and challenges faced by participants in inclusive education.
5	Needs Assessment Survey	To identify the types of methodological support needed by teachers and specialists.

Following the surveys, in-depth interviews were conducted with inclusive education specialists, classroom teachers, and parents of children with special needs. These interviews aimed to provide contextual insights into the systemic challenges faced at the school and family levels. Participants shared their experiences regarding infrastructure inadequacies, limited training opportunities, and the absence of clear guidance on inclusive methodologies, particularly in supporting linguistic development for children with hearing or speech impairments (Rakhimova, 2023; Teshaboeva et al., 2024).

The final component of the research utilized a case study method across 15 selected schools where a public program titled *Synergetic Activity in Inclusive Education* was implemented. Observational protocols and institutional documentation were analyzed to assess how multi-stakeholder collaboration took place in real classroom settings. Special attention was given to the presence of communication strategies, teacher coordination, and adaptive instructional practices for children with diverse linguistic profiles. These case studies enabled the identification of both successful practices and recurring implementation gaps (Khimmatalliev et al., 2025).

Throughout the process, ethical considerations were observed by obtaining informed consent from all participants and ensuring anonymity in data reporting. Data triangulation was used to validate findings from the different sources. Quantitative data from surveys were analyzed using descriptive statistics, while qualitative data from interviews and case studies were processed through thematic coding. The combination of these methods allowed for a holistic understanding of the operational conditions surrounding inclusive education in Uzbekistan and informed the development of strategies that are both pedagogically sound and contextually appropriate (Adeoye et al., 2024; Saadu et al., 2024).

Results and discussion

Stakeholder awareness and misconceptions

Table 3 presents the outcomes of stakeholder surveys in inclusive and language education conducted across Chirchik, Kokand, and Fergana. This data guided the design of an integrated methodological approach to examine participation levels, knowledge gaps, and engagement barriers among teachers, parents, and students.

Table 3. Survey results on stakeholders in inclusive education

Stakeholders	Indicator	Percentage (%)
Teachers	Fully aware of inclusive education	18%
	Partially aware	63%
	Not aware at all	19%
	Willing to be prepared	54%
Parents	Scored 7 or higher on the awareness test	72%
	Correctly assessed physical environment	48%
	Consider active participation important	45%
Students	Gained practical experience	57%
	Willing to work in inclusive settings	64%
	Lack of methodological materials	60%

The data show that only 18% of teachers reported being fully aware of the core principles of inclusive education, while the majority, 63 percent, indicated partial understanding. Alarming, 19% of teachers admitted to not knowing the concept at all. Although over half of the respondents (54 percent) expressed willingness to be trained in inclusive pedagogies, the lack of foundational awareness represents a barrier that undermines implementation. This finding aligns with previous studies in the field, which point to the critical role of teacher competence in the success of inclusive education frameworks (Saadu et al., 2024).

The pattern continues among parents. While 72% scored 7 or above on an awareness test, indicating a general familiarity with the notion of inclusion, only 48% could correctly assess the physical environment requirements, such as ramps or adapted furniture. Furthermore, just 45% of parents acknowledged the importance of their active involvement in the inclusive process. These

findings reveal a disconnect between general awareness and actionable understanding, suggesting that parental engagement needs to be deepened through more targeted educational initiatives (Adeoye et al., 2024).

Students training to become future teachers also demonstrated an uneven distribution of readiness. 57% had gained some practical experience in inclusive classrooms, mostly during their teaching practicum. However, 60% noted a significant lack of methodological support and access to inclusive teaching materials. Despite 64% expressing willingness to work in inclusive settings, they voiced concern about being unprepared to adapt teaching strategies to support learners with language delays, hearing impairments, or cognitive differences. This mirrors findings by Teshaboeva et al. (2024), which emphasize the gap between theoretical training and practical classroom competence.

Structural barriers in educational environments

In addition to the perceptual and knowledge-based gaps, structural challenges significantly limit the success of inclusive and language education. Field observations and interviews revealed that many schools across the three studied regions lacked basic infrastructural elements essential to inclusion. Several schools did not have ramps for wheelchair users, visual signage, or quiet learning spaces for students with sensory processing difficulties. In classrooms that included children with communication barriers, such as delayed speech or partial hearing, no specialized tools or visual aids were found. These shortcomings reflect a broader issue within Uzbekistan's educational infrastructure, which continues to evolve from legacy systems that prioritized standardization over differentiation (Khudayshukurovna et al., 2024).

Furthermore, there is a shortage of specialized personnel, including speech therapists, defectologists, and assistant teachers. In many schools, generalist teachers are expected to support students with a wide range of needs without receiving additional training or resources. This expectation places unrealistic demands on educators and leads to inconsistent application of inclusive practices. Participants reported that the absence of school-based support teams hindered their ability to conduct proper diagnostic assessments, develop individualized plans, or provide differentiated instruction tailored to students' language development levels (Rakhimova, 2023; Bela et al., 2024).

The Synergetic Activity in Inclusive Education program, piloted in 15 schools, attempted to address these structural limitations by introducing team-based planning, collaborative lesson design, and regular teacher-parent meetings. Preliminary results indicated improved adaptation among students in inclusive classrooms. Teachers noted that structured collaboration led to more consistent routines, clearer communication with parents, and a shared sense of responsibility in addressing diverse learning needs. This outcome confirms that while infrastructure is essential, stakeholder coordination plays an equally critical role in delivering effective, inclusive education (Usmanovna et al., 2025).

Linguistic and communicative challenges

One of the most significant insights from this study concerns the lack of linguistic support in inclusive education. Teachers interviewed in all three regions admitted to struggling with how to facilitate classroom communication with students who are deaf, hard of hearing, or speech delayed. In schools without interpreters or visual aids, the responsibility of adapting spoken instruction to meet the needs of these students falls entirely on the individual teacher, often without

guidance. As inclusive education expands, so does the diversity of students' language abilities, making linguistic accessibility a core issue.

In most cases, the absence of early intervention programs meant that children entered school with limited vocabulary and underdeveloped expressive language. Teachers expressed frustration that they were expected to deliver the same curriculum to these students without any training in alternative communication methods, such as picture exchange systems, gesture-based instruction, or simplified syntax. This echoes the findings by Al Shaban Radi and Hanafi (2024), who emphasized that managing visually or linguistically impaired students requires tailored pedagogical tools and consistent teacher support.

Moreover, it became apparent that inclusive language education remains narrowly interpreted. While teachers focus on teaching Uzbek or Russian as the language of instruction, they often neglect the adaptive strategies needed for students with atypical language acquisition trajectories. Only a few teachers had received professional development in phonological awareness, multimodal instruction, or speech articulation exercises. In the absence of such training, students with communication difficulties become isolated within the classroom, and their participation in group learning suffers. The inclusion of speech support systems in daily lessons is therefore not just beneficial but necessary (Makhmudova et al., 2024).

In contrast, a few schools demonstrated promising practices. For example, one school in Fergana used symbol boards and visual schedules to support students with autism and delayed speech. Teachers there collaborated closely with parents and used shared logs to track language milestones. These initiatives were locally developed and not part of any national directive, underscoring the need for formal policy backing and scalable training modules that promote such innovations across all schools.

Gaps in policy implementation and legal contradictions

A recurring theme in both the interviews and case observations is the gap between Uzbekistan's inclusive education policy frameworks and their practical application in schools. While laws and presidential decrees exist to guide inclusive education, including specific reference to children with disabilities, the actual interpretation and enforcement of these policies vary widely between districts and school leadership teams. Many teachers and administrators reported that they are unsure how to implement the legal standards into everyday practice, especially when the official documents offer little guidance on children with multiple or severe impairments.

One of the most contentious legal areas relates to the inclusion of students with moderate to severe intellectual disabilities. While Resolution No. 46 allows for the inclusion of children with mild intellectual disabilities, it remains silent or ambiguous about those with more complex support needs. This legal ambiguity often discourages schools from accepting such students altogether. School leaders cite a fear of violating regulations or lacking sufficient support services. In effect, this results in systemic exclusion despite the government's broader commitment to equity and access (Khudayshukurovna et al., 2024).

Teachers also expressed concern about unclear job roles within inclusive teams. For instance, while the law calls for inclusive tutors or assistant teachers, schools report difficulties in hiring these professionals, both due to budget limitations and the lack of certified specialists in the field. In many cases, generalist classroom teachers must take on additional responsibilities—such as monitoring student behavior, implementing individualized instruction, and managing parent communication—without adequate support or time allocation. These practical concerns further widen the gap between policy expectations and classroom realities (Khimataliev et al., 2025).

The disconnect also extends to assessment and evaluation procedures. Students with language and cognitive impairments are often evaluated using the same standardized tests designed for neurotypical learners. This creates structural disadvantages and misrepresents students' actual potential. Without adaptive assessment tools, educators are unable to accurately track student progress, leading to either unrealistic expectations or systemic underestimation of students with special needs. The implementation of inclusive assessment frameworks, therefore, remains a critical yet underdeveloped area in the policy landscape (Yunusovna et al., 2024).

Community engagement and parental participation

The success of inclusive and language education cannot be isolated within the school environment; it requires a holistic partnership with families and the wider community. However, findings indicate that parental participation is still perceived as secondary rather than central. While some parents attend orientation programs or contribute feedback during evaluation meetings, many are unaware of their rights, responsibilities, or potential contributions. Interviews revealed that a significant portion of parents remain hesitant to actively engage in their child's education due to low confidence, limited knowledge of inclusive practices, or socio-economic constraints (Bondad et al., 2024).

One of the primary barriers cited by parents was a lack of communication from schools. Several reported that they were only contacted when problems occurred, rather than being included in regular planning or decision-making processes. This reactive communication style reinforces a passive role for parents, instead of empowering them as active collaborators. Schools that implemented monthly parent-teacher meetings or shared progress logs with families demonstrated stronger student outcomes and more consistent emotional adjustment among students with disabilities. These practices highlight the importance of building mutual trust and transparent communication structures (Rizqita et al., 2024).

Cultural perceptions also play a role. In some communities, disability continues to carry a stigma, which prevents families from openly discussing their child's needs or seeking support. This was particularly evident in more conservative rural areas, where families feared social judgment or exclusion. In contrast, schools that normalized disability as a form of human diversity through school-wide campaigns or inclusive curriculum saw higher levels of parental involvement. This suggests that public education and community dialogue can significantly influence how inclusion is perceived and practiced (Adesokan et al., 2024).

In some pilot schools involved in the *Synergetic Activity* program, teachers created parent support groups and peer mentoring systems. These initiatives allowed experienced families to guide others in navigating institutional procedures, understanding therapy options, and advocating for individualized support. The result was a strengthened school-home connection and an increase in proactive engagement among families. Moreover, by fostering horizontal relationships among parents, schools created a sustainable model of mutual learning and empowerment (Ajani et al., 2024).

Teacher professional development and support needs

Another dominant theme in the findings is the lack of professional development opportunities tailored specifically for inclusive and language education. Most teacher training programs in Uzbekistan continue to follow generalized pedagogical models, with limited emphasis on differentiated instruction, multimodal communication, or inclusive curriculum adaptation. As

a result, even well-intentioned teachers struggle to meet the needs of students with diverse learning profiles.

During interviews, teachers consistently cited their desire for more in-depth training in instructional adaptation, classroom behavior strategies, and collaborative planning. Many reported feeling isolated in managing inclusive classrooms, particularly when assigned students with dual diagnoses, such as speech impairment and cognitive delays. Teachers expressed a strong interest in learning from colleagues, sharing case studies, and receiving mentorship from more experienced educators. However, such structured peer-learning systems are currently lacking in most schools (Al Husaeni et al., 2024).

In schools where professional learning communities had been established, teachers reported higher confidence and success in using inclusive strategies. These included lesson study groups, collaborative planning sessions, and real-time classroom observations followed by feedback. Such environments allowed teachers to refine their instructional techniques, integrate inclusive language approaches, and test new materials with peer support. This suggests that in-service training alone is not sufficient; sustained professional learning models embedded in school culture are essential (Suprihatin et al., 2024).

Support from school leadership also emerged as a key factor. In schools where principals actively supported inclusion—by allocating time for teacher meetings, advocating for resources, or recognizing teacher efforts—implementation outcomes were more positive. Teachers in these environments reported feeling valued and motivated, which contributed to greater classroom innovation and student responsiveness. These findings echo previous literature emphasizing that inclusive leadership is foundational to school-wide change (Adesokan et al., 2024; Sotbarova, 2024).

Finally, the lack of inclusive teaching materials remains a persistent barrier. Teachers noted that they often had to create their visual aids, adapt textbooks, or translate instructions into simplified language without formal training. This not only increases the workload but also reduces consistency across classrooms. A national database of inclusive teaching resources, co-developed by teachers and specialists, could address this gap and provide scalable access to quality materials.

Inclusive curriculum design and language-sensitive instruction

A critical component of successful inclusive education lies in the development and implementation of curricula that reflect both diversity and accessibility. Despite policy support for inclusion, many schools in Uzbekistan still use uniform national curricula without adjustments for students with different linguistic or cognitive profiles. This lack of adaptation creates substantial barriers for children with speech and language impairments, who require slower pacing, simplified language structures, or alternative ways of expressing understanding (Azizovna et al., 2024).

Curriculum rigidity also hinders the integration of local cultural and linguistic contexts, especially for students in multilingual or rural communities. Teachers reported difficulties in delivering content when students struggled to follow verbal instructions due to limited vocabulary or delayed language development. Rather than incorporating multimodal methods such as visual cues, audio support, or kinesthetic activities, many lessons remain text-heavy and teacher-centered. This contrasts with evidence showing that students with special needs perform better when content is presented through multiple channels that engage different sensory modalities (Munawwarah and Muslihati, 2024).

Some schools attempted to address this by incorporating thematic learning, where lessons are built around real-life topics such as “health,” “family,” or “nature.” These topics were easier

to scaffold with visual materials and encouraged active participation from students. For example, one teacher used role-play and image cards to teach vocabulary related to emotions, helping children with autism and speech delay connect words with expressions and situations. However, these adaptations were usually informal and teacher-initiated, rather than systematically supported by curriculum guidelines.

Moreover, there is a gap in aligning curriculum objectives with individual education plans (IEPs). While IEPs are mandated for students with diagnosed disabilities, most teachers reported they were unfamiliar with how to adjust curriculum content or learning outcomes accordingly. As a result, students are often assessed on the same benchmarks as their neurotypical peers, which leads to frequent failure and demotivation. A more flexible curriculum framework that integrates universal learning design (UDL) principles would help bridge this gap, ensuring that all students can access and engage with the content at appropriate levels (Stackus and Asnancie, 2024).

Efforts to develop language-sensitive instructional materials are also limited. In only a few schools did teachers use dual-language supports, storybooks with picture cues, or tactile learning resources. Most educators indicated a need for structured training in language acquisition theory, particularly in the context of special education. Without this foundation, teachers may unintentionally simplify content to the point of limiting academic rigor, or conversely, overwhelm students with complex structures that hinder understanding. Strengthening language pedagogy in teacher education programs would help prepare future educators to design instruction that supports all learners (Bela et al., 2024).

Monitoring, evaluation, and accountability mechanisms

Another area requiring urgent attention is the monitoring and evaluation (M&E) framework for inclusive education. While pilot programs such as Synergetic Activity in Inclusive Education generated positive outcomes, there are limited mechanisms to track progress across schools in a standardized, data-driven manner. Interviews with school administrators revealed that most reporting systems focus on enrollment numbers rather than quality indicators such as student progress, instructional adaptation, or stakeholder satisfaction.

In some schools, classroom observations were conducted by education officials, but these evaluations often emphasized discipline and teaching technique rather than inclusivity or differentiation. Teachers reported that inclusive practices, such as using assistive tools or modifying assignments, were not part of the formal evaluation rubric. This creates a disincentive for teachers to invest in inclusive strategies, especially when their performance assessments do not recognize or reward such efforts (Dada et al., 2024).

Furthermore, feedback loops between schools and educational authorities remain weak. Teachers and principals often submit reports, but receive little guidance or follow-up on how to improve inclusive practices. Data collected at the national or regional level is rarely shared with schools in a way that is meaningful or actionable. This top-down approach undermines the culture of reflection and innovation needed for inclusive education to flourish (Baxtiyor and Sardor, 2024).

In terms of accountability, there are currently no clear consequences or support plans for schools that fail to meet inclusive education benchmarks. Schools in resource-poor areas are especially vulnerable, as they lack both the infrastructure and the personnel to implement even the most basic accommodations. Equity-oriented funding models could help ensure that support is allocated based on actual need rather than uniform formulas. Additionally, peer review systems, where schools evaluate each other's inclusion plans and share best practices, could foster a more collaborative accountability structure.

Student voices are also largely absent from M&E processes. Few mechanisms exist for students with special needs to express whether their educational experiences are inclusive, respectful, or effective. Involving students and parents in school-level evaluations could provide a more holistic picture of progress and identify gaps not captured through standard indicators. Such participatory approaches are also in line with international standards for rights-based education and align closely with the values of SDG 4 and SDG 10 (Karmaker, 2024).

Lastly, many respondents suggested the development of national quality standards for inclusive education that incorporate classroom-level indicators such as communication strategies, use of assistive devices, parental involvement, and student emotional well-being. These standards would need to be context-sensitive and accompanied by training modules to help schools implement them meaningfully. Without clear benchmarks and data-driven strategies, inclusion remains aspirational rather than operational.

Local innovation and cross-sector collaboration

Despite the challenges highlighted, several schools demonstrated notable local innovations that provide scalable models for inclusive and language education. In particular, schools that collaborated with community health centers, rehabilitation clinics, or parent associations achieved greater continuity in student support. These cross-sector partnerships enabled schools to access expertise in speech therapy, psychological counseling, and assistive device provision that would otherwise be unavailable within the education system alone (Oktamovna and Ruslanovna, 2024).

For example, one inclusive school in Chirchik partnered with a nearby speech and hearing center to conduct joint screenings for early language development. Teachers received basic orientation on how to recognize signs of language delay and how to adjust instructional strategies accordingly. As a result, students who previously remained passive in class began to show increased participation when lessons incorporated gestures, visuals, or simplified instructions. This model of preventive intervention demonstrates how community-based services can extend the reach and responsiveness of inclusive education (Eshbekovich and Sayfullayevna, 2024).

Additionally, teacher training institutions have a crucial role to play in sustaining and scaling such innovations. Schools that hosted pre-service teacher internships benefited from regular lesson observation and collaborative teaching experiments. Future educators gained real-world experience in inclusive classrooms, while host teachers reflected on their practices with support from university mentors. Strengthening these school-university partnerships could lead to ongoing cycles of experimentation, feedback, and pedagogical refinement.

Another promising approach involved the integration of inclusive values across the entire school culture rather than confining them to a special education track. Schools that adopted this model promoted peer support, student leadership in inclusion projects, and thematic school events that celebrated diversity. These activities helped normalize disability and build empathy among all students. They also created platforms for students with communication challenges to express themselves through art, movement, or storytelling, fostering confidence and mutual respect (Anisah et al., 2024).

At the systemic level, however, there remains limited coordination between the ministries of education, health, and social affairs. Fragmented data systems, inconsistent terminology, and separate program budgets hinder the creation of unified inclusion policies. Stakeholders interviewed in this study consistently called for an inter-ministerial task force dedicated to inclusive education planning and implementation. Such a body could develop joint guidelines, streamline referrals, and monitor the full range of services needed by children with disabilities.

International collaborations could further enrich the ecosystem. Pilot schools expressed interest in learning from countries with advanced inclusion systems, particularly in how to use low-cost technology for language learning, apply classroom-based assessments, and design culturally relevant materials. Cross-border teacher exchange programs, access to open educational resources, and regional conferences were cited as preferred forms of collaboration. These channels not only broaden pedagogical knowledge but also foster solidarity in the global movement for inclusive education (Braquez and Morbo, 2024).

Implications for policy, practice, and research

Findings from this study offer several implications for stakeholders at all levels of the inclusive education system. First, policies must go beyond legal inclusion and ensure pedagogical, linguistic, and psychological readiness within schools. This includes developing clear guidelines for classroom adaptation, allocating resources for inclusive materials, and ensuring school leadership is actively involved in planning and monitoring.

Second, teacher development must be restructured around ongoing, practice-based learning rather than one-time workshops. Professional learning communities, mentoring programs, and co-teaching models are effective in building inclusive capacity. These should be supported by both policy and school-level leadership and include a specific focus on language development strategies across the curriculum (Olawajun et al., 2024).

Third, the voice of students and families must be centered in inclusive education planning. Feedback from children with special needs, as well as their parents, can inform the design of more responsive services. Their lived experiences can guide curriculum development, teacher training, and school-community partnerships. Participatory design processes not only improve relevance but also empower marginalized voices in shaping their learning environments (Malagui et al., 2024).

Fourth, there is a pressing need for national data systems that monitor inclusion indicators beyond enrollment. These should include metrics such as learning progress, communication outcomes, social integration, and family satisfaction. Such data can inform resource allocation, policy reform, and international reporting obligations under SDG 4 and SDG 10.

Fifth, more research is needed on the intersection of inclusive education and language acquisition. While many studies focus on cognitive inclusion, fewer investigate how language barriers impact access, participation, and learning outcomes. Exploring multilingualism, dialectal diversity, and communication impairments within inclusive settings will deepen understanding of how to serve linguistically diverse learners. This is particularly relevant in Uzbekistan, where multiple languages are spoken across regions and where minority language speakers often face additional exclusion (Karmaker, 2024).

Inclusive education must be framed as a dynamic process rather than a fixed model. As schools, communities, and learners evolve, so too must the practices that support their participation. Flexibility, collaboration, and continuous learning must underpin any strategy aiming to create meaningful inclusion. This study contributes to that ongoing dialogue by offering grounded insights and practical pathways for advancing inclusive and language-sensitive education in Uzbekistan and similar contexts.

Finally, this study adds new information regarding SDGs, as reported elsewhere (Table 4).

Table 4. Previous studies on SDGs

No	Title	Reference
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1	Low-carbon food consumption for solving climate change mitigation: Literature review with bibliometric and simple calculation application for cultivating sustainability consciousness in facing sustainable development goals (SDGs)	Nurramadhani et al. (2024)
2	Towards sustainable wind energy: A systematic review of airfoil and blade technologies over the past 25 years for supporting sustainable development goals (SDGs)	Krishnan et al. (2024)
3	Assessment of student awareness and application of eco-friendly curriculum and technologies in Indonesian higher education for supporting sustainable development goals (SDGs): A case study on environmental challenges	Djirong et al. (2024)
4	A study on sustainable eggshell-derived hydroxyapatite/CMC membranes: Enhancing flexibility and thermal stability for sustainable development goals (SDGs)	Waardhani et al. (2025)
5	Integrating multi-stakeholder governance, engineering approaches, and bibliometric literature review insights for sustainable regional road maintenance: Contribution to sustainable development goals (SDGs) 9, 11, and 16	Yustiarini et al. (2025)
6	Computational engineering of malonate and tetrazole derivatives targeting SARS-CoV-2 main protease: Pharmacokinetics, docking, and molecular dynamics insights to support the sustainable development goals (SDGs), with a bibliometric analysis	Merzouki et al. (2025)
7	Innovative nanofluid encapsulation in solar stills: Boosting water yield and efficiency under extreme climate supporting sustainable development goals (SDGs)	Namoussa et al. (2025)
8	Modernization of submersible pump designs for sustainable irrigation: A bibliometric and experimental contribution to sustainable development goals (SDGs)	Glovatskii et al. (2025)
9	Sustainable development goals (SDGs) in engineering education: Definitions, research trends, bibliometric insights, and strategic approaches	Ragadhita et al. (2026)
10	Sustainable packaging: Bioplastics as a low-carbon future step for the sustainable development goals (SDGs)	Basnur et al. (2024)
11	Production of wet organic waste coenzymes as an alternative solution for environmental conservation supporting sustainable development goals (SDGs): A techno-economic and bibliometric analysis	Sesrita et al. (2025)
12	Hazard identification, risk assessment, and determining control (HIRADC) for workplace safety in manufacturing industry: A risk-control framework complete with bibliometric literature review analysis to support sustainable development goals (SDGs)	Henny et al. (2025)
13	Techno-economic analysis of production ecobrick from plastic waste to support sustainable development goals (SDGs)	Syahrudin et al. (2026)
14	Techno-economic analysis of sawdust-based trash cans and their contribution to Indonesia's green tourism policy and the sustainable development goals (SDGs)	Apriliani et al. (2026)
15	The influence of environmentally friendly packaging on consumer interest in implementing zero waste in the food industry to meet sustainable development goals (SDGs) needs	Haq et al. (2024)
16	Effect of substrate and water on cultivation of Sumba seaworm (nyale) and experimental practicum design for improving critical and creative thinking skills of prospective science teacher in biology and supporting sustainable development goals (SDGs)	Kerans et al. (2024)

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| 17 | Characteristics of jengkol peel (<i>Pithecellobium jiringa</i>) biochar produced at various pyrolysis temperatures for enhanced agricultural waste management and supporting sustainable development goals (SDGs) | Rahmat et al. (2024) |
| 18 | Contributing factors to greenhouse gas emissions in agriculture for supporting sustainable development goals (SDGs): Insights from a systematic literature review completed by computational bibliometric analysis | Soegoto et al. (2025) |
| 19 | The relationship of vocational education skills in agribusiness processing agricultural products in achieving sustainable development goals (SDGs) | Gemil et al. (2024) |
| 20 | Sustainable development goals (SDGs) in science education: Definition, literature review, and bibliometric analysis | Maryanti et al. (2022) |
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Conclusion

This study identified critical barriers to stakeholder participation in inclusive and language education, including limited awareness, insufficient infrastructure, lack of training, and policy-practice gaps. Through a mixed-methods approach, the findings highlight that effective collaboration, professional support, and contextualized strategies significantly enhance inclusive practices. The integration of language-sensitive instruction and stakeholder engagement fosters educational equity and aligns with the Sustainable Development Goals. By addressing both structural and communicative challenges, this research contributes a practical and scalable model for improving inclusive education systems, particularly in transitioning contexts such as Uzbekistan.

Declaration of conflicting interest

The authors declare that there is no conflict of interest in this work.

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