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A Tale of Two Studies:

**Evidence on Inclusive Education in
Kazakhstan based on a Formative
and a Big Data Evaluation**

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EDITORIAL INSIGHT

Reviewers commended both the complementary research pieces on which this document is based. The formative evaluation provided a valuable assessment of the state education programmes between 2011 and 2021 with a special focus on inclusivity. The big data evaluation highlighted the range of social media discussions being undertaken by different stakeholder groups on inclusive education and provided insights into potential barriers hampering inclusivity.

Going forward, innovative approaches like social media listening can play a vital role and complement traditional methods of evaluation to further the understanding on barriers to inclusive education, especially when studied from a gender lens.

Content

Introduction

The Republic of Kazakhstan has a longstanding commitment to promoting education and human capital formation in the country. Since 2011 and in pursuit of these objectives, significant budgetary support has been extended to the State Programmes for Development of Education[1]. The stated objective of these programmes is to make education accessible to all children, improve its quality and thereby promote socio-economic development for all its citizens.

Kazakhstan is a young country with close to 34% of its population below the age of 18 years. It is estimated that it has over 188,000 children with special educational needs (SEN), a number that is growing every year.

As of 2022, a large section of children with SEN continues to rely on special schools (14%), special classes (10%) and home-schooling (12%). Taking cognisance of the matter, the country's educational policy is gradually transitioning from a Soviet era's correctional outlook to an inclusive approach to cater to these needs. To better understand the inclusive education landscape in the country, the Ministry of Education, in collaboration with UNICEF, commissioned two complementary research outputs - a Formative and a Big Data Evaluation - that were undertaken by the teams at Junction Bulgaria (JB) and Oxford Policy Management (OPM), respectively.

Research objectives

The objective of the JB formative evaluation was to examine the functioning of the state education programmes between 2011 and 2021 with a special focus on inclusivity. This covered children from pre-school to secondary school levels. The Big data evaluation or Social Media Listening (SML) study focused on the same age group of children and aimed to further the understanding of different stakeholder perspectives, as expressed via social media and online news media outlets. The demography of Kazakhstan reflects that it is a relatively young country. Given that the youth are more inclined to using social media, this is an important source of discussions in the country, including those on inclusive education. Figure 1 presents the market share of different social media platforms in Kazakhstan. The evaluation questions posed in this study are listed in Box 1. Together, the findings from these complementary studies generated insights for UNICEF, the Ministry of Education, and the Government of Kazakhstan to inform future strategies and policies in the area of transformation of inclusive education. These findings may also be useful for non-governmental organisations and other scientific institutions who are actively working or supporting investments in inclusive education. This document synthesises the evidence generated and provides actionable points to improve inclusive education outcomes in the country.

Methodology

Formative Evaluation (FE) of state education programmes (2011 – 2021)

The FE used a mixed methods approach to assess the effectiveness of state education programmes from 2011 to 2021 in achieving inclusive education in Kazakhstan. This consisted of literature review, secondary analysis of publicly available documents, publications from the Ministry of Education, and analysis of qualitative data. The qualitative data included:

32 Key Informant Interviews (KIIs) with multiple stakeholders like representatives from national and local authorities, international partners, NGOs, and UNICEF Kazakhstan.

[1]These programmes were developed through collaboration between the ministries of Education, Higher Education and Science, Healthcare, National Economy, Investment and Development, as well as Akimats of Astana and Almaty cities, regions. The State Programme had a budgetary allocation of 509.7 billion KZT in the first phase (2011-2015), 1423.4 billion KZT in the second phase (2016-2019), and 11578 billion KZT for the third phase (2020-2025). The national project "Educated Nation" 2021-2025 had a budget of 1970.5 billion KZT.

19 Focus Group Discussions (FGDs) with 89 participants, who represented decision makers in the government, teachers, specialists, parents and students.

Five observations were also undertaken at the school level and focused on children, including those with SEN.

A Theory of Change (ToC) was conceptualised and outcomes from these interviews and observations were analysed along the dimensions of relevance, coherence, effectiveness, efficiency, and sustainability (Annex).

Social Media Listening (SML) study (2022 – 2023)

Inclusive education was operationalised to cover children with disabilities who were below 18 years of age. This included children with long-term physical, mental, intellectual, or sensory impairments, which may hinder their effective participation in society on an equal basis. Publicly accessible social media data was used and covered conversations and social media posts from January 2022 to May 2023. The evaluation questions (see Box 1) focused on two primary stakeholder groups, whose publicly accessible social media data were organised into two different text collections:

- Text data from the general online public (Corpus 1). This was analysed using Meltwater, an online platform which offers scraping and analytics of social media and news data.

- Text data from accounts and websites of specific organisations actively working in the inclusive education space in Kazakhstan (Corpus 2) using self-programmed scrapers.

For both the text corpora, search queries were first built in Meltwater and were based on literature review and expert discussions to identify multiple sub-topics within the broad topic of inclusive education. For each sub-topic, a combination search of keywords was created in Russian and Kazakh that accurately described the chosen sub-topic of interest. Thereafter, search queries were initiated for scraping online discussions and the geography was restricted to Kazakhstan. To ensure the quality of this search, human validation of these queries was also undertaken. For Corpus 2, a purposive research design was used to identify organisations active in the inclusive education space. Discussions and posts through their publicly accessible social media handles were scraped via a self-written programme using Python. A major component of Corpus 2 came from Instagram channels, Telegram groups and channels, and web sources such as blogs and news outlets.

Box 1: SML study's Evaluation Questions for each stakeholder group (General public and Specific organizations working in inclusive education)

1. **What is the content of social and online media discussions on inclusive education in Kazakhstan?**
   Contents of what is being said, where, by whom, analyzed via quantitative text analysis techniques.

2. **What do people mention as factors 'holding back' (barriers) to inclusive education?**
   Mention of impediments to inclusive education in the online

3. **Do people mention state programs at all?**
   Programmes (if any) that find mention in online discussions on inclusive education

Figure 1: Social Media Market Share in Kazakhstan (January 22 to January 23)
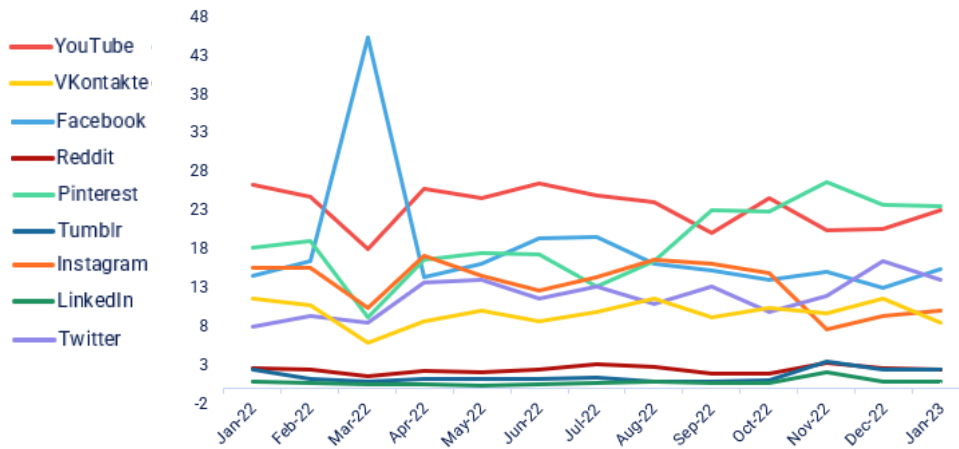
Roles and Responsibilities

The Evaluation Reference Group (ERG) under the leadership of the Ministry of Education in Kazakhstan was established prior to the start of the evaluation, and included education entities in charge of strategic development, policy formulation, non-governmental organisations, institutes and representatives of right holders. ERG contributed to the relevance, impartiality and credibility of the evaluation, providing a variety of points of view, and ensuring a transparent process. The participation of key stakeholders in the ERG also contributed to increased cooperation with the Ministry, other institutions and research teams, as well as to increase the culture and capacity of the evaluation approach among national partners. During coordination meetings, the ERG members exchanged information and feedback during the evaluation process, ensured access to key informants during data collection, took part in interviews with the research teams, reviewed and commented on the draft and the final versions of the report, contributed to the development of an Evaluation Management Response (EMR) and the recommendations.

Junction Bulgaria (JB) worked on the formative evaluation to assess the contribution of state education programmes on inclusive education from 2011 to 2021. JB is a company offering consultancy and evaluation services with an international team specialising in various areas, including social services, education, project evaluations, sociological research and strategic planning.

Oxford Policy Management (OPM) led the innovative inclusive education evaluation using big data sources of information to analyse publicly accessible social media data. OPM is an international development consulting firm providing analytical and practical support through its global network to support low- and middle-income societies.

Key Findings

1. **As of 2021, 11% of pre-school children with SEN in Kazakhstan attended special groups in regular kindergartens and 13% studied in special kindergartens.** Although the proportion of schools that have created conditions for inclusive education has steadily increased since 2011, the emphasis has mainly been on physical access. This was a priority area until the middle of the assessment period, after which more resources were allocated to digitisation and teacher salaries. However, despite these positive steps, the Formative Evaluation found that there continues to be a requirement for more investment in physical school infrastructure.

2. **Inclusive education in Kazakhstan is a topic of ongoing discussions online and there is an overall increasing trend in such discussions mainly on news, blogs, and other portals.** Organisations working on inclusive education mostly use platforms like Instagram and Telegram groups. In comparison, the general public's engagement with the topic is higher on platforms like news sites, blogs, and Facebook.

3. **Negative news and discussions on social media showed a lack of protection of the rights of children with SEN.** Incidents of abuse, violence, and bullying in kindergartens and schools were identified as important barriers to inclusive education. These have also been identified by the Kazakhstani government, which has made efforts to address quality issues, improve standards, and establish minimum safety requirements in early childhood education. Analysis of social media data also shows that the capacity building of teachers, specialists and need for pedagogical process changes are important obstacles to overcome.

4. **Positive news highlights measures taken to support children with autism, prevent disability through early detection, better diagnostics, and the equipping of perinatal centres to prevent disability in newborns.** A hashtag analysis in Corpus 1 showed that autism and cerebral palsy were the most widely discussed disabilities. Also, the adoption of testing for children with SEN was actively discussed, as indicated by the United National Testing (EHT) hashtag. Analysis of the most frequently used words from Corpus 2 and topic analysis showed discussions focused on capacity building of teachers, specialists and measures to support inclusive education.

5. **There are large regional differences in discussions on inclusive education and specific aspects such as parental and community involvement in decision making.** Social media discussions on inclusive education are concentrated in large urban cities like Astana and Almaty, even after adjusting for their higher population densities (Figure 2).

Figure 2: Spatial concentration of messages on inclusive education
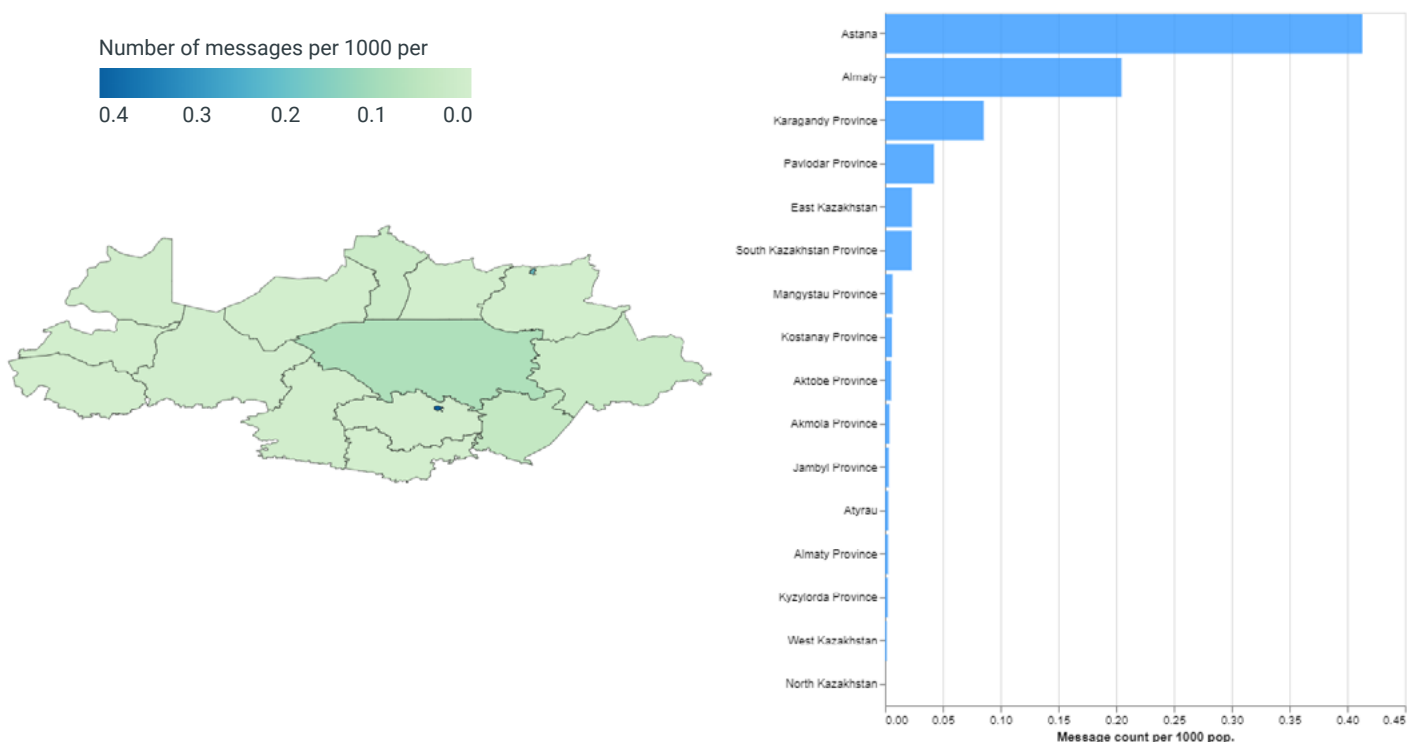
6. **Some of the key priority areas like engagement with parents and involvement of the local community in identifying priority areas found little mention in state programmes.** This was despite government's policies being consistent with national development goals and international conventions on inclusive education. Similarly, migrant children or those in conflict with the law, which is an important category of children with SEN as per the legislations of the government, were mentioned only in one of the state programmes. The social media analysis also found mention of 'Educated Nation' (Образованная нация) and 'Comfort School' (Комфортная школа).

7. **There was very little mention of gender equality in state programmes. An analysis of online discussions on education revealed that 75% mentioned boys and only 25% mentioned girls.** Online discussions on inclusive education have comparable shares, which showed that girls were underrepresented in both areas.

Ethical Considerations and Limitations

As values driven organsations, both JB and OPM were respectful of the rights of the participants in this research and complied with UNICEF's guidance on children in research. In particular, a set of ethical principles in conducting all fieldwork based on our own experiences and as per the United Nations Evaluation Group evaluation policy were followed.

Although the Big Data study did not evaluate any specific programmes, it adhered to international best practice standards in evaluation, and was consistent with the OECD DAC framework. Special emphasis was placed on privacy protection when using publicly accessible social media data. This also meant that the identities of individuals were anonymised. The posts of organisations working on inclusive education in Kazakhstan were retained through their official public social media handles.

While the use of Big Data offers an opportunity to include online discussions that would not feature within traditional survey-based evaluations, this approach carries its own limitations. These are listed below.

1. As social media perceptions on inclusive education were unknown a priori, the study deliberately stayed away from the discussion on effect sizes that emerges from specific hypotheses central to conventional quantitative evaluation studies.

2. Ability to analyse publicly available information on social media is constrained by factors such as conscious choice made by individuals and institutions to engage with social media platforms. Thus, the findings emerging from this study, although helpful in understanding multifarious perspectives on inclusive education, are not representative of the country or of any subgroup level.

3. As most social media platforms only keep digital records for a limited period, the analysis was restricted to slightly more than one year. The study was unable to provide insights into how these social media discussions evolved over the medium- to long-term.

4. To analyse the social media discussions of organisations working on inclusive education, a pre-trained Natural Language Processing (NLP) model was used to clean the raw text scraped from the web. As a result, slight differences in meaning, particularly concerning vocabulary that has a specific cultural connotation, might have occurred.

Conclusion and Recommendations

Strategic (focused on the sectoral and intersectoral policy changes)

1. Expand horizontal and vertical multisectoral coordination/partnership through robust coordination mechanisms among different stakeholders. Such collaboration is vital for greater resource mobilisation that is needed to further expand key physical and digital school infrastructure as well as address concerns around capacity building of teachers and specialists, which will equip them to better support students and provide an inclusive learning environment.

2. Resource allocation for children with SEN is highest for home schooling and is generally targeted at children with learning disabilities than at other vulnerable groups at risk of exclusion. It is proposed to ensure effective investments in inclusive education overall, focusing on pedagogy, leadership, technology, analysis of funding and per capita financing for promotion of inclusive education.

3. To ensure that the progress in upgrading physical and digital school infrastructure is not undone and continues, accessibility audits of schools and educational facilities must be undertaken for monitoring purposes. Accessibility audits can help prioritise necessary modifications and ensure compliance with the established standards of the government.

4. Develop an integrated inclusive education policy with greater collaboration between the education and health sectors. Early childhood development, early intervention, and prevention is critical in reducing the incidence of disabilities and identifying vulnerable groups of children and needs prioritisation. This may also allow a more comprehensive framework to protect child rights and tackle incidents of abuse and violence against them. Such an integrated approach will improve implementation and monitoring of government initiatives aimed at establishing minimum safety requirements in early childhood education.

5. Investments in equipping schools with appropriate assistive technologies can support students with SEN in accessing educational materials, participating in classroom activities, and effectively engaging with technology thereby fostering mainstreaming of these students and countering segregation into special needs institutions. Also, it is important to integrate the medical model and social model in conceptualisation of disability whereby a multidimensional view of disability takes precedence over characterisations based purely on diseases and disorders. One of the practical steps is to replace terminology such as "limited opportunities" with more inclusive and positive formulations to actively combat the stigma associated with disability.

6. Aspects of inclusive education in the field of technical and vocational education (TVET) are not indicated in government programmes. This requires expansion of inclusive education in the state programme at the TVET level.

7. High workload of PMPC and limited capacity for needs assessment of children with SEN requires further actions. This requires reviewing the role of PMPC, introducing control, referrals and transfer of functions to other services for comprehensive support, as well as reducing the workload and strengthening gatekeeping.

8. The FE revealed that planning and implementation of inclusive education policies is mostly based on a top-down approach. Some important steps that would foster an inclusive approach to framing these policies include establishing partnerships between schools, teachers, parents and children, and provide more rights and opportunities in the development of "change projects" for directors and other stakeholders. A participatory approach for review and validation of the proposed ToC for the new education policies with all the stakeholders is also recommended.

Practical (focused on development and quality of services)

1. Creating enabling conditions for greater participation of different stakeholders to facilitate a bottom-up decision-making process, which is better suited to cater to the differentiated requirements of children coming from varied socio-economic, cultural, and regional backgrounds. To better understand these differentiated needs, more research on inclusive education needs to be undertaken in form of regionally representative studies, particularly in media dark areas where SML analysis tools or qualitative studies from other areas offer limited insights.

2. Combating stigma associated with SEN and use of more inclusive language can be tackled through differentiated social media messaging from the government. This may leverage the finding that general audience's engagement with the topic is higher on platforms like news sites, blogs, and Facebook. In comparison, organisations working in inclusive education mostly use platforms like Instagram and Telegram groups. Thus, the government may use different social media platforms to engage with different stakeholder groups.

3. The positive perception on professional development and capacity building of teachers shows that flexibility in engaging with innovative pedagogical approaches needs to be further prioritised. With greater digitisation and use of innovative approaches to teaching, regular skill upgradation sessions would also be needed for teachers and specialists so that they are updated with methodological material in local languages and have access to digital resources.

4. The FE revealed that teachers often use a narrow definition of inclusive education, which only caters to children with SEN but ignores other vulnerable groups. Often, there are more specialists working with the former rather than the latter group. This needs to be addressed. Some steps that may help bridging this gap include implementation of innovative methods for teaching all children, increasing wages and providing flexible working conditions to those teachers who work with vulnerable children.

5. Adopting a holistic approach to inclusive education that also includes development of soft skills such as communication and teamwork. The advent and scaling of innovations like Artificial Intelligence (AI) and Machine Learning (ML) makes these skills even more valuable as it prepares children to collaborate effectively with technology and enhances their adaptability, creativity, and emotional intelligence.

6. Given that there is very little mention of gender equality in state programmes and that the SML analysis finds that girls are underrepresented in discussions on inclusivity, more attention needs to be paid to differential needs of girls in the educational system. This would require collection of indicators on inclusive education that can be disaggregated by gender to identify gender-specific factors limiting access to inclusive education.

Operational (focused on coordination, M&E, guidance)

1.   The FE found that different Inclusive education programmes often have different goals and outcomes. For example, stakeholders may interpret the target indicator such as "Share of educational organisations that have created conditions for inclusive education" differently. It is proposed to deliver coordinated planning for inclusive education with clear objectives and participation of all stakeholders. Moreover, to monitor progress in inclusive education and undertake regional and group wise comparisons, it is vital to define a clear, common goal and target improvements through specific, measurable indicators. Developing reliable and measurable outcome indicators in inclusive education should also be prioritised.

2. It is important to develop mechanisms for integrated planning of the implementation of the state education policy with clear division of tasks, timelines, and responsibilities of the different line ministries and implementing agencies.

3. To facilitate development, validation and upgradation of new educational policies, the suggested ToC in the FE needs to be reviewed through extensive stakeholder consultations.

4. SML studies use of non-traditional data and analytical methods, which provides a space for experimentation and engagement with different viewpoints, some of which may be difficult to observe and are thus often left out of traditional methods and approaches. Given these advantages, they can complement traditional evaluations to support improvements in inclusive education.

Looking Ahead

This report synthesises the findings and recommendations from two complementary studies that conduct an evaluation of Kazakhstan's educational programmes on furthering inclusive education and summarise perspectives and barriers to inclusive education. Mixed methods research and use of such non-traditional sources of data and analytical methods are often difficult to observe and are hence left out of the traditional research methods and approaches. The recommendations synthesised from the two research outputs may assist the Government of Kazakhstan in designing new strategies and interventions that can provide equitable and high quality of education to all its children. Moreover, these studies provide a use case for these innovative methodological approaches that can complement traditional research methods to provide robust and actionable insights on themes not necessarily restricted to inclusive education.

Theory of Change (Formative Evaluation)

Major bottlenecks

Enabling environment:
- The concept on inclusive education is developed but is still in the beginning of implementation
- Public attitudes are slowly changing, but still discrimination and stigma exist, especially in certain regions.
- Lack mechanism for coordination/ partnership in the education sector and at the multisectoral level
- Centralized and no participatory mechanisms for planning, monitoring, and evaluating educational provision for children at risk of exclusion from quality and adapted education, due to family, social, economic, and/or individual conditions
- Centralized per capita financing oriented to the children with SEN

Demand:
- Many children with SEN at an early age do not have access to inclusive preschool education
- School/Pre-school (ECEC) infrastructure does not fully meet the existing needs
- The scope of basic secondary education is oriented towards receiving knowledge rather than skills
- Many families of children with SEN use private educational services while those services are not affordable for all
- Systematic problems in early identification and early intervention and prevention
- No transition to ensure continuation of the curriculum between early childhood, primary and secondary education

Supply:
- The existing network of preschool education organizations does not respond to the needs of inclusive education
- Work overload of PMPCs and lack of capacity for needs assessment of children with SEN
- Teacher education programmes, both preservice and in service, do not fully address the provision of inclusive education in schools/ECEC
- The school environment for learning, material and technical base and digital infrastructure of educational organizations are not fully developed to meet the needs of children

Quality:
- The individual programmes for students with SEN are oriented towards knowledge development rather than skills building
- There are no tailor-made approaches for working with the other groups of vulnerable children at risk of exclusion, apart from children with SEN
- Not enough materials and methodological materials in Kazakh language
- Professionals and specialists are often inadequately trained and are not familiar with gender responsive pedagogy
- Strict methodological requirements for teachers on how to work with children with SEN
- Low quality of screening, ICF is not implemented
- There are regional differences in quality of working with children with SEN

Assumptions: Capacity development of teachers and flexibility of their work will ensure implementation of the individual approach

If early intervention and identification is developed, support for the children will start earlier and they will more easily be included in educational activities and there will be a bigger return of investment.

An integrated effort of work between the three systems would ensure inclusion of all groups of children.

ENABLING ENVIRONMENT

SUPPLY

QUALITY

Risks: Rushing into preparation of teachers could make it difficult to know what the next steps are to follow.

Too much focus on early intervention, instead of the other system components (like secondary and vocational education).

Per capita financing could lead to an increase in the number of children studying in "special classes or home-based education".

Government Institutions

Local Institutions

Outputs	Outcomes	

2030

Development of mechanism for coordination/ partnership/planning at the horizontal and vertical level

Policy development in the direction of integration between services at the local level.

→ Strengthening partnerships and multisectoral coordination

Development of early identification and early intervention services

Development and planning the investments in the pedagogy, leadership, and school environment for learning, accessible for all children

Focus on ECEC services in terms of pedagogy, capacity development and leadership.

→ Universalizing access and promoting equity and continuation of the services for children at different ages

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (SDG 4)

Empower teachers to work flexibly and be gender responsive

Ensuring a system for continuous professional development at all levels of education

Development of methodological materials accessible in different languages for children at a different age with different needs

Implementation of integrated and multisectoral approach in assessment and planning of the school programmes on the individual level

→ Broadening the means and scope of basic education to support children holistically

School and professional communties

National and International NGOs

Children and Familes

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