2023 LEAP CHALLENGE

LEAP Final Deliverable(s)

Project Host:

Dignitas

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Executive Summary

Introduction

Dignitas partners with schools across Kenya to provide evidence-based training and coaching that strengthens school leadership and improves instruction. The LEAP Project aimed to provide key resources to underpin Dignitas' current work focused on inclusion of marginalised, neurodiverse children in Kenya's schools. Evidence-based resources included a literature review, learning briefs and a competency framework. Together we hope these resources support Dignitas in their mission to transform opportunities for the next generation.

Organization's role & strength

Dignitas is a leading education organisation whose mission is to equip and empower school leaders and teachers who will transform opportunities for the next generation. Dignitas partners with schools to strengthen leadership and improve instructional quality, in order to create an environment where all children can fulfil their potential.

Dignitas is founded on the belief that School Leaders and Teachers are everyday superheroes with the power to transform children's futures when supported with the right training, support, and community. The following values guide us:

- We are passionately purpose driven
- We co-create solutions with schools, communities, and system actors
- We find joy in our work, our team, and our communities
- We found partnerships in trust and transformative impact
- We are always listening and learning

Need summary

As Dignitas seeks to support schools to advance inclusion of neurodiverse learners, the organisation identified four key questions for the fellow team to address through four key deliverables. The questions focused on:
- the current status of neurodiverse children in underresourced settings in Kenya;
- effective instructional strategies for the inclusion and support of all learners;
- the mindsets, competencies, and practises school leaders and teachers need to embrace learning variability; and
- how teachers, school leaders, and school leader supervisors can better collaborate to promote integration of neurodivergent children.

The fellows sought to answer these questions through a literature review, learning briefs, and a competency framework, each designed to provide actionable information to the Dignitas team

and school leaders working with marginalised neurodiverse children in under-resourced settings in Kenya.

Solution summary & next steps

Across a 12 week sprint the fellow team, in close collaboration with Dignitas, developed four key deliverables. The first was an extensive literature review that covered the four key outstanding questions highlighted by Dignitas at the beginning. This literature review was supplemented by two concise, actionable Learning Briefs. The first Learning Brief focused on how teachers, school leaders, and school leader supervisors could better collaborate to promote integration of neurodivergent children. The second Learning Brief covered the effective instructional strategies for the inclusion and support of all learners, and specifically neurodivergent children, in under-resourced settings. Finally we developed a single slide competency framework to provide a clear set of four key competencies for teachers and school leaders to enact inclusive educational practices. Together, these deliverables will augment Dignitas's existing evidence-base and provide clear and up-to-date evidence that can support the organisation as they provide training and coaching to schools focused on inclusion of neurodiverse learners. Dignitas also plans to share some of these deliverables more widely to become a public good for the field at-large.

Literature review

Inclusive education that supports and nurtures the development of every child is essential. Providing inclusive education has become a priority for countries around the world. However, doing so can be more challenging in some contexts than in others. In this review we specifically address the question of the current status of marginalised neurodiverse children in Kenya. We tackle this question with the aim to define the current status and provide an evidence base that can inform effective instructional strategies for the inclusion and support of all learners. This includes neuro-divergent children, and in under-resourced settings, such as the setting in many Kenyan Schools. In this review we also highlight the importance of embracing variation amongst different learners to turn challenges into opportunities for education, and to do so with dignity.

Defining neurodiversity and marginalisation

Neurodiversity refers to a wide range of specific, non-specific, hidden and/or undetermined differences in how individuals process information that are natural variations and may have benefits (Rentenbach & Prislovksy, 2016). There is not widespread understanding of the term neurodiversity, with the term first appearing somewhat recently in the literature (Dwyer, 2022). It is important to be clear that neurodiversity itself is not a diagnosis, although in settings with clinical facilities available diagnosis may form part of an understanding of the specific needs of a neurodiverse child. When labels referring to diagnosis are used, neurodiverse diagnoses typically cover Learning (intellectual) and/or Developmental Disability (ID/DD); Communication Disorders (CD), autism or Autism Spectrum Disorder (ASD), Attention Deficit/Hyperactivity Disorder (ADHD); Specific Learning Disorders (SLD); Traumatic Brain Injury (TBI); and or Foetal Alcohol Syndrome Disorders (FASD).

Defining neurodiversity is further challenging as a concept because it encompasses needs across a wide spectrum of degree and intensity, and children and young people can be 'twice-exceptional' where they are considered to be both gifted and have neurodiverse challenges (Reis et al., 2014). Children can also experience co-morbidity where multiple variations occur in parallel. Having a range of learning challenges can make it difficult to understand and respond to individualised needs. However, neurodiverse learners can also have overlapping strengths (**Figure 1**). Educators have a key role to play in making these strengths of neurodiversity more widely appreciated (Retenbach et al, 2017). By doing so they may also help reduce marginalisation and empower different learners to thrive and contribute to wider society and culture.
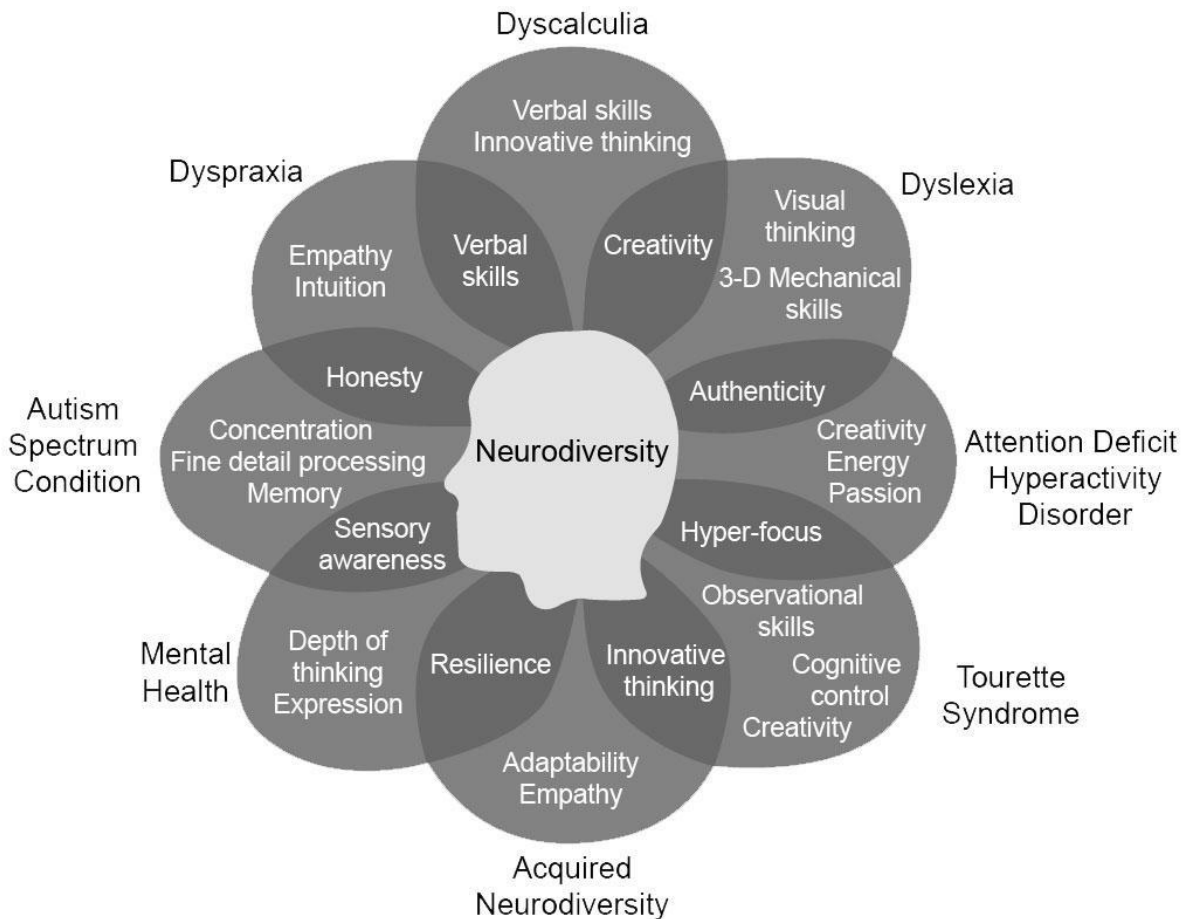
Figure 1. The overlapping strengths of neurodiverse learners. Adapted from Prof. Nancy Doyle. Neurodiversity can be associated with specific diagnoses or labels in clinical settings where diagnostic assessment is available. However, neurodiversity itself is not a diagnosis or disability. In fact individuals who are neurodiverse may also present with different strengths in processing information such as innovative thinking, creativity and empathy. It is essential that educators appreciate the strengths of neurodiverse children as well as understanding how to respond to challenges they may experience in a learning context.

In addition to learners sometimes having multiple challenges, they also may experience marginalisation, both related to their neurodiversity and to the cultural and community setting in which they are situated. marginalisation refers to social exclusion of a community of individuals based on a perception that they are different to the majority of society (Unterhalter et al., 2012). This means that marginalisation includes the process or situation where certain groups or individuals are treated as less important or pushed to the edge of society. marginalisation can affect people's behaviour towards others as well as their cognition in how they think and act

toward these individuals or groups. When people are marginalised, they are often excluded from the full benefits of society, which can affect their education, health, and well-being. From a sociological perspective, marginalisation occurs based on structures of inequality and discrimination in society which put particular groups in particular positions based on poverty, race, gender or ethnicity (Unterhalter et al., 2012).

In Kenya specifically, there are several communities that may experience marginalisation (National Gender and Equality Commission, Kenya). These include indigenous communities with a traditional lifestyle and livelihood, individuals in informal settlements, pastoral persons and communities that are nomadic or settled but because of geographic isolation is not widely integrated (National Gender and Equality Commission, Kenya).

The current status of neurodiverse learners in under–resourced settings

*Statistics of the prevalence of neurodiversity*

In 2018, a national survey on children with disabilities and special needs in education (Chabeda-Barthe et al., 2019), was conducted by the Kenya Institute of Special Education (KISE). The survey gathered statistics for children and adolescents aged 3-20. The final sample included 7609 young people of which 865 had disabilities/neurodiversity. This translates to a prevalence rate of 11.4%. This is roughly comparable but perhaps lower than surveys conducted in other countries such as the UK (15% according to National Health Service England, 15-20% 'worldwide' according to some studies, Doyle, 2020). Clearly in low-resource settings where diagnoses are much less prevalent estimating a true percentage is a challenge. In terms of the demographics from the Kenyan survey, around half were boys and half were girls. For types of disabilities, visual ones were the most prevalent with 3.1% followed by physical at 3% and intellectual at 2.5%. Together these statistics highlight the strong importance of supporting neurodiverse learners. They comprise a significant proportion of the population. It also highlights the need for schools, communities and educators to provide support for inclusive education that scaffolds the requirements of all children and young people.

Neurodiversity in Kenya: Government investment and current policies

The government of Kenya has started to develop policies to foster an inclusive education system. In 2009, the Special Needs Education Policy Framework highlighted the need to support learners with special needs, including those with disabilities as well as those marginalised for other reasons (e.g., displacement). In 2012 the Basic Education Act broadened

the scope of "special needs" to include those with less visible disabilities, including learners who meet the above definition of 'neurodiverse'. In 2018, the Sector Policy for Learners and Trainees with Disabilities, prioritised inclusive education for all learners. Relatively less has been publicised on the *success* of implementation of these policies. One measure—albeit indirect—of implementation is government spending on inclusion programs. A recent report (Owino, 2020; see **Figure 2**) suggests that, despite policy expansion over time, spending has remained relatively stable and even shows a recent dip. This pattern is concerning, as it points to a potential barrier to the successful implementation of inclusive educational practices.
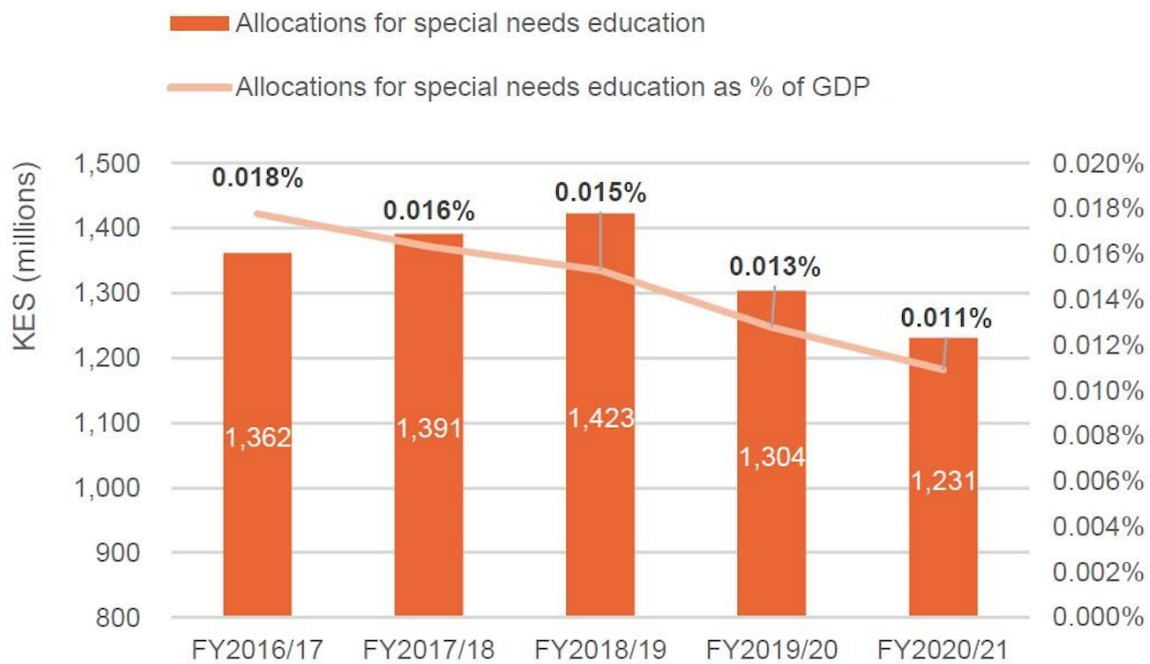
Figure. 2. Figure from Owino (2020) showing spending on special needs education in Kenya.

Attitudes and perceptions of neurodiverse learners

In thinking about strategies for inclusive education for neurodiverse learners, it is critical to consider the experience of such learners within the broader socio-cultural environment. This is not as straightforward as it would seem, even when considering learners in a single country. Within Kenya, there are myriad cultural norms and forces that differ markedly regionally and shape the experiences of neurodiverse learners. Consequently, a tidy summary of attitudes and perceptions that provides comprehensive coverage of attitudes across regions is virtually impossible. What we can do, however, is review the *kinds* of perceptions that influence the experience of neurodiverse learners and thus that should be considered in designing and implementing educational strategies.

Attitudes and perceptions as a nested issue

Consideration of attitudes and perceptions that influence the experience of neurodiverse learners in low resource settings in Kenya requires an appreciation of the nested structure of individuals within families and schools within communities within the country. Attitudes and perceptions at each of these levels can profoundly influence the ways in which neurodiverse learners interact with others. Appreciating the multilayered nature of these attitudes and perceptions can also help inform strategies to promote inclusions, as any strategies should be clear about the 'level' at which they operate. The following section provides a brief review of attitudes and perceptions of neurodiverse learners in Kenya. Note that this review draws somewhat on the existing literature on children with disabilities in Kenya, as there is a relative paucity of work that has explored the attitudes and perceptions of neurodiverse learners in low resourced settings in Kenya more specifically.

Cultural beliefs that shape perceptions of neurodiverse learners

A commonly held approach to people with disabilities is one of deficits, although there is an active move to shift away from this approach toward a mindset that construes disability as a "natural human phenomenon" (Ressa, 2021), normalising this as part of the human experience and opening up avenues for the appreciation of strengths of individuals with disabilities.

Grounded in a model developed by Ingstad (1990), Bunning et al (2017) explored attitudes and beliefs toward disabled others in the context of Kenya (see **Figure 3**). Through interviews they found that respondents appealed to a plurality of explanations, including those centred on the *self* (e.g., past misdeeds) or *outside the self* (e.g., supernatural forces, see also Cloete and Obaigwa, 201)). As an illustrative example, Gona et al (2015), conducted interviews with focus groups to assess perceptions of the causes of ASD on the Kenyan coast and found that people commonly appealed to supernatural causation (e.g., curses). Treatments sought out by people often reflected these beliefs, with families visiting healers and offering prayers to God in addition to seeking treatment at hospitals. A key conclusion was that people are actively seeking explanatory frameworks for disability and neurodiversity, suggesting that this is an important target of intervention efforts for inclusion.

Greer and colleagues (2022) conducted an in-depth study of attitudes and perceptions of people with ASD in Swahili culture in Kenya. While certainly not representative of cultural beliefs of people in Kenya more broadly, this serves as a useful case study illustrating the importance of considering community attitudes toward neurodiverse learners. People in Swahili communities are predominantly Muslim and many beliefs are thus anchored in their religion. Children with ASD are perceived to reflect poorly on the family and, as described above, the

causal explanations for this neurodiversity are commonly attributed to parenting (Cloete & Obaigwa, 2019; Gona et al., 2016). Additionally, causal explanations are attributed to supernatural causes. Together, findings from this work, which was based on data from semi-structured interviews, showed that stigma and lack of awareness are key issues for people with ASD.

Greer et al summarise their findings, writing: *"Central were the issues of stigma and lack of acceptance in having a child with ASD. Both were dominated by the lack of awareness, however the participants voiced that the ongoing cultural perspective was also due to lack of directive and funding from the government. This is consistent with other research in low-middle income countries whereby the narrative is driven by lack of awareness, acceptance, and appropriate education and support for individuals with developmental disorders, their families, and the wider community."*
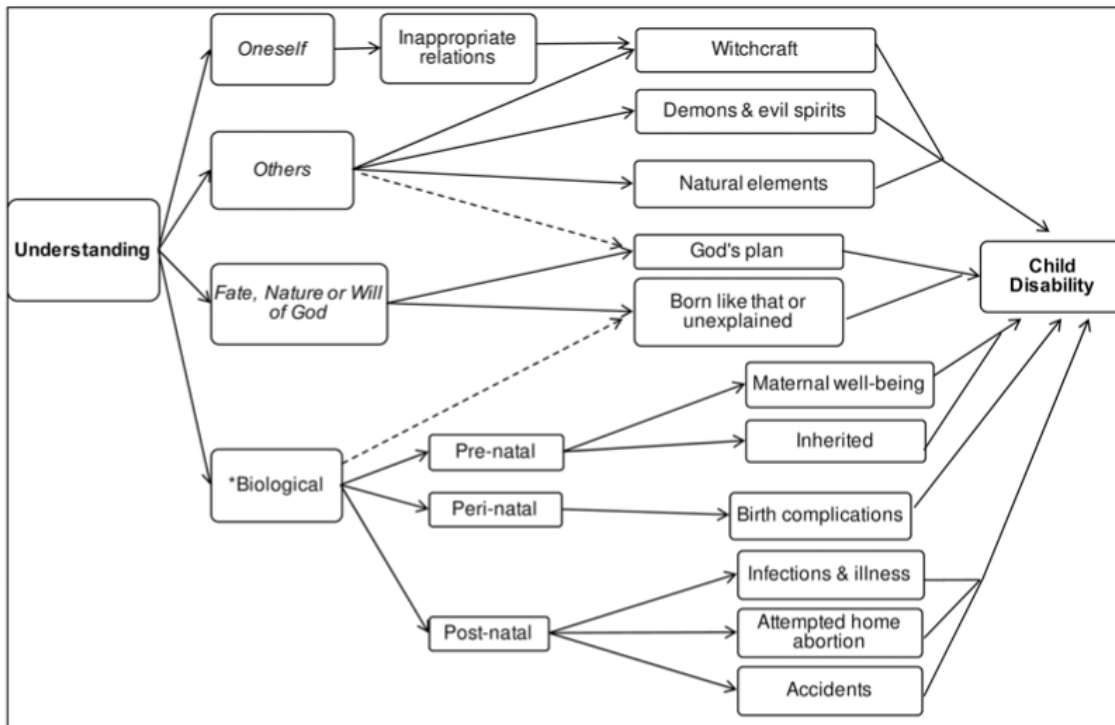
Figure 3. Figure from Bunning et al (2017) summarising local perceptions of disability in Kenya.

Before turning to the consequences of attitudes and perceptions of neurodiverse learners, it is worth considering the attitudes and perceptions of specific agents: *learners* and *teachers*. There is a distinct lack of empirical work exploring (1) perceptions of neurodiversity from the learner's perspective (or the perspective of their peers), (2) learner and teacher perceptions in low resource settings and (3) perceptions in educational settings that target young learners.

Perceptions at the level of the learner and their peers

A recent study conducted focus groups with students enrolled in a program of graduate study in STEM fields who identified as neurodivergent. Students reported that they attempted to fit in by "conforming with neurotypical norms" due to concerns about negative evaluations from their peers (Syharat et al., 2023). A similar result was found in a study exploring autistic college students (Underhill et al., 2022). This same concern of stigmatisation was found in a recent literature review, again focused on the context of higher education (Clouder et al., 2020). This review found that students may delay disclosing their diagnosis due to fear of stigmatisation. Fears of stigmatisation by peers and teachers may be experienced by learners in contexts outside of the context of higher education. Creating an inclusive, welcoming environment may importantly help assuage student's concerns of revealing this part of themselves. Finally, some recent work suggests that interventions in educational settings should be designed with student input (Gillespie-Lynch et al., 2017). Of course, this is perhaps more feasible with older learners than younger learners, but the broader point is that student experiences and perceptions should be examined and considered when designing and implementing interventions to support their learning and development.

Teacher perceptions

In designing interventions to support neurodiverse learners, it is important to take into account the attitudes and perceptions of teachers. Teachers are key stakeholders in inclusion efforts, and their attitudes can be important constraints or important enablers of successful interventions. While little work exists that explores teacher's perceptions of neurodiverse students in Kenya, this area has been explored in other cultural contexts. For instance, a study that explored teacher perceptions in the United Arab Emirates revealed a set of findings that are particularly relevant to the goals of this project (Dev & Kumar, 2015). They write (this section has been edited for clarity and typos): "teachers had an overall negative perception towards integrating students with learning disabilities in the normal classrooms. The analysis confirmed that the age, gender, educational level of the teachers and awareness about LD [learning disabilities] had a significant influence on their entire perception about the integration process. Some important variables are discussed in the following paragraph. The teacher's willingness to integrate students with LD is also significantly related to different support systems provided by the school. Teachers were more willing to support LD students, provided they get adequate resources and support systems from their respective schools." Another study, which was conducted in the Bahamas, asked teachers about their perceptions of inclusive education (Hunter-Johnson et al., 2014). They found that "ninety percent of the teachers interviewed expressed negative perceptions of inclusive education. It was also revealed that the most

prevalent influencing factors of the teachers' negative perceptions were lack of training in special education and inclusive education, and lack of resources."

Consequences of attitudes and perceptions

It is important to emphasise the key consequences that these attitudes and perceptions carry for neurodiverse learners. Negative attitudes and perceptions may be at the root of many of the difficulties faced by neurodiverse individuals and are the direct cause of family disruption and displacement (e.g., families move to support children with special needs; Chabeda-Barthe et al., 2019). This has clear repercussions for interventions aimed toward improving support for neurodiverse learners in low resourced settings in Kenya: it is crucial that parents feel well-supported (see Sarton & Smith, UNICEF) and, failure to consider this, may lead to poor uptake in parents sending children to schools with inclusive curricula. Another consequence of shifting attitudes is that doing so may encourage a more focused and intentional development of infrastructures to support children with special needs (see Rosa, 2021 for a study of infrastructure for children with disabilities in Kenya). Additionally, violence against people with disabilities is a critical issue in Kenya (Prince, 2009, as cited in Ressa, 2021). A report from the United Nations Population Fund (UNFPA, 2018) found that people with disabilities are at increased risk of violence. Specifically, they report that "three percent of persons with disabilities report having experienced violence within the past year, this percentage increases substantially for persons with mental disabilities (Hughes et al., 2012). Persons with disabilities are three times more likely to experience physical violence, sexual violence, and emotional violence than persons without disabilities (Management Sciences for Health & UNFPA, 2016)." While not specifically focused on the Kenyan context, it is reasonable to expect that these general patterns generalise to other contexts. Importantly, this raises an important opportunity for intervention at different levels (school, community, etc). One concrete recommendation of this work is that interventions should involve efforts to raise awareness about the heightened risks of violence faced by neurodivergent students.

Another locus of consequence that is important to consider is how these perceptions feed into treatment of students by teachers. For instance, work has shown that teachers' attitudes toward neurodiverse learners are, at least in part, shaped by students' sometimes disruptive behaviour (Genovesi et al., 2022). This, in turn, relates to feelings of disempowerment (Genovesi et al., 2022) and, thus, teachers' attitudes and the forces that shape them must be considered in designing effective strategies for inclusion of neurodiverse learners.
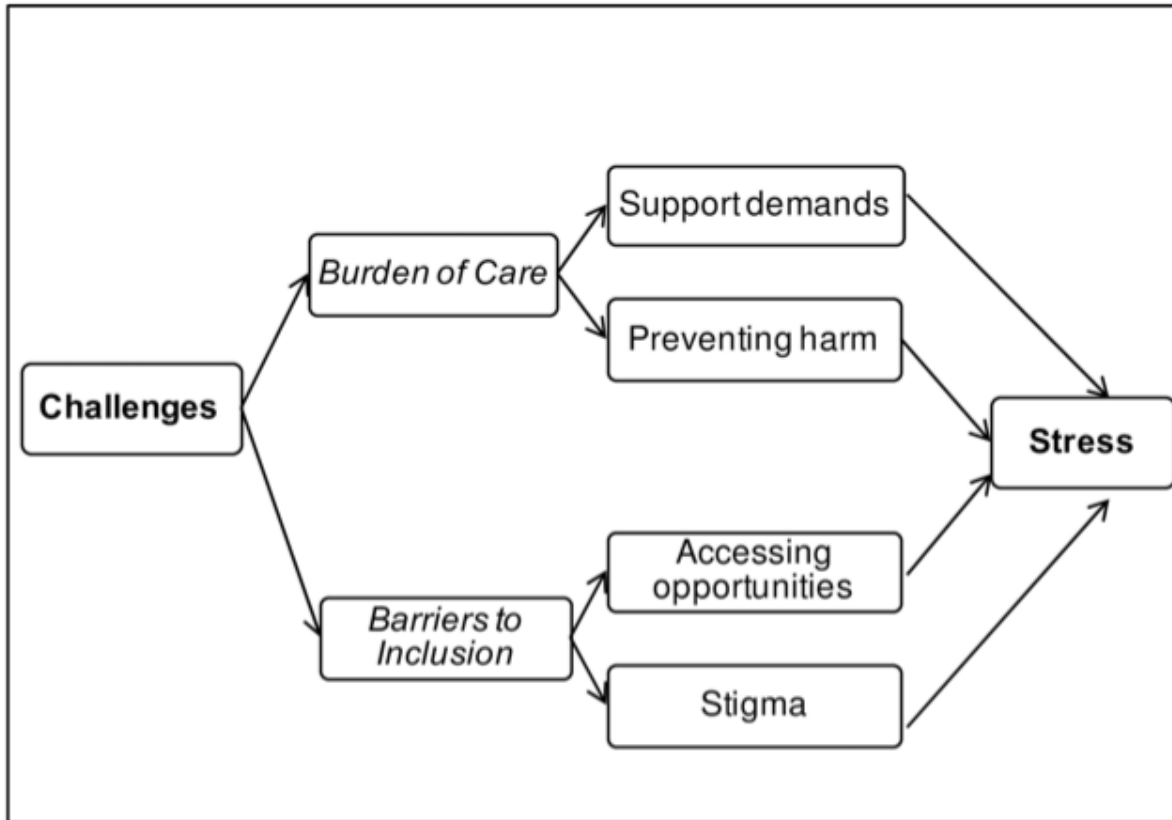
Figure 4. Figure from Bunning et al (2017) summarising challenges associated with disability in Kenya.

Looking forward

Existing evidence of attitudes and perceptions of neurodiverse people paints a complex picture. Attitudes and, therefore, treatment of neurodiverse learners are shaped by cultural beliefs that exist in concert with other aspects of the rich socio-cultural environment in which learners exist in Kenya. Due to the complexity of these attitudes and perceptions, and their sources, the literature does not point to a simple solution for shifting mindsets toward those that will be more conducive to inclusion of neurodiverse learners. However, some positive patterns have emerged from the literature and these are helpful to highlight. For instance, Lim et al (2023), conducted an intensive literature review of close to 2,000 publications that focused on developmental disabilities in Africa. They identified a shift away from the concept of disabilities per se and toward larger networks of care, within which people with disabilities are situated. Second, Ressa (2021) explored inclusion strategies in Kenya for people with disabilities, calling for a "reconceptualization of disability within a broader model of equity in the Kenyan education system." Finally, an area that requires increased attention in future work is exploring caregivers' access to- and use of healthcare systems. Work shows that caregivers

face challenges accessing support from professionals. Illustrating these challenges, one caregiver interviewed in a study about children with ASD said: "I wish this department understands what we (care givers) undergo when we come from far, we have to make payment at cash point, these children become restless and agitated, sometimes you are told there's a network problem at the cash point, it's bad! Imagine I come all the way with this child, one hour another hour! I am told cash points are not working, can you arrange we make payments at occupational therapy department?" (Obaigwa & Cloete, 2019). Other work points to the financial burden that caregivers face in caring for children with ASD in Kenya (Masaba et al., 2021) and suggests that these financial challenges are compounded by concerns around stigmatisation. More work across these areas will be needed to help shift attitudes away from a deficit model of disability and to support neurodiverse learners in more inclusive families, schools, and communities.

How can teachers and school leaders, and school leader supervisors better collaborate to promote integration of neuro-divergent children?

The most recent view to schooling of neurodivergent children is to promote integration in mainstream classrooms, in what is currently called inclusive education. This approach has demonstrated positive effects on student achievement and social wellbeing – for all children – and the literature suggests that it is far more efficient and effective than special schools and special classrooms.

Successful inclusive education requires school transformation and systems change. Even though policy-makers and even school leaders often believe this change is resource-intensive, much of the required reform is design-focused and involves simple and intentional changes in perception, training and in-classroom implementation. Inclusive education is a continuous process of educational transformation, and a clear set of equity indicators, that bring a positive impact in student learning for all children with many different attributes such as ethnicity, language, gender, and socio-economic status.

Measuring the success of inclusive education should go beyond merely counting students to evaluate access, but should include measures of educational quality, outcomes, and experiences. The following strategies have been suggested to assist school leaders in promoting the integration of neurodiverse students in collaboration with teachers.

> **Provide information on neurodiversity and the impacts of inclusion.**
>
> - ○ When teachers have not received training, research shows that they exhibit negative attitudes towards inclusion of students with disabilities. When training is provided,

perceptions changed and teachers were not in favour of segregation of learners with disabilities (Genovesi, 2022).

- Specialised training in inclusion for school leaders helps to create an inclusive school ethos.

- Include specific communication with parents and families for a collaborative approach between school staff and families.

Have a strong leadership team that promotes inclusive values.

- School leadership is crucial for the successful implementation of inclusive education (Schuelka, 2018; Shogren, et al., 2015; Villa & Thousand, 2016).

- Often the most inclusive and high-quality schools are those that have leaders who lead with vision, inclusive values, motivation, autonomy, and trust in school staff (Schuelka, Sherab & Nidup, 2018; Sherab, et al., 2015).

- Leadership that is attentive to bias and segregation can change local practices to provide a more inclusive environment, limiting unwanted consequences, such as the school-to-prison pipelines. DeMatthews and Mawhinney (2014) describe two principals who took issue with how neighbourhood, socioeconomic status, and race influenced teacher perceptions and deficit-laden practices.

- In a study in Kenya, none of the principals surveyed received formal leadership training before taking up their roles as principals, and participants expressed the desire to have more leadership training (Lopez, 2021).

- Instructional leadership and promoting a safe and orderly environment were among the most important leadership factors for academic achievement in many schools in a study conducted in South Africa (Zuze, 2018). Another study identified commitment to serve, leading by doing, trust in those one works with, self-belief, firmness against distraction, and maximum utilisation of available resources and accountability, as the most important characteristics to promote positive results in areas of multiple deprivation in South Africa (Chikoko, Naicker and Mthiyane, 2015).

- Nonconformist attitudes can also promote change. Theoharis (2007) described how principals applied intersectional lenses to "make issues of race, class, gender, disability, sexual orientation, and other historically marginalising factors central to their advocacy, leadership practice, and vision" (DeMatthews, 2020).

Collectively assess the current situation in school-wide inclusive practices.

○ Help schools understand their own challenges, assets, resources, value frameworks, stakeholders, and where to locate data and evidence, are key to a successful inclusive education implementation. (i.e. Booth & Ainscow, 2011; Rieser, 2012; Swift Center, 2018; UNESCO-IBE, 2016) (Schuelka, 2018).

○ Below is a helpful set of indicators is provided by UNESCO-IBE (2016, p. 47) for school leaders to review their schools:

1. Everyone is made to feel welcome
2. Students are equally valued
3. There are high expectations for all students
4. Staff and students treat one another with respect
5. There is a partnership between staff and families
6. The school is accessible to all students
7. Senior staff support teachers in making sure that all students participate and learn

Provide meaningful and continuous training for teachers designed to shift mindset and practice.

○ Provide training on emotional intelligence (EI) for teachers, since teachers who possess emotional competencies are more likely to make inclusive education possible and successful. Higher rates of EI are related to resilience in response to negative stress and a lower likelihood to exhibit strong negative emotions (Rajendran, 2020).

○ Even though evidence supports that short-term, 'parachute' trainings in inclusive education techniques are limited in terms of impact and systemic change (Fullan, 2007; Kuroda, Kartika & Kitamura, 2017; Rose & Doveston, 2015), providing sustained and continuous in-service development on inclusive pedagogy can have a positive effect (Schuelka, 2018).

○ Providing high quality mentoring to novice teachers improves teacher practice. However, a study found that, even though there are a limited number of veteran special educator mentors, veteran general educators can successfully serve as mentors for special educators who are novices. (Cornelius, Rosenberg & Sandmel, 2020).

○ Teachers may also experience stress in teaching in an inclusive way, which impacts their practice and needs to be addressed in training courses (Forlin and Chambers, 2011).

○ Teachers can also be motivated to be more inclusive by providing more structured and supported expectations as to how they teach and as to what inclusive education

'looks like' in the classroom. UNESCO-IBE (2016, p. 109) suggests that there are eight indicators that can help teachers review their classrooms:

1. Teaching is planned with all students in mind
2. Lessons encourage the participation of all students
3. Students are actively involved in their own learning
4. Students are encouraged to support one another's learning
5. Support is provided when students experience difficulties
6. Classroom discipline is based on mutual respect and healthy living
7. Students feel that they have someone to speak to when they are worried or upset
8. Assessment contributes to the achievement of all students

Facilitate collaboration and reciprocal support among teachers.

○ Teachers often feel that inclusive education is something they are told to do – often without support and resources – and it becomes a top-down burden rather than a collaborative process (Singal, 2009; Schuelka, 2018). Providing a collaborative environment where teachers exchange best practices and feel supported can mitigate this perception.

○ Teacher collaboration enables the development, implementation and evaluation of instructional improvement strategies tailored to the specific needs of students. Teachers must become involved in their own professionalisation and take on the role of instructional leaders in turn. By adopting a collaborative approach, teachers can explore other pedagogical practices while becoming aware of their own conceptions of teaching and learning (Erkens et al., 2018; UNESCO Policy Paper 43).

○ Starting a community of practice where teachers discuss the needs of specific children and collaboratively devise strategies to support them (Genovesi, 2022).

○ When available, support from a special educators or teacher's assistant supports inclusion (Genovesi, 2022).

Promote a cultural change towards inclusion of all students with specific actions.

○ Emphasising that it is within their professional role to include all children in their classroom, and is not just the domain of specialists and special curriculum (Forlin & Chambers, 2011; Graham & Scott, 2016; Sharma, Simi & Forlin, 2015; Subban & Mahlo, 2017; Schuelka, 2018).

- Evidence from the literature strongly suggests that inclusive teaching practices raise the achievement of all children in the classroom (i.e. EASNIE, 2018; Sailor, 2015). In that way, inclusive teaching is synonymous to quality teaching (Schuelka, 2018).

- The SWIFT Center (2018) – a major development centre for inclusive school-wide transformation – has tools to facilitate school-level activities such as Design Planning, Resource Mapping, Data Practices, Forming Teams, and Setting Priorities.

Continuously monitor implementation of inclusive practices.

- Monitoring the implementation and results of teacher training programmes that focus on inclusion is necessary.

- The Index for Inclusion (Booth & Ainscow, 2011) provides a Planning Framework to facilitate school evaluation for inclusion (Schuelka, 2018).

- The UNESCO-IBE (2016) resource pack provides a framework for school review. (Schuelka, 2018).

What are effective instructional strategies for the inclusion and support of all learners, and specifically neuro-divergent children, in under-resourced settings?

The following strategies have been shown to benefit neurodiverse students in inclusive classrooms. While some strategies have been tested in the context of particular diagnoses, it is important to note that the strategies listed below benefit all students. While they make learning accessible for children with particular needs, they support every child with more flexible learning opportunities and a more welcoming classroom environment.

Although many schools are not equipped to diagnose students, it is important to support educators to identify neurodiverse children in order to provide proper instructional accommodations. Neurodiverse children have distinct needs. Some may struggle with social skills and behaviour, others may struggle to learn to read, while others may struggle to concentrate on tasks. Given the wide range of neurodiversity, teachers need support to understand the nature of a child's strengths and needs. With this information in mind, teachers can plan appropriate instruction, using strategies such as the ones listed below.

It is important to note that the instructional strategies below vary in their implementation difficulty. While some represent a quick change, such as reviewing a visual schedule at the start of the day, others require significantly more teacher time and expertise. For example, differentiating lesson tasks based on the learner's unique needs requires teachers to have time to work with students in a smaller group, text materials that support auditory processing, etc. In addition, teachers may struggle to identify which types of differentiation meet which student needs. This is an area where specific training, such as training on reading difficulties or behaviour difficulties, is particularly helpful.

A list of various instructional strategies is highlighted below:

Create a welcoming classroom environment that fosters academic and social inclusion

- ○ Encourage social interactions among students (Nthibeli et al, 2022). All children have a desire to be seen and accepted by others. Students who struggle with social skills may have difficulty with peers. Encouraging peer relationships in the classroom benefits children's wellbeing and development.

- ○ Foster a sense of predictability and safety with repeated routines and a predictable schedule (Hansen et al., 2014). This strategy benefits many students, but is particularly supportive to children on the autism spectrum.

- ○ Use visual aides to review the schedule for the day (Hansen et al., 2014). Research shows that students benefit when they know what to expect during the school day. A visual schedule that the teacher reviews in the morning can help students to focus on their learning.

Leverage cooperative learning and peer learning to provide support for students (Yoro et al., 2020)

- ○ Encourage social interactions among students (Nthibeli et al, 2022). All children have a desire to be seen and accepted by others. Students who struggle with social skills may have difficulty with peers. Encouraging peer relationships in the classroom benefits children's wellbeing and development.

- ○ Provide training in a manner that exposes teachers to cooperative learning. Have teachers engage in cooperative learning with others during training sessions.

- ○ Place students in small groups to complete learning tasks together (Paschal et. al., 2020).

- Provide support for students to participate in discussions with peers (Paschal et. al., 2020).

- Revise curriculum to incorporate learner-centred approaches that involve cooperative learning.

- Organise the classroom to support cooperative learning, such as placing students at tables together.

Adjust the classroom environment to support focus on learning

- Declutter the classroom environment and reduce noise for students with sensory needs (Genovesi, 2022).

- Strategically seat neurodiverse learners close to the front of the classroom and near peers who can serve as role models (Majoko, 2017).

Use formative assessment during daily instruction to assess learner needs (Kanjee, 2020)

- Share lesson objectives with students at the beginning of each lesson using a rubric or another tool. Ensure students understand the goals of the lesson.

- Ask students questions in an individual or whole class setting to gauge understanding and gather evidence of learning.

- Provide opportunities for learners to self-assess their own work. Students will benefit from using a rubric to assess their work.

- Provide opportunities for students to assess peer's work. Students will benefit from using a rubric to assess their peer's work.

- When providing teacher feedback to learners, refer directly to the formative assessment rubric.

Provide curriculum and task adaptations to ensure all learners can access content

Scalability Note: While educators can and do regularly differentiate instruction on their own, this task is much easier if differentiation suggestions are embedded within the curriculum.

- Provide task differentiation while focusing on the same objectives for all learners. Small group instruction, grouping together children with similar needs, can support this sort of differentiation (Mangope, 2017).

- Adjust learning materials and curriculum to enhance accessibility and flexibility. For example, a teacher may need to read math questions aloud to students who struggle with reading to make sure they understand what math questions are asking. Additionally, a teacher may assign fewer math problems to struggling learners, to allow more time to complete each problem. When differentiating instruction, it is important that all adaptations focus on the same learning objective so that students make adequate progress.

- Provide students with choice in how they will demonstrate what they have learned (Nthibeli et al, 2022). This could include sharing their knowledge via drawing or speaking, rather than writing. Some students may struggle with writing, but will be able to express their learning if given the chance to do so verbally.

Provide learning aides to support student access to rigorous instruction

- Provide extensive visual aides (Yoro et al., 2020, Tissot & Evans, 2003). Some students may struggle to process information orally or via text. Visual aides can help students understand new concepts.

- Strengthen use of learning aides (number lines, counting sticks, bottle lines). These aides are often easy to create with items that are already available within the school or community. They are often very helpful in supporting students in their math instruction, by helping students visually depict a problem (UNICEF Think Piece Series).

Provide direct instruction of social skills and behavioural expectations

- Provide behaviour management training, equipping teachers to directly teach classroom expectations and social skills, as well as to reinforce these skills (Wong et. al., 2015).

- Model appropriate behaviour. Some children have difficulty with social skills, which can include trouble understanding appropriate behaviour in the school or classroom setting (Wong et. al., 2015). When teachers model the appropriate behaviour, especially before students are expected to follow it, this supports neurodiverse children to follow expectations.

- Directly teach self-management skills. This includes helping children to identify appropriate behaviour, monitor their own behaviour, and reward themselves when they behave in a way that aligns with expectations (Wong et. al., 2015).

- Use proactive rather than reactive behaviour management (Genovesi, 2022). This includes teaching behavioural expectations to all students and praising all students (not just neurodiverse students) when they exhibit behaviour that aligns with expectations.

- Use descriptive praise or other reward when students exhibit behaviour that aligns to classroom expectations (Wong et. al., 2015).

- Use hand gestures as a visual cue when student behaviour is not aligning with classroom expectations (not giving peers an opportunity to talk, etc.) (Ntombela, S., 2011).

- Provide opportunities for neurodiverse children who struggle with social skills to work with typically-developing peers. In some cases, it may be important to teach peers strategies to interact with neurodiverse children in an inclusive manner (Wong et. al., 2015).

Provide students with attention difficulties direct instruction on organizational skills

- Children with challenges such as ADHD often struggle with missed assignments, misplaced schoolwork, and disorganised school materials which can make learning more difficult. Teachers can support them to organise their work with the following types of strategies (Landberg, 2014):

  1. Colour code materials for each subject
  2. Provide graphic organisers to help students take notes
  3. After giving instructions, have the student repeat them
  4. Provide a rubric that describes expectations on an assignment

Provide assessment accommodations

- Some neurodiverse learners need support to demonstrate their learning on assessments. Accommodations can help them participate by measuring the same content but allowing children to express their learning in different ways aligned with their strengths (Yoro et al., 2020). Examples include:

  1. Reading assessment questions aloud to students who struggle with reading.
  2. Providing an opportunity for a student to take an assessment in a less distracting environment.

3. Providing extra time to take tests.

Support students with literacy difficulties by directly teaching foundational literacy skills
○ Students with literacy challenges require direct phonics instruction, alongside other adaptations, in order to learn to read. It is important to focus on phonics-based teaching approaches for young readers rather than "whole word" approaches (Heikki Lyytinen, Niilo Mäki Institute, 2019). ○ Provide students with practice in letter-sound, rather than letter name, knowledge, using students' local languages (Heikki Lyytinen, Niilo Mäki Institute, 2019). ○ Support teachers to build their language-based content knowledge in order to teach students with language-based difficulties. This includes training on phonological awareness, orthographic awareness, and phonics (Maunsell, 2020). ○ Use mobile phone applications, where accessible, to promote phonics learning at school and at home (Ojanen et al., 2015). GraphoGame is an example that has been studied in Zambia.

Organising Frameworks

Educators benefit from the use of organising frameworks to guide instructional delivery and differentiation for neurodiverse learners. The following frameworks and methods each require different levels of investment, and may differ in their implementation feasibility.

Model	The Wave Model
Description	The Wave Model is a framework for providing three tiers of increasingly intensive resources to support all students' learning, including neurodiverse students. It begins with universal support available to every student, and ends with highly targeted intervention for students experiencing significant challenges (Sarton & Smith, 2018).
Wave 1	Wave 1 describes universal support offered to every student. It is based on an understanding that the strategies that benefit students with disabilities often involve strengthening teaching for all students. Examples include:

	★ Collaborative work with peers ★ Use of learning aides
Wave 2	Wave 2 describes individual or small group interventions provided specifically to students with a particular need, rather than to all students. This may include: ★ Small group literacy instruction for children struggling to read ★ Peer tutoring ★ Direct teaching of social skills for children struggling with peer interactions or classroom behaviour
Wave 3	Wave 3 describes specialised strategies provided on an individual or small group basis to students with severe needs. Often, this involves instruction by a specialist outside of the inclusive classroom. For students in need of Wave 3 intervention, teachers may recommend assessment via the Education Assessments and Resource Centres (EARCs). However, after assessment at the EARC, officers frequently recommend placing a student in an integrated school or special school, rather than having the student placed at their regular school with an individualised support plan. Given that most of Dignitas partner schools do not have specialised staffing to serve children with disabilities, Wave 3 interventions may not be feasible in this context.

Model	**Individualised Education Plans (IEPs)**
Description	An IEP is a plan for an individual student with a disability. These plans describe learning goals for a particular child, as well as the accommodations and services the child needs to receive in order to reach these goals. IEPs also describe how the child will receive these accommodations and services (where will the service be provided, by whom, for how long, etc.).
Note on Implementation Feasibility	Research shows challenges with IEPs in Kenya, with "less than 50 percent of teachers in special schools and less than 25 percent in integrated schools" reporting that they feel competent to implement IEPs. Teachers say they lack skills to implement IEPs (Grimes et. al., 2023). While IEPs may not be particularly challenging to develop, their impact may be limited by teachers' training and capacity to implement the strategies included in the IEP. IEP development can be supported through use of a standardised template or software to support IEP creation. Some software platforms help teachers choose appropriate accommodations based on student needs. Large class sizes and insufficient staffing are barriers to IEP implementation.

Model	Universal Design for Learning (UDL)
Description	UDL is an approach not just for neurodiverse children or children with disabilities. The goal of UDL is to provide as much access as possible for every student by designing learning experiences to accommodate those at the margins. UDL helps teachers shift from a medical model of neurodiversity to a mindset that embraces individual differences and inclusion.
UDL Principles	★ Multiple Means of Representation: Provide multiple, flexible methods of presentation to support students to acquire knowledge and information in different ways. ★ Multiple Means of Action and Expression: Provide multiple, flexible methods of action and expression by differentiating the ways in which students can show what they know. ★ Multiple Means of Engagement: Provide multiple, flexible options for engagement by allowing students to participate in learning in different ways, such as interactive activities, individual work, small group work, partner work, etc.
Note on Implementation Feasibility	UDL is a more feasible framework, given that it is designed for an inclusive setting. For UDL to be successful in low to middle income countries, it is important to provide teachers with practical and localised training that describes the what and how of UDL in a similar context (McKenzie, et. al., 2021). The training should anticipate some teacher resistance due to large class sizes and challenging working conditions. Leadership training, which focuses on UDL for school leaders, is important to support school implementation. Leaders who have been trained can help teachers adapt UDL to their unique contexts. At the national level, policymakers can support this work by including recommended adaptations and scaffolds in the national curriculum for neurodivergent students (Otina, 2016). By revisiting the national curriculum using UDL principles, policymakers can support UDL implementation at scale and lessen teacher time spent planning adaptations.

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Learning Brief 1

Learning Brief 1 is featured on the following page.

LEARNING BRIEF

DECEMBER 2023

School-based Collaboration
Promoting Integration of Neuro-diverse Learners

Key Question:
How can teachers, school leaders, and school leader supervisors better collaborate to promote integration of neuro-divergent children?

Collaboration among agents in the school environment is essential for a successful implementation of inclusive education strategies. It is critical to consider the experience of neuro-diverse learners within the broader socio-cultural environment. This brief showcases opportunities that focus on capitalising on the agency of individual actors and highlights opportunities for collaboration among actors.

Goals of this learning brief

- Emphasise to all actors that **inclusion benefits everyone**: inclusive teaching practices raise the achievement of all children in the classroom.
- Centre the actionable steps that can be taken by all **actors** to promote inclusion
- Promote inclusive teaching as a **mindset**, rather than an additional task or burden.
- Emphasise that inclusive teaching and learning works best as a **collaborative process** that requires support and resources, rather than a top-down demand.
- Empower schools to **leverage existing strengths**, resources and human capital to help schools understand:
  - their own challenges, assets, resources, value frameworks, stakeholders
  - where to locate data and evidence, which are key to a successful inclusive education implementation
- Help motivate **a shift in perceptions of neuro-divergent students** away from a deficit model. Instead, emphasise inclusion and adopt a strengths-based model toward neuro-diverse learners.

Who can play an active role in inclusion?
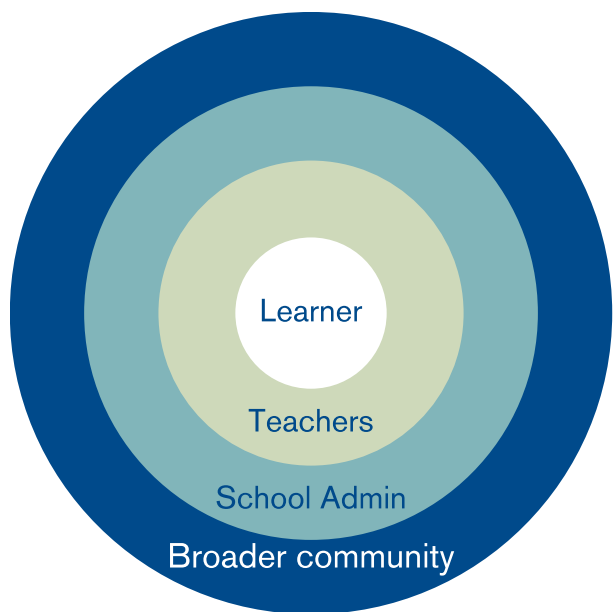
Figure 1. Nested, student-centred approach.

Learner

Teachers

School Admin

Broader community

Every actor in the school community can contribute to promoting an inclusive environment focused on learning, including the students themselves. This is represented by the diagram of a nested, student-centred approach. Concentric circles highlight the nested nature of education communities. Students are at the centre, followed by teachers, followed by school administrators who are, in turn, nested within the broader community.

Actor-centred, iterative process model

There is no "one-size fits all" solution in education. Even though the guidelines brought in this brief are research-based, implementation will depend on context, since each schooling community has its specificities. In that sense, for the successful implementation of inclusive practices, it is crucial to evaluate each step and adjust the practice to each particular school, and even to each particular classroom.

The diagram below illustrates the iterative nature of the implementation process.

Evaluate and adjust

Assessment   Training   Implementation   Assessment

Evaluate and adjust
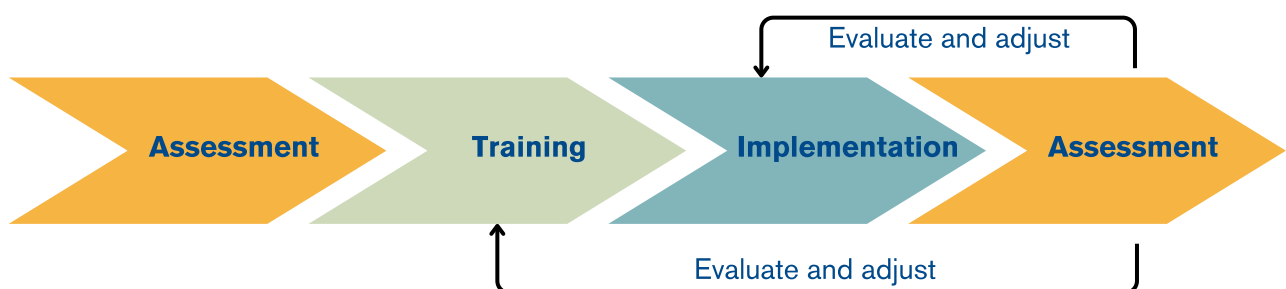
Figure 2. Iterative process model

Every actor in a schooling community can engage in this iterative process, having neuro-diverse students in mind, changing their own practices and actions to contribute to an inclusive environment. Change can be mobilized by a single student, but the impact is greater when accompanied by strong leadership.

Leadership to promote change

Leadership in the schooling community includes head teachers, deputies, teachers and anyone else who influences instruction beyond their own classroom. These are crucial agents of change.

Often the most inclusive and high-quality schools are those that have leaders who lead with vision, inclusive values, motivation, autonomy and trust in school staff.

Attentive school leadership that is aware of influences of bias and segregation can change local practices to provide a more inclusive environment, limiting unwanted consequences.

In this learning brief, we highlight steps that can be taken by teachers and school administrators to work together and individually to create an inclusive school that supports neuro-divergent learners.

As part of these efforts, it is important that **teachers and school administrators consult and work with students and their families** to consider which approaches will be most successful in different contexts, such as:

- To include specific communication with parents and families for a collaborative approach between school staff and families.
- To ensure communication is mindful of parents' literacy level, and their mindset towards their child's learning and wellbeing.

While collaboration is key, it is also essential to **acknowledge and encourage the autonomy of individual actors**. For instance, in school districts that don't prioritize inclusive education and do not have policies in place to guide implementation of an inclusive schooling environment, school administrators can still implement change by taking action within their schools and the surrounding communities.

Similarly, in schools where administrators don't take specific measures to include all students, teachers can leverage their autonomy to create inclusive spaces within their classrooms or within the school at large.

Broader community, policy-makers, and government

Focus on implementation in addition to policies

The government of Kenya has started to develop policies to foster an inclusive education system, but implementation is still subpar. **There is a need for increased focus on implementation** of these policies for effective results.

- In 2009, the Special Needs Education Policy Framework highlighted the need to support learners with special needs, including those with disabilities as well as those marginalised for other reasons (e.g., displacement).
- In 2012, the Basic Education Act broadened the scope of "special needs" to include those with less visible disabilities, including learners who meet the above definition of 'neurodiverse'.
- In 2018, the Sector Policy for Learners and Trainees with Disabilities prioritised inclusive education for all learners.

One measure—albeit indirect—of implementation is government spending on inclusion programs. A recent report suggests that, despite policy expansion over time, spending has remained relatively stable and even shows a recent dip.

This pattern is concerning, as it points to a potential barrier to the successful implementation of inclusion programming.

Focus on sustained efforts toward inclusion

Policies for inclusion are an important first step for systemic change. However, without sustained efforts, the impact is limited. Studies show that:

- Short-term, 'parachute' trainings in inclusive education techniques are limited in terms of impact and systemic change.
- Providing sustained and continuous in-service development on inclusive pedagogy can have a positive effect.
- Providing high quality mentoring to novice teachers improves teacher practice. However, a study found that, even though there are a limited number of veteran special educator mentors, veteran general educators can successfully serve as mentors for special educators who are novices.

School administrators

Assessment	• Assess current inclusion indicators. The assessment tool in Fig. 3 below can be used by both school administrators and teachers. • Build on the basics of good instructional leadership: support for teachers, observations and constructive feedback.
Training	• Seek specialised training in inclusion for school leaders to help create an inclusive school ethos. • Offer training on inclusion for teachers. When training is provided, perceptions change and teachers are not in favour of segregation of learners with disabilities. • Provide training on emotional intelligence for teachers, since teachers who possess emotional competencies are more likely to make inclusive education possible and successful. Higher rates of EI are related to resilience in response to negative stress and a lower likelihood to show strong negative emotions. • Implement sustained and continuous in-service development on inclusive pedagogy.
Implementation	• Collaborate with families, teachers and learners to identify the kinds of training and support that are most needed. • Initiate and promote a community of practice where teachers discuss the needs of specific children and collaboratively devise strategies to support them. • Work to create a collaborative environment where teachers exchange best practices and feel supported. • Work to change perceptions through awareness of neurodiversity and its causes.

Evaluate and Adjust	• Monitor the implementation and results of teacher training programmes that focus on inclusion:
	  ○ The <u>Index for Inclusion</u> provides a Planning Framework to facilitate school evaluation for inclusion.
	  ○ The <u>UNESCO-IBE</u> resource pack provides a framework for school review and a helpful set of indicators.

Teachers

Assessment	• Implement formative assessments. They provide the foundation for insights into existing strengths and areas for growth.
	• Research what inclusive education 'looks like' in the classroom. UNESCO-IBE suggests that there are eight indicators that can help teachers review their classrooms:
	  ○ Teaching is planned with all students in mind
	  ○ Lessons encourage the participation of all students
	  ○ Students are actively involved in their own learning
	  ○ Students are encouraged to support one another's learning
	  ○ Support is provided when students experience difficulties
	  ○ Classroom discipline is based on mutual respect
	  ○ Students feel they have someone to speak to when upset
	  ○ Assessment contributes to the achievement of all students

Training	• Seek support from school administrators and peers into practices for inclusive teaching. Stress, which stems from feeling underprepared and under supported, impacts practice. • Seek training that emphasises inclusion of all children in the classroom. It is not just the domain of specialists. • Value and embrace sustained and continuous in-service development on inclusive pedagogy.
Implementation	• Collaborate with peers in Professional Learning Communities to develop, implement and evaluate instructional improvement strategies tailored to the specific needs of students. • Explore other pedagogical practices to become aware of own conceptions of teaching and learning. • Seek support from special educators, when available. If not, veteran general educators can serve as mentors in inclusion.

Evaluate and Adjust	• Monitor the implementation and results of teacher training programmes that focus on inclusion:
	  ○ The Index for Inclusion provides a Planning Framework to facilitate school evaluation for inclusion.
	  ○ The UNESCO-IBE resource pack provides a framework for school review and a helpful set of indicators.

Students and their families

Assessment	• Assess current inclusion indicators. The assessment tool in Fig. 3 below can also be used by students and families that are engaged in promoting change in their schooling community.
Training	• Seek support from school administrators and teachers on how to promote the inclusion of neuro-divergent students as a peer. • Value and embrace inclusive pedagogy practices adopted by teachers in the classroom.
Implementation	• Intentionally include neuro-divergent peers in the classroom, on school grounds and in the broader community.
Evaluate and Adjust	• Monitor the implementation and results of inclusion in your classroom and school: ○ The Index for Inclusion provides a Planning Framework to facilitate school evaluation for inclusion.

Assessment in practice

The UNESCO Report "Training tools for curriculum development: reaching out to all learners: a resource pack for supporting inclusive education" offers actionable resources focused on implementing inclusive practices in schools, including the Inclusion Indicators below.

The Inclusion Indicators

1 Everyone is made to feel welcome.
❏ 1   ❏ 2   ❏ 3   ❏ 4   ❏ NR

2 Students are equally valued.
❏ 1   ❏ 2   ❏ 3   ❏ 4   ❏ NR

3 There are high expectations for all students.
❏ 1   ❏ 2   ❏ 3   ❏ 4   ❏ NR

4 Staff and students treat one another with respect.
❏ 1   ❏ 2   ❏ 3   ❏ 4   ❏ NR

5 There is a partnership between staff and families.
❏ 1   ❏ 2   ❏ 3   ❏ 4   ❏ NR

7 Senior staff support teachers in making sure that all students participate and learn.
❏ 1   ❏ 2   ❏ 3   ❏ 4   ❏ NR

8 The school monitors the presence, participation and achievement of all students.
❏ 1   ❏ 2   ❏ 3   ❏ 4   ❏ NR

Figure 3. The Inclusion Indicators, by UNESCO

This practical self-assessment tool can be used by school administrators to evaluate the school and schooling community in their inclusive practices or by teachers, to assess the impact of their practice in the classroom. The tool can also be used by students to assist teachers and school administrators in their assessments, or as a tool to advocate for neuro-divergent students in the community.

Change in perception

Sustained training focused on inclusive practices is key in promoting an inclusive schooling environment for neuro-divergent students. When teachers have not received training, research shows that they exhibit negative attitudes towards inclusion of students with disabilities. When training is provided, perceptions changed and teachers opposed the segregation of learners with disabilities.

In addition, nonconformist attitudes can promote change, irrespective of their leadership status or perceived power. Studies show that principals can "make issues of race, class, gender, disability, sexual orientation, and other historically marginalising factors central to their advocacy, leadership practice, and vision". Teachers and students alike can take the helm and promote change within their contexts.

Learning Brief 2

Learning Brief 2 is featured on the following page.

Instructional Strategies for Inclusion
Focus on Neurodiverse Learners

Key Question:

What are effective instructional strategies for the inclusion and support of all learners, and specifically neuro-divergent children, in under-resourced settings?

Inclusive education that supports and nurtures the development of every child is essential to learner success and wellbeing. Providing inclusive education and recognising the best instructional strategies has become a priority for countries around the world. This learning brief addresses effective instructional strategies for the inclusion and support of all learners, and specifically neurodivergent children, in under-resourced settings.

Who is this brief for?

This brief can be useful for any individual with a role in education who is interested in gaining an understanding of effective instructional strategies. It was designed to be implemented in the context of Kenya, but it contains information that can be applied in a range of under-resourced settings.

What is the purpose?

The brief aims to outline and compare different instructional strategies that serve to include and support all learners. It mainly focuses on Universal Design for Learning (UDL) given that the UDL framework places a specific focus on instructional strategies to support all learners including neurodivergent children, and because UDL is a feasible framework to implement in under-resourced settings.

Defining the challenge

Neurodiversity refers to a wide range of **specific, non-specific, hidden and/or undetermined differences in how individuals process information that are natural variations in the human population and may have benefits.**

There is no widespread understanding of the term neurodiversity. It is important to be clear that neurodiversity itself is not a diagnosis, although in settings with clinical facilities available diagnosis may form part of an understanding of the specific needs of a neurodiverse child (see Figure 1 below for examples of diagnostic labels). In underresourced settings, particularly in low-income countries, screening and diagnosis for such disorders is rare. Given limited resources and large class sizes, school leaders and teachers are typically not well supported to address the needs of neurodivergent children in schools.

Some children have particularly complex needs as a result of **comorbidity** where multiple variations occur in parallel. When children face a range of learning challenges, it can be difficult for educators to understand and respond to individualised needs. However, neurodiverse learners can also have overlapping strengths (Figure 1).

Educators have a key role to play in making the strengths of neurodiversity more widely appreciated. By doing so they may also help reduce marginalisation and **empower different learners** to thrive and contribute to wider society and culture.
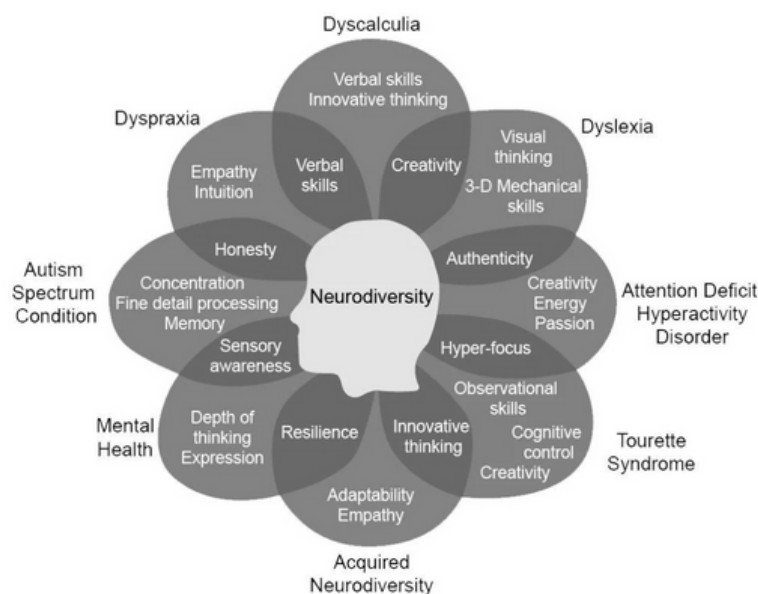
Figure 1. The overlapping strengths of neurodiverse learners. Taken from Prof. Nancy Doyle.

Neurodiversity can be associated with specific diagnoses or labels in clinical settings where diagnostic assessment is available. However, neurodiversity itself is not a diagnosis or disability. In fact individuals who are neurodiverse may also present with different strengths in processing information such as innovative thinking, creativity and empathy. It is essential that educators appreciate the strengths of neurodiverse children as well as understanding how to respond to challenges they may experience.

Statistics of the prevalence of neurodiversity

Key statistics in Kenya

In 2018, a national survey by the Kenya Institute of Special Education (KISE) of 7609 young people (50% male, 50 % female) found 865, or **11.4%**. had disabilities/neurodiversity.

For types of disabilities, visual ones were the most prevalent with 3.1% followed by physical at 3% and intellectual at 2.5%.

Statistics in context

Surveys in other countries such as the UK suggest **15% of young people** are neuordiverse (National Health Service England) and 15-20% 'worldwide'.

Accurately estimating a true percentage of neurodiverse children is a challenge in under-resourced settings, as many children do not receive a formal diagnosis.

Together these statistics highlight the strong **importance of supporting neurodiverse learners**, who comprise a significant proportion of the population.

Instructional Solutions to Support Inclusion of Neurodiverse Learners

In order to design instruction that meets the needs of a diverse range of learners, teachers and administrators benefit from using an organising framework that helps them determine when, how, and for whom to differentiate content and employ new classroom strategies. The following section describes widely-used organising frameworks, before offering a deep-dive on Universal Design for Learning (UDL), a framework that may be particularly beneficial in under-resourced settings.

Following a description of the UDL framework, this section provides a description of research-based instructional practices that teachers may use to support inclusion of neurodiverse learners.

Organising frameworks

There are several frameworks to support inclusion of neurodiverse children. Frameworks that have been applied or considered in Kenya include:

The Wave Model	*The Wave Model is a framework for providing three tiers of increasingly intensive resources to support all students' learning, including neurodiverse students. It begins with universal support available to every student, and ends with highly targeted intervention for students experiencing significant challenges (Sarton & Smith, 2018).*
Individualised Education Plans (IEP)	*An IEP is a plan for an individual student with a disability. These plans describe learning goals for a particular child, as well as the accommodations and services the child needs to receive in order to reach these goals. IEPs also describe how the child will receive these accommodations and services (where will the service be provided, by whom, for how long, etc.)*
Universal Design for Learning (UDL)	*The goal of UDL is to provide as much access as possible for every student by designing learning experiences to accommodate those at the margins. UDL is an approach designed to benefit all learners, not just those with disabilities. UDL helps teachers shift from a medical model of neurodiversity to a mindset that embraces individual differences and inclusion.*

Deep Dive on UDL

Here we focus on Universal Design for Learning (UDL), since it may be a particularly beneficial strategy to support inclusion of neurodiverse learners in under-resourced settings.

The UDL framework is designed to provide instruction that meets the natural variance of all learners, and is not designed only for students with disabilities or learning concerns. UDL focuses on both the mindset shifts and adaptive changes required to meet the needs of every learner, as well as the instructional practices that enable every learner to access rigorous content.

As of yet, rigorous studies supporting the effectiveness of UDL are not available (Murphy, 2021). Studies have primarily assessed the effectiveness of implementing UDL, and further research on the impact of UDL, particularly in under-resourced settings, is needed.

How does UDL Support the Principles of Kenya's Basic Education Curricular Framework?
"...learners are different in terms of their learning needs and abilities and these differences need to be respected and valued within an inclusive learning environment. Inclusion… involves provision of reasonable accommodation characterized by flexibility, responsiveness and support." -Basic Education Curricular Framework, 2017
Both the UDL Framework and Kenya's Basic Education Curricular Framework: • Recognize that students have **individual needs** and learner **variance is the norm** • Are designed to **empower learners** • Support teachers to **differentiate instruction** based on individual learner needs

Principles of UDL

UDL features three core principles, shown below.

Provide Multiple Means of **Engagement**	Provide Multiple Means of **Representation**	Provide Multiple Means of **Action & Expression**
The WHY of Learning	*The WHAT of Learning*	*The HOW of Learning*

Multiple Means of Engagement	For learners to process information, it must be relevant to them. Teachers can support learners by providing multiple, flexible options for engagement by allowing learners to participate in learning in different ways, such as interactive activities, individual work, small group work, partner work, etc.
Multiple Means of Representation	Learners grasp content and information in different ways. Some learn best visually, others prefer auditory processing, etc. Provide multiple, flexible methods of presentation to support learners to acquire knowledge and information in different ways.
Multiple Means of Action and Expression	Learners have different needs which impact the ways they are able to express and demonstrate their knowledge. While some can share ideas in writing, others need to express themselves orally or via physical movement. Provide multiple, flexible methods of action and expression by differentiating the ways in which students can show what they know.

Adapted From: CAST (2018). Universal design for learning guidelines version 2.2 [graphic organiser]. Wakefield, MA: Author

Benefits of UDL

- UDL serves as a way to operationalize Kenya's inclusive education policy
- When training is robust and context-specific, UDL can help reduce stigma regarding learner diversity and disability
- The UDL framework is designed to benefit all learners, while specifically providing supports that ensure neurodiverse children can participate in the learning process

How UDL Supports Teachers to **Embrace Learner Variance**

Teacher mindsets are critical to making the shift towards inclusive classrooms. Before teachers can shift their practices and move away from habits that prevent inclusion, they must receive support focused on mindsets and beliefs. Support can focus in the following areas:

Reframing the Problem: Educators often view learner variance as a problem. UDL reframes this problem by instead locating the issue with inaccessible curriculum, materials, and spaces. In recent years, UDL experts have recognized a need to begin teacher training with a focus on learner variance and brain science. Once teachers recognize that each learner has their own strengths, backgrounds, and skills – and see variance as the norm among learners – they will be more willing to shift teaching strategies in ways that benefit inclusion.

Empowering Teachers: UDL proposes a radical shift from rigid to flexible methods of schooling that adapt to the needs of individual learners. Training must focus on situating power with teachers to adapt instruction and content in ways that meet learners' needs (Lambert et. al., 2023). Trainers can do this by emphasizing that UDL is not a checklist, but a design process. Teachers use their expert knowledge of their students to redesign instruction in ways that adapt to student needs.

Investigating Beliefs: UDL experts agree that two core mindsets are critical to teachers embracing UDL. One is focused on a belief that every child can learn. Another is focused on a belief that inclusion is beneficial for all learners. In training, experts often challenge educators to interrogate the beliefs they carry with them. Do they believe that all children can learn? Do they believe that inclusion benefits all? Teachers may benefit from opportunities to share their experiences with others, such as by discussing how they design learning environments that support access for all students. This creates opportunities for more reluctant teachers to hear from those who have managed to shift their teaching practices (and their mindsets) to benefit all learners. This can take place through training or individualized UDL coaching.

Implementing UDL **in Underresourced Settings**

The vast majority of research on UDL focuses on implementation in higher income countries, however studies have focused on UDL implementation in Tanzania, Ghana, South Africa, Iraq, Cameroon, Jamaica and other Low- and Middle-Income Countries (LMICs). Studies of UDL implementation in LMICs show that the following components are critical to the success of UDL implementation efforts.

Key Learning 1: UDL Training Must Be Contextualized to the Cultural Context

Given cultural differences in understanding of disability and approaches to instruction, it is critical that UDL training is contextualized to the cultural context. For example, in some LMICs, teachers do not routinely differentiate instruction based on individual learner's needs. In such cases, it is important to equip teachers with the why and how of differentiated instruction as a component of training and coaching. In other LMICs, teachers regularly differentiate instruction. They may find they already apply UDL principles in many cases, which offers an opportunity for coaches to build off existing strengths during training activities.

Key Learning 2: Training Must be Sustained to be Impactful

Teacher professional learning is most impactful when it is sustained over a period of time, offering teachers the opportunity to learn, implement strategies, receive feedback, and share with peers. Teachers in LMICs report using resources produced in higher income countries to develop an understanding of UDL principles and strategies . However, effective implementation requires teachers and leaders to have regular opportunities to translate these resources and teaching practices to their unique contexts. Strategies include hybrid professional development, peer learning, and opportunities to receive feedback.

Key Learning 3: Teachers Benefit from Tools that Support Differentiation

UDL implementation and differentiated instruction is strengthened when teachers have access to teaching resources that support differentiation. In higher income countries, many schools using UDL approaches rely heavily on universally designed technology programs. For example, schools may use differentiated online texts, adaptive learning games, audio-visual supports, etc. In LMICs, lack of technology access and connectivity is regularly cited as a concern. However, some programs have created low-tech support for UDL implementation in the classroom. For example, a program in Tanzania developed low-tech tactile materials using locally available recyclable items. In addition, schools can consider providing students with access to mobile phone games (if facilities are available) that support differentiated learning.

Instructional Practices

Once teachers and administrators develop an understanding of the UDL framework, and the need to adjust instruction and classroom practices based on learner variance, they will need training and coaching on specific instructional practices to support a wide-range of learners. This section includes a description of instructional practices that have been applied in underresourced settings. It is important to note that many of these strategies benefit all students, not just those who are neurodiverse.

Create a welcoming classroom environment that fosters academic and social inclusion
- Encourage social interactions among students   - Foster a sense of predictability and safety with repeated routines and a predictable schedule   - Use visual aides to review the schedule for the day

Provide curriculum and task adaptations to ensure all learners can access content
- Adjust learning materials and curriculum to enhance accessibility and flexibility. For example, a teacher may need to read math questions aloud to students who struggle with reading to make sure they understand what math questions are asking. Additionally, a teacher may assign fewer math problems to struggling learners, to allow more time to complete each problem   - Provide students with choice in how they will demonstrate what they have learned This could include sharing their knowledge via drawing or speaking, rather than writing. Some students may struggle with writing, but will be able to express their learning if given the chance to do so verbally

Adjust the classroom environment to support focus on learning
- Declutter the classroom environment and reduce noise for students with sensory needs   - Strategically seat neurodiverse learners close to the front of the classroom and near peers who can serve as role models

Leverage cooperative learning and peer learning to provide support for students

- Provide training in a manner that exposes teachers to cooperative learning. Have teachers engage in cooperative learning with others during training sessions
- Place students in small groups to complete learning tasks together
- Provide support for students to participate in discussions with peers
- Revise curriculum to incorporate learner-centered approaches that involve cooperative learning
- Organize the classroom to support cooperative learning, such as placing students at tables together

Use formative assessment during daily instruction to assess learner needs

- Share lesson objectives with students at the beginning of each lesson using a rubric or another tool. Ensure students understand the goals of the lesson
- Provide opportunities for learners to self-assess their own work. Students will benefit from using a rubric to assess their work
- Provide opportunities for students to assess peer's work. Students will benefit from using a rubric to assess their peer's work
- When providing teacher feedback to learners, refer directly to the formative assessment rubric

Provide direct instruction of social skills and behavioral expectations

- Provide behaviour management training, equipping teachers to directly teach classroom expectations and social skills, as well as to reinforce these skills
- Model appropriate behaviour. Some children have difficulty with social skills, which can include trouble understanding appropriate behaviour in the school or classroom setting. When teachers model the appropriate behaviour, especially before students are expected to follow it, this supports neurodiverse children to follow expectations
- Directly teach self-management skills. This includes helping children to identify appropriate behaviour, monitor their own behaviour, and reward themselves when they behave in a way that aligns with expectations
- Use proactive rather than reactive behaviour management. This includes teaching behavioural expectations to all students and praising all students (not just neurodiverse students) when they exhibit behaviour that aligns with expectations

Provide learning aides to support student access to rigorous instruction

- Provide extensive visual aides. Some students may struggle to process information orally or via text. Visual aides can help students understand new concepts
- Strengthen use of learning aides (number lines, counting sticks, bottle lines). These aides are often easy to create with items that are already available within the school or community. They are often very helpful in supporting students in their math instruction, by helping students visually depict a problem

Provide students with attention difficulties direct instruction on organizational skills

- Children with behavioural challenges can struggle with missed assignments, misplaced schoolwork, and disorganised school materials which can make learning more difficult. Teachers can support them to organise their work with the following types of strategies.
  - Colour code materials for each subject
  - Provide graphic organisers to help students take notes
  - After giving instructions, have the student repeat them
  - Provide a rubric that describes expectations on an assignment

Support students with literacy difficulties by directly teaching foundational literacy skills

- Students with literacy challenges require direct phonics instruction, alongside other adaptations, in order to learn to read. It is important to focus on phonics-based teaching approaches for young readers rather than "whole word" approaches
- Provide students with practice in letter-sound, rather than letter name, knowledge, using students' local languages
- Support teachers to build their language-based content knowledge in order to teach students with language-based difficulties. This includes training on phonological awareness, orthographic awareness, and phonics

Complementary Recommendations to Support Instructional Practices

A recent <u>working paper</u> on the use of The Use of Technology to Promote Equity and Inclusion in Education in North and Northeast Kenya suggests that instructional practices should be implemented within the following mindset:

- Increase enrolment, retention, and participation of all learners
- Identify and support learners with special educational needs
- Increase girls' participation in education
- Consider curriculum delivery to out-of-school learners
- Ensure access to safe and inclusive digital content for all learners.

Policy Recommendations

This learning brief shares a framework and a set of instructional strategies that teachers, administrators, and professional learning providers can implement to strengthen inclusive teaching in under-resourced schools. Though none of these strategies require policy change, there are policy opportunities that have the ability to strengthen inclusive practices for neurodiverse learners in Kenya's schools. Two policy recommendations are included below.

Embed UDL strategies into the Competency-Based Curriculum

Though UDL offers a relatively simple framework to operationalise inclusive education policy, the task of identifying differentiation options within the classroom can be overwhelming for teachers who already face large class sizes and difficult working conditions. By embedding UDL principles and suggested differentiation strategies within Kenya's Competency-Based Curriculum, leaders can streamline work for teachers. Ultimately, this will make teachers more likely to implement inclusive practices within the classroom.

Embed a focus on UDL in higher education courses focused on training teachers

Research on UDL implementation in LMICs shows that it is rarely included in pre-service training (McKenzie et. al., 2021). Working with teacher training programs to embed a focus on inclusion, grounded in a UDL framework, offers promise to strengthen new teachers' preparedness to implement inclusive practices.

Competency Framework

The Competency Framework is featured on the following page.

Competency Framework

Promoting Integration of Neuro-diverse Learners

Working with Others

Advocacy, collaboration and teamwork are essential for all educators

- Centering learners and their needs in the design of tailored inclusion practices
- Working with families to understand their challenges and how to support them
- Fostering collaboration between teachers and administration to design and sustain inclusive practices

Supporting All Learners

All professionals are committed to learners' achievements, well-being and belonging

- Supporting academic, practical, social and emotional learning
- Supporting well-being
- Flexible organisation of support

Valuing Learner Diversity

Learner variance is considered as a resource and an asset to education

- Recognizing variance and as the norm
- Believing that all children can learn
- Demonstrating eagerness to deepen understanding of neurodiversity

Professional Development

Continuous development is a shared responsibility of educators

- Committing to personal and professional development
- Being a part of an inclusive professional learning community
- Learning that builds on initial teacher training and the competences of other education professionals

Adapted from The European Agency for Special Needs and Inclusive Education, Profile for Inclusive Teacher Professional Learning