# IMPACT ON POLICY, PRACTICE, AND PARTNERSHIPS FOR INCLUSIVE EDUCATION

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Universal Design
For Learning

UDL

UDL The impact of
Universal Design for Learning

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# UNIVERSAL DESIGN FOR LEARNING: IMPACT ON POLICY, PRACTICE, AND PARTNERSHIPS FOR INCLUSIVE EDUCATION

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# TABLE OF CONTENTS

# I. ACRONYMS

**CAST** Center for Applied Special Technology, now known as CAST

**CBM** Christoffel-Blindenmission or Christian Blind Mission

**IDEA[1]** Including Disability in Education in Africa

**IDEA[2]** Individuals with Disabilities Act

**IDP** Inclusive Development Partners

**LMIC** Low- and Middle-Income Countries

**STEM** Science, Technology, Engineering and Mathematics

**UDL** Universal Design for Learning

# UNIVERSAL DESIGN FOR LEARNING: IMPACT ON POLICY, PRACTICE, AND PARTNERSHIPS FOR INCLUSIVE EDUCATION

Universal Design for Learning (UDL) has gained international attention as a promising framework for reducing barriers to education and developing equitable, quality learning for all (Dalton, McKenzie & Kahonde, 2021; Gronseth & Dalton, 2019; McKenzie, Karisa, Kahonde & Tesni, 2021; Nelson, 2021b). Created by CAST over 30 years ago and based in neuro-psychology, psychology, education, and special education research, UDL has evolved into a framework that supports the learning of every student (Meyer, Rose, and Gordon, 2014; Nelson, 2021a). The intention of the framework is to provide learners the opportunities necessary to find purpose and motivation, become resourceful and knowledgeable as well as strategic and goal directed when learning. Regardless of learning needs, socio-economic status, gender, ethnicity, or any other demographic descriptor, these are skills every learner needs to gain.

To that end, a committed group of international researchers, policy advocates, systems-change agents and classroom practitioners, most from the Global Campaign for Education–US Community of Practice, joined together virtually on July 26, 2021 to present insights on the impact of UDL on international education development. ***Universal Design for Learning (UDL): Impact on policy, practice, and partnerships for inclusive education*** was a Side Event at the Global Education Summit 2021 and aimed to consolidate and share a set of substantive recommendations to strengthen the application of UDL in inclusive education opportunities worldwide.

The purpose of this white paper is threefold. It will share: (a) how the UDL framework was used in the design of the session, (b) an overview of the four topics presented during the UDL Side Event including the feedback provided by participants, and (c) proposed next steps for the international audience, specifically those in low-middle income countries interested in supporting the implementation of UDL. This paper contains insights for those seeking to advance the creation of inclusive education opportunities worldwide, with specific recommendations for effective research opportunities, policy development, systems change and classroom impact.

## II. THE DESIGN OF THE UDL SIDE EVENT

The event co-hosts, Leah Bitat and Loui Lord Nelson, organized the session to share practical, solution-oriented insights from across the globe that emerged from research, policymaking, school systems, and classrooms and engage the participants via multiple forms of discussion. Because this was a session focused on UDL, the organizers reinforced the use of the framework in the design and implementation of their breakout sessions from the outset.

Supporting the Design

In cooperation with the Global Campaign for Education, the organizers invited leading practitioners from around the world to develop presentations on the impact of UDL in education research, policy, systems change and classrooms. Using a Google Form, presenters provided the organizers with specific information about their sessions. The presenters shared which topic area interested them most (e.g., research, policy systems change, classroom impact), the goal for their 30-minute breakout session, and the guiding questions they would present to the participants. In addition, each team identified how they would encourage full engagement during the breakout and the options for expression they would provide to attendees (e.g., Options around representation were discussed during the three full-group meetings). Finally, presenters were asked to identify technology needs specific to their breakout sessions. The platform used for the session was Zoom. Although presenters assured multiple means of representing material and engaging participation from attendees, due to the design of Zoom, the session organizers could only provide sign language interpreters for the main session and for the policy breakout session.

### A. THE STRUCTURE

The session focused on four overarching areas of UDL implementation: research, policy, systems, and classroom application. The session began with each team providing a 10-minute introduction to their topic to prime participants for the upcoming discussions. Teams and participants then moved into their selected breakout discussions. At that time, presenters gave additional insights on their specific topics and engaged participants to provide input into the discussion questions.

## III. THE FOUR SECTIONS

The presenters for the UDL Side Event determined that the breakout sessions would focus on four key areas: research, policy, systems-level implementation and classrooms. Each breakout team determined their own goal, content and design for participant engagement. An overview of each session follows, along with input provided by the participants.

### A. RESEARCH

This session, led by Nicholas Jay Hoekstra, Callista Kahonda, Amani Karisa, Judith McKenzie and Sian Tesni and began by sharing the work of Christoffel-Blindenmission Christian Blind Mission (CBM). CBM's work identified the minimal evidence and guidance on how to effectively implement UDL in Low-Middle-Income Countries (LMIC). It was acknowledged that without deeper knowledge of UDL in LMICs, promotion of and training in this approach may be premature. CBM commissioned the Including Disability in Education in Africa (IDEA[1]) research unit at the University of Cape Town to review current UDL practices, training needs and relevant online resources in LMICs.

A thorough literature review selected 21 peer-reviewed articles. The articles came from South Africa, China, Tanzania, Botswana, Brazil, Iraq, Ghana, Cameroon, Jamaica, Kazakhstan and the Philippines. Themes that emerged included teacher capacity building, levels of technology for UDL, role of communities and families, disability and UDL, and challenges in implementing UDL. The research led to the following conclusions for each section:

1. Capacity building of teachers/instructors on UDL

Teachers/instructors are generally not trained in and are unaware of UDL. Teacher training on UDL principles happens on an informal level in some contexts, mostly with support from partners in high-income countries.

2. Levels of technology for UDL

Challenges exist around technology access, use and effectiveness, although there is evidence of efforts being made to adapt low-cost locally available resources.

3. Role of communities and families in UDL

This is neglected in the literature. Some papers cite discriminatory views of persons with disabilities. Also, poverty, abuse and mental health related issues make it difficult for families to engage with educational initiatives like UDL. However, it is recognized that communities and families are a resource not a problem.

4. Disability and UDL

Most studies focus on disability or learning challenges without identifying the intersectionality of disability with other issues that might cause discrimination. Poverty in LMICs affects the way diversity and disability is understood; teachers might resist this intersectionality in this challenging environment. Inclusive education may be seen as low priority, affecting only children with disabilities, and UDL and inclusive education are poorly understood as interchangeable concepts.

5. Challenges in implementing UDL

Some challenges are rooted in the education system as a whole, such as large class sizes, extremely difficult working conditions, lack of resources, and low pay. Teachers also need to consider students' personalities and behavior affecting their learning. The focus on formal exams is another challenge. Lack of support professionals to guide teachers in adapting their teaching, inaccessible environments, and an absence of effective screening and identification services pose challenges. Language and cultural challenges exist in disseminating knowledge about UDL. For instance, there is no Chinese website on inclusive learning or UDL, and these are not popular topics in Chinese educational research. Additionally, teachers and lecturers' attitudes and resistance might stand in the way of the use of UDL, especially where disability is associated with inability and low expectations. Questions also arise regarding the extent to which a concept created in Western contexts, such as UDL, can be imported into the global South where poverty is a driving force.

#### 1. POTENTIAL IMPACT OF UDL

There is a strong recognition that UDL has strong potential to lead to higher achievement outcomes and thus reduce the risk of stigma for marginalized children, including those

with disabilities. The framework recognizes the individuality of learners and creates more collaborative approaches as well as increased digital inclusion if support structures are implemented that enhance equity and accessibility.

UDL's features of openness, flexibility and foresight can enlighten teaching and learning practice, moving the focus of current teaching methods from the curriculum and texts to the learners. It blends well with local philosophies of personal responsibility (e.g., Confucianism), interactive learning, and meeting students' needs. A critical and contextualized approach to UDL is advocated in the global South.

## 2. RECOMMENDATIONS FOR FURTHER RESEARCH

After considering the themes and the limitations that were present within the reviewed studies, the researchers determined the following recommendations for further research:

1. What kinds of capacity building do teachers need in UDL? This refers to strategies for teacher development.

2. What are the needs of teachers for UDL? This refers to what teachers need to have in place in the implementation process.

3. How does lack of resources affect the implementation of UDL?

4. How can teacher resistance to UDL be overcome?

5. What is the understanding of UDL and inclusive education?

6. What kind of collaboration with educators and researchers from high-income countries is useful for UDL?

7. How can technology be used for UDL in LMIC contexts?

8. What is the role of families and communities in implementing UDL?

A full report of the study is available at: **www.idea.uct.ac.za**[1]

## 3. PARTICIPANT DISCUSSION

Presenters framed the discussion around four primary questions:

- How can UDL principles be applied in LMICs?
- What research needs to be conducted to support this implementation?
- What common barriers to research exist in low- and middle-income contexts and how have researchers overcome them?
- What measurement tools might be useful to research the effectiveness of UDL?

Participants were offered multiple ways to contribute to the discussion, either by unmuting and sharing their thoughts aloud, by typing in the chat box on Zoom, or adding to a Jamboard (a Google-designed communication tool). Below is a synthesis of the by discussion broken down by question:

### a. How can UDL principles be applied in LMICs?

Much of the discussion around this question focused on exploring research into three primary areas: a) how can the UDL principles help teachers learn to think beyond their traditional methods of teaching to support students through multiple means, especially when provided with examples contextualized to their local environment; b) how can the UDL principles contribute to ensuring the participation of previously marginalized groups, such as persons with disabilities, girls, etc., by supporting the development of learning expertise that will assist students throughout their lives; and c) how are the principles of UDL best introduced in preservice teacher education to better support system wide change in reducing barriers.

It was felt that it is important to connect UDL principles to the country's philosophies so that teachers and the community can make the connections to why UDL is important. The example of Ubuntu in an African context was given. A participant wrote, "focus on principles rather than the framework - UDL is not a checklist - rather a set of key principles - take the context into consideration to support inclusive environments."

1 http://www.idea.uct.ac.za/sites/default/files/image_tool/images/578/resources/2021/UDL_review_report.pdf

### b. What research needs to be conducted to support this implementation?

A participant shared, "research can start with exploring what resources are already available that can be built upon and by exploring current understanding of UDL among educators and other stakeholders." An important area of research highlighted under this topic targeted the better understanding of what current practices look like in LMICs. "There are efforts done, but not termed 'UDL' specifically". Observing how preservice educators are currently instructed about inclusive education will help identify how UDL can be brought into the curriculum. Participants felt that the more UDL can be linked with current practices, the more likely it will be adopted.

A related topic that participants identified as an important area for further research is how UDL can be incorporated into formal teacher training as both an experience and knowledge base that teachers can draw on once they are in the classroom. This includes what training mainstream teachers require, what training format is best and how mentoring can be applied for ongoing support. In addition, it is important to understand how UDL is applied differently at different education levels (i.e., how do learner needs differ by age/grade?).

Finally, participants highlighted that more research is needed on how UDL is adapted to fit the local context. In particular, it is important to consider low-tech, no-tech solutions, as opposed to the high-tech solutions often seen in UDL implementation. One participant recommended discussing "concrete examples of where UDL has been used where there are limited resources, but using materials from the local environment and how are we organizing those classrooms?" An important understanding is that we must involve local researchers and educational experts in LMICs to list challenges and potential solutions, as they understand their needs and the context better than anyone.

## 4. WHAT COMMON BARRIERS TO RESEARCH EXIST IN LOW- AND MIDDLE-INCOME CONTEXTS AND HOW HAVE RESEARCHERS OVERCOME THEM?

Three principal barriers to research were shared during the discussion. These included a lack of adequate funding, a lack of research capacity on the ground, and differences in school structures. Funding, in particular, was cited as a major barrier to research in LMICs, but this also has an impact on the development of research capacity in local contexts. All research, but UDL in particular, relies upon the tracking of student performance and the recording of data. Many teachers in LMICs, however, are either not accustomed to such rigorous data collection or do not have the time/capacity when dealing with large class sizes. As one participant put it, "funders sometimes favor researchers from the global North as they appear well-known/established. UDL researchers from LMICs are left behind." In order to overcome this barrier, it was suggested to involve local stakeholders from colleges and universities in research projects in LMICs. This benefits research projects by drawing upon the knowledge of local academics while, at the same time, also helping to develop research capacity on the ground. It was also suggested that greater funding be made available for teachers and researchers in LMICs to run their own projects.

The third barrier to research identified by this group was the difference in school structures in LMICs, from how the community is involved (or not involved) with the school, to what traditional teaching looks like and the level of technology available within classrooms. One participant highlighted that "the gap between the school and the home may hinder the success of efforts to implement UDL." This suggests that research could explore how parents can be included in trainings to help support advocacy and learning within the household. Furthermore, research into the impact of rigid curricula on making changes in teaching or materials may be helpful. For this reason, it is suggested to seek government buy-in for research projects around education. Finally, as has been mentioned previously, LMICs work with a different set of resources than high resource countries in the global North. These materials may not transfer easily to the reality of the environments in LMICs. There is a recommendation for "looking at the local context and utilizing materials and resources available locally."

### 5. WHAT MEASUREMENT TOOLS MIGHT BE USEFUL TO RESEARCH THE EFFECTIVENESS OF UDL?

"We need more evidence - even if simple, basic observations." Participants emphasized two major themes in response to this question: we need to be creative in our efforts to measure UDL implementation in LMICs, and we need a broad range of data types. As stated earlier, it is necessary to begin by working together with local partners – NGOs, universities and schools. With this in mind, monitoring and evaluation should be a part of all projects. Members of the breakout room suggested a variety of strategies, including surveys, whether existing or created for the purpose of this research; action research by teachers in the classroom; and observational research to examine UDL implementation. This research should examine not only aspects of individual learners – such as scores on Early Grade Reading, for example – but how the overall environment has changed. Finally, it is important to look at how the introduction of UDL has changed teacher behavior, especially by gathering feedback on "how they understand UDL, how they are or are not using it, and what they perceive as their needs."

### 6. SUMMARY

UDL has been researched across the world, but the needs and experiences of LMICs are unique in comparison to upper middle- and high-income countries. This breakout session focused on an analysis of the current research on UDL implementation in LMICs and shared those findings which were broken down into the five areas of capacity building of teachers and instructors on UDL, levels of technology, the role of communities and families in UDL, disability and UDL, and challenges in implementing UDL. They then shard the potential impact of UDL as well as their recommendations for future research. The group finished by leading a discussion with the participants asking how UDL principles could be applied in LMICs, what research needs to be conducted to support this implementation, what common barriers to research exist in low- and middle-income contexts and how have researchers overcome them, and what measurement tools might be useful to research the effectiveness of UDL.

## B. POLICY

The Policy breakout led by Emily Vargas-Barón, Anne Hayes, and Sue Swenson guided webinar participants to consider options for the development, adoption and implementation of policies at different levels and in different contexts. The intent of these policies is to create stronger enabling environments for UDL in early education settings, such as childcare and development centers, inclusive pre-primary education classrooms, and inclusive primary education, from the inception year and onward.

Dr. Vargas-Barón, Director of RISE Institute, focused on strategies for the inclusion of UDL in policies. She noted that in a 2019 global survey on inclusive early childhood development (ECD) and early childhood intervention (ECI), only 19.7% of programs stated that they used UDL in their programs (Vargas- Barón, Small, Wertlieb, Hix-Small, Gómez Botero, Diehl, Vergara & Lynch, 2019). She concluded that there is a global lack of awareness and utilization of UDL. Policy reviews have shown that few national early childhood education (ECE) and general education policies or plans, such as those readily available in Planipolis (see **planipolis.iiep.unesco.org**) of the International Institute of Educational Planning, call for the implementation of UDL in pre-primary, primary and secondary schools. Field visits in many countries have revealed that a considerable number of international and national specialists in education and early childhood education and development lack training and even a basic understanding of UDL. Similarly, few principals, supervisors, teachers and teacher aides are trained in UDL concepts and practices. Unfortunately, even though some have received brief training workshops on UDL, few implement it well – or at all - due to a lack of systemic support.

Findings suggest that more focused attention should be given to:

1. inserting UDL in policy planning,
2. encouraging the inclusion of UDL concepts and practices in policy planning initiatives,
3. working with policy leaders regarding the inclusion of UDL in policies,
4. implementing policies that address the use of UDL core concepts and methods, and
5. expanding greatly advocacy and pre- and in-service training for UDL.

Regarding possible strategies for moving forward, UDL should be included in:

- national multisectoral ECD policies, strategic plans, and legislation,
- ECE policies, strategic plans and legislation,
- sub-sections of national education policies and plans,
- bylaws, regulations, guidelines, protocols, accreditation requirements, and other regulatory documents, and
- service, personnel and performance standards.

For decentralized systems, similar statements should be included in provincial and municipal policies, plans, and regulations.

Within ECD, ECI and ECE policies and/or strategic plans, the following strategic priorities related to UDL should be included:

1. Advocacy and awareness raising about UDL and its importance in attaining the United Nations Sustainable Development Goal 4.2 (ensure that all girls and boys have access to quality early childhood development, care and preprimary education so they are ready for primary education) (see **https://unric.org/en/sdg-4/**).
2. Pre- and in- service workforce training in UDL concepts and procedures
3. Emphasizing the importance of parental participation and school involvement
4. Providing support for the institutional implementation of UDL in schools through providing appropriate in-service training for principals, supervisors and teachers together to the extent possible.
5. Ensuring strong accountability through including output and outcome indicators and criteria for evaluation in educational management information systems
6. Providing guidance for quarterly and annual reporting with a feedback loop to annual program and budgetary planning.

The next portion of the presentation, led by Anne Hayes of Inclusive Development Partners (IDP) focused on the importance of policy as a catalyst for change and a way to reinforce UDL in the classroom. Historically, many countries state in their policies that they support a flexible curriculum but this is often seen as a vague concept that is often open for interpretation by educators and practitioners on how to implement a flexible curriculum. As a result, programming often does not follow evidence-based practices for inclusive pedagogy and learners with disabilities continue to be left behind. Increasingly, however, many governments are explicitly referring to UDL within their education policies and strategic plans.

For example, Ghana has UDL specifically referenced within their national policy on inclusive education which paved the way for IDP to conduct a pilot project in the country to show how implementing UDL supports all learners with and without disabilities. Ghana's commitment to UDL is also being realized through integrating UDL in pre-service training as well as utilizing UDL principles in the government remote learning activities during COVID 19. Though it is feasible to implement UDL without a national legislative mandate, having such mandates in place also helps to set priorities for donors. For example, in Ghana both UNICEF and the World Bank are investing in UDL activities.

In addition to the need for countries to explicitly state their commitment to UDL in their education policies, it is also crucial for bilateral and multilateral donors to articulate their support for UDL in their funded education programs. In 2018, USAID released the Universal Design for Learning to Help All Children Read Toolkit (Hayes, Turnbull & Moran, 2018) which is recognized within USAID's Program Cycle Implementation and Operational Guide (USAID, 2020) as a document to guide good practice and technical assistance. Anecdotally, we see an increase in implementing partners of education programs request the integration of UDL into their early grade reading program. In fact, there are elements of UDL in recent solicitations for funding for Guatemala, Malawi, Tajikistan and Rwanda early grade reading projects. Other donors such as UNICEF and the World Bank have also integrated UDL principles into recent guidance documents. For example, The World Bank 2020 publication titled: Lessons Learned from the COVID-19 Crisis for Learners with Disabilities (Lennox, Reuge & Benavides, 2021) recommends using UDL to help increase access and learning opportunities during remote learning and UNICEF's guidance on accessible digital frameworks (UNICEF, 2019) uses a UDL framework throughout the document. It is important for other donors to take similar measures moving forward.

### 1. PARTICIPANT DISCUSSION

Presenters posed three questions to participants during the breakout session devoted to policy. The ensuing dialogue resulted in numerous valuable recommendations:

*What policy initiatives for UDL should be undertaken?*

Participants noted that policies should be developed for country levels, including central, regional and municipal levels, at the school or agency level, and for classrooms and agency centers to help ensure a broadly-based commitment and consistent commitment to full UDL implementation.

#### a. How might these policies be implemented?

Ideas included:

- Pre- and in-service training workshops, field practice and reflective supervision, coaching and mentoring should be used. Criteria for implementation and indicators for use in program monitoring and evaluation should be included.
- Purposeful piloting of UDL concepts and methods should be undertaken at first, with the goal of taking the pilots to scale as rapidly as possible.
- Schools and agencies should not wait for budgets to be made available. Rather, after initial training, programs should move ahead with UDL implementation as they seek additional support to meet program costs for adaptive structures and equipment, specialist support for complex child development challenges, teaching and learning materials, etc. Once started, experience has shown that programs can attract support when manifest needs and evolving requirements are identified.

#### b. Who should implement these policies?

The main actors in implementing policies for UDL should include:

- policy planners to ensure good follow-up after policy adoption,
- school principals, agency directors and program managers to demonstrate their strong commitment to implementing UDL core concepts and practices,
- teachers, teachers' aides and specialists, as may be needed, and
- parents, legal guardians and others who have the primary responsibility for making decisions regarding their children's educational support and progress.

### 2. SUMMARY

The policy presenters shared information from a global survey which articulated the gaps in policy related to UDL and how those gaps can be addressed. Next, the presenters shared the importance of policy as a way to shift classroom practice. The policy presenters concluded the session by asking participants to share their thoughts about the following questions: what policy initiatives for UDL should be undertaken, how might these policies be implemented, and who should implement these policies?

## C. SYSTEMS

A system is a unit made up of different components that are organized for a purpose. Each component affects other elements of the system directly or indirectly. To change the system, one or more of the components experiences change, affecting other factors and the system as whole. This presentation led by Golnar Abedin and Loui Lord Nelson, provided examples of district-level, school-level, high-tech and low-tech contexts and discussed the promises and challenges of the *system-wide* implementation of UDL as an inclusive education framework. Though two of the examples during this breakout came from the United States, which is identified as a high-income country based on Gross National Income (see **www.worldatlas.com**[2]), the intimate knowledge of system-level implementation shared by the presenters helped communicate the issues and complexities.

The following questions guided the information presented as well as the discussion with the session participants:

2 www.worldatlas.com/articles/the-highest-incomes-in-the-world

1. Why do you think your system needs to change? What are some current barriers to achieving the goal of inclusive, quality education for all in your professional setting/system?
2. What UDL-driven inputs have you added or anticipate adding at a systems level to improve inclusive learning? Identify the educational inputs and organizational components that need to change to improve outcomes for all.

The first question encouraged participants to think through the rationale or need for UDL implementation by identifying barriers to inclusive, quality education in the system in which they are operating. In order to convince stakeholders regarding the importance of implementing the UDL framework, principles, and strategies, it is important to first establish *why* and *how* UDL can support identified barriers to inclusive education. Subsequently, stakeholders need to identify parts of the system that need to be changed before prioritizing and action-planning.

The second question focused on the most critical and high leverage education-related inputs in each context and at each stage of the system-change process. Inputs included but were not limited to teacher development, curriculum design and delivery, educational goals, and policies. Using UDL as a framework shapes the journey toward the implementation of inclusive education. It becomes a systems-level project which requires the identification of (a) educational inputs to design or change, (b) determining institutional, systems-based, and mindset barriers, and (c) prioritizing various design principles or components of an organization or a system in a step-by-step process of change.

## 1. SCHOOL-LEVEL IMPLEMENTATION

Dr. Abedin shared her experience of developing and implementing an inclusive school program called Creative Minds International Public Charter School in Washington, D.C., based on the UDL design principles of multiple means of engagement, multiple means of representation, and multiple means of action and expression. The school gained approval based on the goal of providing a quality educational experience for all students, including those with learning challenges and disabilities who were not well served within the mainstream public-school programs offered in Washington, D.C. To accomplish this mission, the program incorporated a projects-based, thematic international curriculum that was inclusive for students from various cultures and with different learning styles, a strong social-emotional curriculum, teacher training in child development and students' unique sensory integration processes, an arts education program, and individualized services for students with disabilities based on their needs. In addition, the school's daily schedule of activities and offerings took into account the developmental, social-emotional, and cognitive needs of students in order to optimize student engagement.

In the broader educational context within the United States, public schools are held to a policy of providing a free and appropriate education to all students, including those with disabilities. The "No Child Left Behind" education policy passed in 2001 tied school accountability to students' standardized test scores, by evaluating school quality through measuring and publishing a school's test scores for all students, as well as for subgroups of students, such as those with disabilities. One of the consequences of the policy is that schools are incentivized to emphasize predetermined grade level standards to enhance students' test performance, shifting focus away from student's individual needs. The policy's misalignment with the Individuals with Disabilities Education Act (IDEA[2]), which was intended to guide educational planning for students with disabilities based on their individual needs, has never been resolved. Inclusion in this context has become an after-thought and a band-aid approach when schools are incentivized to focus on test score performance as the indicator of academic outcomes, instead of prioritizing student needs and environmental inputs. These system-level policy discrepancies in educational goals and priorities are left to school-level actors to resolve; as a result, schools struggle to address the needs of students appropriately.

As a public school, Creative Minds International also faced some of the challenges of balancing student's individual goals within the school accountability system's demands with regards to test score performance as the main indicator of student success. However, according to Dr. Abedin, a unique benefit of starting a school from the ground up was the opportunity for proactive approach to an inclusive program design, and the recruitment of teachers and stakeholders who endorsed the school's clear mission to

meet the needs of all learners. Teachers endorsed inclusive education and understood that their role was to meet the holistic needs of all students through a unique program that required ongoing training in the relationship between sensory processing and learning, as well as the different social-emotional and academic needs of a wide range of students.

The program was highly successful for early childhood and elementary grades, but faced some obstacles with the addition of a middle school program. Challenges included a larger school size as the student population grew, a shortage of qualified teachers who had pedagogical and content knowledge to effectively teach secondary education subjects, and a wider range of student abilities for teachers to plan for in higher grade levels due to new students entering the middle school program from other elementary schools with gaps in their social-emotional and academic growth based on their prior educational experiences. In addition, the broader public school system's ongoing emphasis on standardized test scores as the main assessment of students' academic success led parents of non-disabled students to move to schools that emphasized grade level content knowledge over students' holistic needs, and to schools that served fewer students with disabilities. At the same time, as the school gained popularity for meeting the needs of students with learning challenges, demand and enrollment grew and tipped the percentage of students with disabilities from 25% of the school population to up to 60% in the upper grades. An analysis of the strengths and challenges of this UDL designed school serves as a lens to view the complexity of education systems, and consider how various systems-level factors interact to promote or impede inclusive opportunities for students who are most often marginalized. The multifaceted aspects of growth and learning addressed by the school also serve as a model in the process of identifying education-related inputs that can be addressed to improve inclusive education through UDL practices at the school level.

## 2. DISTRICT-LEVEL IMPLEMENTATION

An example of district-level implementation in Washington, D.C. during COVID school closures was shared by Dr. Abedin, who led and facilitated a UDL training project sponsored by the DC Special Education Cooperative across multiple public charter schools. The project consisted of online training in UDL principles and strategies that lead to inclusive classroom and virtual learning practices. The participants included public school teachers and leadership teams.

As a first step, a number of barriers during COVID school closures which negatively impacted students, parents, teachers and school leaders at various levels of implementation were identified. It was recognized that it was not within the scope of the project to address all the recognized barriers. In this context, the assessment of various obstacles was a mental exercise and a vehicle for the acknowledgement and validation of the realities and constraints principals and teachers were confronting in the COVID context of school closures. In addition to obstacles in the broader educational context related to access and technology, other barriers listed below surfaced in the discussions and implementation phase of the UDL training sessions.

### a. Students/Parents.

Barriers that affected some students and parents in the virtual learning context included lack of access to technology (computers/laptops), a quiet/private space to learn at home, child care responsibilities for younger siblings when parents had to work, and a lack of prior experience using technology and the various platforms teachers used for instructional delivery. These obstacles were more prevalent among students of lower socio-economic backgrounds and students with disabilities.

### b. Teachers/Principals.

Teachers and principals had varying degrees of prior knowledge and understanding of inclusive education and the UDL framework, and most had no prior experience with online instruction. Some were familiar with concepts related to inclusive education, such as the varying needs of students with identified disabilities, and had some knowledge of the importance of incorporating different modalities of teaching and learning encompassed in the UDL principle of "multiple means of representation."

Teachers who participated in the training sessions reported lack of student engagement as the primary challenge they faced. It was not always clear what caused students not to participate or engage in online classes. Some lacked access to technology or a learning space at home, while others

who attended sessions could not access the curriculum or the lessons due to the teacher's challenges in differentiating content online, a lack of prior knowledge of content, the model of instructional delivery, difficulties processing information or using the various platforms used by teachers.

In the sessions, Dr. Abedin facilitated training on how to apply UDL strategies to enhance online practices and modify lesson plans with the goal of improving student engagement and access to academic content. While progress was made toward the goal of reaching and engaging more students in learning, there were clear barriers to ideal practice related to contextual factors in the given educational system that were beyond the scope of the project. The top three barriers within the context of the training included 1) limited attendance of school leaders to the training and the absence of UDL implementation at the school-level, 2) the schools' continuous push toward standards-based education and standardized testing which demands that all students have grade-level mastery of content, and 3) the lack of planning time. At the end of the project, Dr. Abedin created a self-paced online course to allow flexibility for teacher and leadership participation and access to UDL tools and strategies for classroom and virtual instruction.

## 3. LOW-TECH EXAMPLE

Dr. Nelson shared the work she did with the organization Building Tomorrow (BT), Uganda, and how BT is using UDL as the root for initiating inclusive practices in the classroom. Building Tomorrow focuses on improving access to child-friendly, community-supported schools in rural Uganda via two initiatives: Primary School Construction and their Thriving Schools Program. The former builds the capacity of local communities and leaders through the design and construction of primary schools where inclusive and transformative education takes place. The latter is a program designed by Building Tomorrow to supplement literacy and numeracy skills of all children.

The organization hires recent college graduates to act as Fellows. That role requires the young person to interact with the school (e.g., teachers and head teacher), community members, and families. Fellows deliver information about access to education, enrollment, and resources with the goal of enrolling as many children into school as possible and keeping them enrolled. They also collect and enter attendance data that are sent to the Ministry of Education.

From teachers' point of view, Fellows are a reliable source of information about instruction and are key observers of classroom practice. The Fellows see what techniques teachers are using and where they would appreciate additional instruction. Because teachers and Fellows expressed the need for additional instruction on inclusive practices, Dr. Nelson was charged with designing a workshop and follow-up practices to provide this information to five teachers, the Fellows that partnered with their school, a district-level district disability officer and an employee of BT.

Dr. Nelson identified specific, UDL-driven instructional strategies and adapted current strategies in ways that would support the inclusion of students with disabilities. It was determined that it would not be appropriate to provide specific instruction about UDL; rather, it would be more applicable and useful to help teachers gain initial skills related to inclusion. UDL was the foundation for the design of each strategy, the format and delivery of the workshop, and for the follow-up materials discussed below.

After the workshop, teachers returned to their classrooms and applied what they learned. Two months later, Dr. Nelson, the Fellows, a BT staff-person, and the district-level disability officer visited the teachers' classrooms to observe and video record the teachers implementing these strategies. Dr. Nelson met with each teacher and talked to students from each classroom to hear how instruction had shifted, whether the students felt they benefited from the instruction, and to hear whether teachers felt more confident in their ability to teach students with disabilities.

Though not a formal study, the results were promising. All five of the teachers selected at least one strategy and practiced applying it. The teachers reported that their students were more engaged and demonstrated a deeper understanding of the content. Students also reported a higher level of engagement and believed they learned more effectively. Unfortunately, there were no known students with disabilities present, though there are an estimated 2.5 million students with disabilities across Uganda (The World Bank, 2020), so there is a strong likelihood that there were children present with undiagnosed disabilities.

The conversations, classroom visits, and interviews were

video recorded. The footage along with interviews with Dr. Nelson were curated to create a series of 10 videos that describe strategies as well as instructional tips teachers can use in classrooms where there are limited resources (e.g., no electricity or digital devices, but a plethora of natural resources like cardboard, water bottles, and items found in nature). These videos are now used to train additional Fellows as well as teachers: **www.buildingtomorrow.org**[3]

Though children are not currently in school, these strategies are being used in Building Tomorrow's Camp Tomorrow, a series of learning opportunities designed to promote continued learning. BT staff have received training in five of the strategies and are delivering those workshops to the Fellows. The videos provide a clear demonstration of each strategy in an engaging and local way that empowers the participants in their understanding and ability to communicate the strategy to others.

Dr. Nelson concluded her portion of the presentation with an emphasis on the breadth of UDL. As was demonstrated in this small project, all learners benefit from the options and the supports teachers provide when planning and teaching using UDL. Unfortunately, most funders place UDL in the category of special education projects which limits the impact of the framework and has led to significant misunderstandings about who benefits from the framework. Dr. Nelson encouraged funders to shift UDL out of disability-specific projects and into general education projects.

## 4. PARTICIPANT DISCUSSION

Drs. Abedin and Nelson used Jamboard to collect responses from the session participants. The participants in the session represented various contexts and countries, with high and low-tech educational resources and their responses demonstrated this variability. They shared the following responses to the prompt: What are your top two barriers to implementing UDL at the systems level? Interestingly, the representative of separate issues that included societal definitions of education, policy models around testing and UDL, the lack of applicable implementation models, the lack of necessary training, poor infrastructure, a lack of trust in educators, and a misunderstanding of how learning occurs and how to support learning. For example, responses such as: "What is education for? My government doesn't know!", and "Poor infrastructure and lack of policy in place" point to policy models that do not support UDL. Additional comments like, "A long-held belief that students are empty vessels that the expert teacher will fill," and "perceptions on specific learning needs by teachers, parents and communities" point toward a lack of knowledge around variability and the disbelief that all students can learn. The breadth of this feedback points to the challenges of implementing UDL.

Though there are no simple solutions, what is known is that implementing UDL at the systems level requires a close look at what other initiatives are present and whether those initiatives compete against or align with the framework (Berquist, 2017). For example, if a selected curriculum is narrow and does not allow teachers the flexibility to add resources, teach the content in different ways, or assess in ways that tap into student strengths, that curriculum competes against UDL. If a school encourages teachers to use a variety of resources to teach students, whether those resources are digitally-based or are natural resources, then there is likely alignment with UDL. Even this preliminary investigation can help determine the pathway a system should take to prepare itself to adopt UDL as a framework for change.

## 5. SUMMARY

While there are some common themes and obstacles, the pathway to implementing UDL at the systems level is entirely context-driven. As profiled during this breakout session, baseline knowledge about inclusion and variability, the types of resources available, knowledge about the framework, and the ability to provide continuous training impact how UDL is adopted. The type of system, one with access to a variety of both digitally-based and non-digital resources versus a system with access to only natural resources is not a barrier. UDL is homed in an understanding that all learners are variable, that all learners can be engaged, need access to the content and skills taught, and require a variety of ways to demonstrate their own knowledge and skills, and that all learners can become expert learners.

3 https://www.buildingtomorrow.org/programs/thrivingschools/inclusion60/

## D. CLASSROOMS

Hayley Niad, with Inclusive Development Partners (IDP) and Yacine Hakmi with World Learning brought insights from classroom teachers implementing UDL in Ghana and Algeria. Presenters aimed to share teachers' direct experiences in receiving training in UDL and applying the framework in classrooms. Hayley Niad shared the perspectives of Mrs. Abdulai Asana, a teacher from Falahiyat Primary School in northern Ghana. Mrs. Asana is one of 15 teachers that IDP supported, in partnership with UNICEF and the Ghana Education Service, to make teaching and learning more inclusive and reflective of UDL principles. This project was delivered in line with Ghana's own Inclusive Education Policy (see **sapghana.com**[4]), which clearly emphasizes the role of UDL as a foundational principle in ensuring equitable access to inclusive education for students with and without disabilities.

Mr. Hakmi shared insights from a privately-funded teacher training initiative at the Algiers STEM Center which aims to strengthen teachers' abilities to apply the UDL framework to create inclusive classrooms for learners of all abilities and demographic profiles. Some 250 graduates of the program from across Algeria have participated in classroom training sessions followed by an average of 35 hours of supervised practicums leading STEM workshops with students aged 6 through 28. The current presentation aimed to share insights into the experience of teachers implementing UDL as a new skill in a country with an otherwise highly prescriptive pedagogical approach that has rote learning at its core.

Perspectives of classroom teachers who work directly to support struggling learners are incredibly impactful in articulating the shift from envisioning UDL in theory to utilizing UDL in practice. A recording of Mrs. Abdulai Asana's experience teaching in Ghana gave participants insights into her experience implementing UDL in her classrooms. Mrs. Asana works in a district of Ghana that is extremely poor, has few available material resources and no running water, and where classrooms can regularly reach over 110 degrees Fahrenheit in the hot season without any access to cooling. Mrs. Asana has been working in her school community for more than fifteen years without ever being registered on the official national payroll. She is paid only through community contributions.

In spite of these barriers, Mrs. Asana is committed to ensuring each of her learners has the opportunity to succeed and develop foundational literacy and numeracy skills. A high-performing teacher prior to the UDL pilot, Mrs. Asana identifies UDL strategies that further enhance the teaching and learning environment in her classroom. During her presentation, Mrs. Asana spoke about the way that UDL approaches have helped to transform her classroom, including:

- Multiple means of engagement: Mrs. Asana uses morning meetings with learners seated in a circle. She throws a ball to different students who can describe what they learned the previous day. She also uses this meeting as an opportunity to discuss daily schedule with her students.
- Multiple means of representation: Mrs. Asana uses both large and small group instruction, and during small group instruction she provides individual attention to students in small groups while other small groups work on a specific task. Mrs. Asana nominates group leaders who help to monitor their group's performance of the task. She also uses think-pair-share activities to help learners speak up during lessons and says "this is helping a lot."
- Multiple means of action and expression: Mrs. Asana supports learners to choose whether to write their answer in their notebook, answer verbally, or draw a picture.

Mrs. Asana also has 'talking walls' filled with pictures from storybooks, and notes that learners from other classrooms come to her class during break to learn from the content on her walls, and when she is not in the room her own students can continue to learn.

To introduce the experience of Algerian teachers practicing UDL, Mr. Hakmi used the Mentimeter interactive presentation tool to poll participants, asking "How does the learning process happen?" Responses showed participants' existing awareness of the UDL framework as the following terms

4 https://sapghana.com/data/documents/Inclusive-Education-Policy-official-document.pdf

appeared on the screen: "through interaction, "practice," "active engagement," "reflection," "experience," "discovery," "scaffolding," and "play." Mr. Hakmi then illustrated the difference between a traditional Algerian classroom and one that has been redesigned with UDL at its core. Algerian teaching methods typically favor rote learning of theory with instruction conducted in classical Arabic or French, neither of which are the native language of most students. This classical approach creates enduring barriers to student engagement and participation in learning. With the STEM teacher training applying the UDL framework in course modules, graduates of the UDL teacher training in Algeria are able to redesign activities with hands-on learning opportunities that remove the language barrier and feature a high rate of student engagement as a core feature of the learning process.

## 1. PARTICIPANT DISCUSSION

The Classrooms breakout room session shared further discussion of core findings and lessons learned from practitioners. The breakout session did not attract many participants and feedback on probing questions was limited. Presenters recommended further discussion amongst classroom practitioners on the following core findings and lessons learned from each project. These included the following core findings and lessons learned from the IDP pilot in Ghana:

- Participation in a comprehensive program focused on UDL can help facilitate a major transformation in educators' preparedness to implement inclusive education in their schools. For example, participating teachers in the IDP pilot demonstrated increased confidence in implementing UDL principles in their work, implementing small-group instruction, and preparedness to teach struggling learners.
- UDL does not require high-cost material resources in order to be effectively implemented. Teachers used a variety of low- and no-cost teaching strategies to support their learners with diverse needs, including small group activities, games and songs, use of concrete objects, and providing student choice in response.
- Inclusive education is most successful when education and community stakeholders are closely involved. The more supportive classroom teachers perceived headteachers and district-level officials to be throughout the project, the more comfortable the teachers felt teaching a child with a disability. Also 100% of teachers noted improved community attitudes toward disability, thanks to the involvement of Parent Teacher Associations (PTAs), religious groups and chief councils, and direct outreach to parents.

Core findings and lessons learned from the UDL in STEM teacher trainings in Algeria were as follows:

- Program graduates consistently report that participating in UDL-designed lessons as part of their own training experience is most helpful in implementing the framework in future teaching practice. The UDL in STEM program is experiential in nature, with trainees learning a new skill in a UDL-designed workshop format, then debriefing the experience step-by-step and identifying the UDL components the instructor had integrated into the lesson plan. Comparing and contrasting the UDL-designed workshops with participants' own traditional classroom experiences helps to increase engagement and familiarity with framework components and promote application in future teaching practice.
- Scaffolding participants' practice of UDL in instructional design prepares and empowers teachers to effectively apply the framework. A UDL-designed classroom is vastly different from the learning environments that shaped the Algerian participants' own educational experiences. Giving participants multiple opportunities to implement UDL in real settings while receiving immediate feedback strengthens their practice of the approach and improves teacher skill in future instructional design.
- Assuring that the teachers are both beneficiaries and facilitators of inclusive classroom design creates deep and lasting attitude change toward creating inclusive settings, empowering participants to serve as agents of inclusive classroom design. Using UDL to reduce language-induced barriers to learning, increasing opportunities for engagement and offering multiple means of participation in teachers' own training creates a deeply personal connection with the experience of being meaningfully included in a classroom - thus strengthening graduates' commitment to constructing inclusive environments in their future practice.

Next presenters discussed the hallmarks of a UDL-designed classroom, and how application of UDL might differ in LMIC contexts like Ghana or Algeria. Participants concurred that the classrooms utilizing UDL strategies may look different in various country contexts. In the United States where resources are more ample, UDL may often be associated with the use of technology to enable access to the curriculum for students with disabilities. In countries such as Ghana where textbooks may be shared amongst many learners and little or no budget exists for supplementary materials, teachers must demonstrate creativity to apply UDL principles with available resources. IDP has observed Ghanaian teachers creating board games for mathematics practice using manila paper and markers, students practicing addition and subtraction using stones and bottle caps, and teachers creating 'corner shops' to practice money skills using grocery items brought from their own homes. Other non-material UDL principles include jumping and clapping, small group work, or promoting student choice. Many such strategies have been widely used prior to teacher training on UDL, which suggests that foundations of inclusive practice exist in many schools under different names.

In Algeria, classroom resources vary drastically between urban centers, interior plains, rural mountains and the vast Sahara Desert. The UDL in STEM training focuses teachers on the basic design behind learner experiences, taking into account a variety of high-and low-tech options. Both UDL and STEM education are commonly associated with access to sophisticated technology yet trainees learn that the underlying principles of effective instruction in both areas lies in "design thinking." Student engagement can be activated via a quick "think, pair, share" warm up, tossing a ball from student to student in a classroom or having a pre-course chat on Discord or Google Classroom. The central design objective is amplifying the student voice in the learning experience.

Based on these experiences and reflections, the presenters made the following recommendations for further UDL implementation in both classrooms and beyond.

1. Ensure national education actors have clear accountability mechanisms for monitoring UDL implementation. Many pilot activities come and go, but those that endure are grounded in accountable local leadership.
2. Seek opportunities to expand UDL training to pre-service education institutions. In-service programs help to support the existing teacher workforce, but pre-service training offers the best opportunity to develop new cohorts of inclusive educators from the very start of their careers.
3. Ensure that UDL concepts are embedded into all teacher training initiatives to limit treatment as a standalone subject. UDL can be applied in the teaching of any subject, and as such, should be embedded across thematic areas to avoid siloing inclusive principles.
4. Collect and report on teacher- and student-level data to contribute to growing evidence base and justify expansion. Documenting and sharing effective inclusion practices is essential in filling a significant gap in evidence-based inclusion practices in environments with few resources.

## 2. SUMMARY

This breakout provided stories from LMICs where educators are using the UDL framework to design their lessons and their learning environments. Participants heard from a teacher in Ghana who has shifted her instruction to include strategies driven by the three principles of UDL. From her perspective, these shifts have significantly benefited her students. The second presenter focused on the training and subsequent application of UDL-driven strategies in STEM classrooms across Algeria. They have focused on the key idea of design thinking as the impetus for bringing UDL into STEM instruction. Together, these presenters offered their recommendations to improve classroom-level implementation of UDL.

# IV. PROPOSED NEXT STEPS

The UDL Side Event enabled participants to learn about and respond to UDL-related subjects including research, policy, systems-level implementation, and classroom applications. Each breakout summarized examples from the field where there have been successful applications of UDL but where growth is also necessary. Presenters provided suggestions for the future and participants added contextual examples and feedback. The following sections provides two suggestions and a concluding thought for the global UDL community to consider as a way to identify similarities across settings, whether at the classroom, district, or country levels.

The international community has responded enthusiastically to the use of the UDL framework to guide inclusive education practices across low-middle-income countries (Dalton, McKenzie & Kahonde, 2021; Gronseth & Dalton, 2019; McKenzie, Karisa, Kahonde & Tesni, 2021). As shared in this white paper, that enthusiasm has translated into a variety of investigations, proposed and enacted policy, initial movement toward system applications, and the use of UDL in classrooms across a variety of contexts. While each of the four breakout sessions provided concluding remarks with reflections and next steps, there are two additional tools which can be applied in any context to look for similarities and differences across contexts and support the implementation of UDL. The first tool builds on the research breakout group's question, *What measurement tools might be useful to research the effectiveness of UDL?* The second tool connects to research, systems change, and classroom application.

## A. UDL REPORTING CRITERIA

The UDL Implementation and Research Network (UDL-IRN) is an organization aligned with CAST, the founders of UDL. Since its inception, the UDL-IRN has sought to bring together practitioners and researchers to support the growth of UDL throughout all educational systems. The annual conference draws a global audience, including those from low-middle-income countries, to share ideas and insights about UDL.

In 2017, an international workgroup of researchers and educators gathered at the UDL-IRN Summit to discuss the operationalization and application of UDL across contexts and how to report those experiences within the research. Similar to the experiences of those involved with the 2021 Global Education Summit UDL Side Event, the UDL-IRN workgroup discussed how UDL is extremely challenging to measure, identify when in action, and replicate across settings. From that discussion came the desire to create a set of UDL Reporting Criteria to help align future research about UDL so as to identify commonalities and discrepancies more readily. As stated by the UDL-IRN, the UDL Reporting Criteria:

1. define the essential elements of UDL application (for example, how UDL was taken into consideration during the planning or design phase, which guidelines/checkpoints are being applied).
2. provide a guideline for describing essential elements of a UDL-based application and are not intended to be prescriptive or standardize how UDL is used.
3. support clear reporting of key components in relation to UDL (see **udl-irn.org**[5]).

Rao, Smith, Evmenova and Edyburn (2020) led a validation study of the UDL Reporting Criteria. This empirical evaluation articulated the field's ability to share information about learner variability and design, but also identified its inconsistent ability to share information about application and UDL-related outcomes. Further discussion of this research is shared through a podcast interview with the lead author (see **theudlapproach.com**[6]). If researchers across all contexts use these reporting criteria during the design, implementation, and reporting of their research, the field will have more cohesive and comparable information on which to build further UDL implementation.

## B. PRACTICE PROFILES

Another tool that can be helpful to guide UDL implementation is the practice profile. The practice profile is a tool that comes from the field of implementation science and has the potential of supporting educators in their application of the UDL framework. It evolves from a facilitated process

5 https://udl-irn.org/udl-reporting-criteria/

6 https://theudlapproach.com/podcasts/udl-research-in-15-minutes/episode-6-kavita-rao/

with stakeholders to identify, define, and articulate levels of proficiency for specified practices and beliefs related to a chosen topic or domain. These levels are arranged into a rubric format. Because the levels of proficiency are clearly defined, the tool can be then used as a mechanism to help shift practice. The National Implementation Research Network (NIRN) defines the practice profile as a tool which "enables a program to be teachable, learnable, and doable" as well as assessable (see **nirn.fpg.unc.edu**[7]). Because UDL is such a flexible framework, it is crucial that local implementers (e.g., teachers and teacher leaders as well as policy-makers and country-level leaders) are able to clearly articulate the outcomes they are seeking, what the scaffolding will be around their journey toward those outcomes, and how they will know they have reached this outcome. When facilitated effectively, the practice profile tool provides this clarification. Though western-based, the following links provide examples of UDL-focused practice profiles at varying levels of complexity.

The first is an example of a practice profile used throughout a school to affect the design of instruction. This practice profile limits the use of UDL-specific language because the authors worked directly with the staff and wanted to use language that was both familiar to them but also led to outcomes that aligned with UDL: **theudlapproach.com**[8]

A second example is a practice profile used at the district level to identify which schools they determined ready to begin their implementation of UDL. The decision-making behind the tool is purely contextual and is based on the needs they determined within their district. Titled, Fond Du Lac Readiness Rubric, it can be downloaded from: **theudlapproach.com**[9]

The final example of a practice profile is a more complex representation. It looks at the alignment of two educational frameworks and how a district can actively reflect on their implementation of both: **theudlapproach.com**[10] A robust practice profile like this can be used both at a district level and the level of a Ministry of Education.

In each case, significant time was taken for the development of these practices. These are not tools that can be copied from one context to another; rather, these are tools that should be developed through facilitation with local stakeholders who will ultimately apply the tool to their settings. It is through the thoughtful creation of the tool that stakeholders gain a deeper understanding of and connection to what they are implementing. In settings where educators from a variety of nationalities are working together to implement UDL, this tool can provide the necessary clarity needed across languages, context, and educational practices to define what UDL is and how it will be observed within the local context.

## C. UDL BEYOND THE PRINCIPLES

The speakers in this UDL Side Event shared the challenges faced when sharing and implementing UDL. One of the most damaging errors that can take place during the instruction and implementation of UDL is a strict focus on UDL-related strategies rather than seeing UDL as a framework intended to shift not only practice, but mindsets (Nelson, 2021a; Rappolt-Schlichtmann, Boucher & Evans, 2018). If UDL instruction is limited to sharing a collection of strategies and classroom techniques, UDL becomes ill-defined and misunderstood and the field risks diminishing the power and depth of this framework.

UDL was built on the premise of educators having the skills, background knowledge, and resources (e.g., pre-service education, continued education, access to UDL leaders) to understand and act on the defined principles, guidelines, and checkpoints. As noted above, that premise becomes the barrier to UDL implementation in LMICs. Many educators in LMICs are not equipped with the skills, background knowledge, and resources to learn about and implement UDL and need specific support to understand the fullness of UDL.

Concepts including variability, accessibility, flexibility, goals, choice, and rigor as well as the influence of neuropsychology, underlie the UDL framework and are not articulated in the CAST-designed graphic organizer (see

7 https://nirn.fpg.unc.edu/resources/lesson-3-practice-profiles
8 https://theudlapproach.com/wp-content/uploads/Celina_Assessment_Capable_Learners_Rubric.pdf
9 https://theudlapproach.com/podcasts/episode-69-katie-moder/
10 https://theudlapproach.com/wp-content/uploads/Reimagining_MTSS_through_UDL_Practice_Profile.pdf

**www.udlguildeines.cast.org**) (Meyer, Rose, & Gordon, 2014; Nelson, 2019). If researchers, policy-makers, systems change leaders, instructional leaders and classroom educators are not moving from each of these underlying concepts, UDL becomes misinterpreted as a set of disparate strategies rather than an interlaced continuum of supports intended to guide all learners toward becoming expert learners.

In addition, conversations about the Western-based research and focus of the current UDL framework are taking place (Rose, 2020). The LMIC-field of UDL researchers, policy-makers and influencers, systems level leaders, and educators must be part of those conversations to ensure a broader representation of these education environments. UDL offers the promise of guiding learners to know their own learning needs and strengths and how to apply those within any setting, but the framework requires educators to shift their mindsets and practices to allow for this. That shift starts with a thorough understanding of the framework.

## V. CONCLUSION

The 2021 Global Education Summit UDL Side Event provided a diverse collection of UDL leaders the opportunity to share steps they have taken to improve inclusive education through the implementation of UDL. This document provided a summary of the information shared by both the presenters and the participants with the goal of supporting the implementation of UDL throughout low-middle-income countries.

UDL is a complex framework that challenges educational practices that have been used for decades. This kind of change takes time and patience. In his June 29, 2017 retirement message, David Rose, one of the founders of CAST and co-creator of the UDL framework, reminded us of a quote by Reinhold Niebuhr, "Nothing that is worth doing can be achieved in our lifetime" (see **www.cast.org**[11]). There are significant changes that need to occur within educational systems and these changes will take a significant amount of time. What individuals can do in relation to UDL, though, is identify specific steps they can take to grow its implementation with the goal of creating fully inclusive environments for every single child in our world.

11 https://www.cast.org/news/2017/a-message-from-david-rose

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