Creating a Platform for Innovation in Early Learning: experiences from South Africa

ABSTRACT

South Africa is brimming with bold, creative innovators and entrepreneurs. As a country, we can lay claim to many innovations across a wide range of sectors. The Innovation Edge is a multi-donor partnership established in July 2014 to bring this spirit of innovation to the early learning space in South Africa.

Young children are vulnerable by virtue of their age. In SA they are additionally so because of their disproportionate exposure to conditions of severe poverty and the multiple associated deprivations. Inequality in access to learning opportunities in South Africa exists across ages and income levels, marginalizing the youngest and poorest children. While 80% of 3-4 year olds in Quintile 5 (the richest households) have access to ECD centres, only 40% of their peers in Quintiles 1 and 2 enjoy this same right. Service quality also varies dramatically across quintiles, and most ECD centres in poor communities do not meet Government stipulated minimum norms and standards.

To profoundly change the early learning landscape in South Africa, we need new products, services and delivery models for early learning, we need to increase the range of stakeholders engaged in promoting early learning, we need to radically transform mindsets and paradigms in support of early learning and to strengthen the pipeline of human and financial resources. The Innovation Edge supports the development, implementation and evaluation of innovations that challenge the early learning status quo. The Edge supports innovation through three core practices -

- Connecting for innovation - bringing together diverse interests and expertise to contribute to the development, implementation, evaluation and scale of innovation
- Commissioning innovation – contributing to the development and funding of innovations that enhance early learning ecosystems, access, quality and outcomes
- Communicating innovation - enabling the lessons from innovations and from analysis of innovation processes to inform real change for children, at scale.

Over the past 12 months, the Innovation Edge has built up a portfolio of 13 exciting projects, and has successfully bridged sectors and industries to harness the incredible potential for human development that lies in that period between conception and six years of age.

The Innovation Edge is the Research and Development arm of a national ECD programme called Ilifa labantwana. Ilifa was established in 2010 as a multi-donor partnership involving the DG Murray Trust, the FNB Fund, the ELMA Foundation and the UBS Optimus Foundation. In collaboration with Government and civil society partners, Ilifa provides implementation evidence to support the provision of quality ECD services and helps to create the systems necessary to enable the delivery of these services at scale to the poorest 40% of the population from birth to 6 years of age.

In 2014, the Ilifa donors partnered with the Omidyar network to extend Ilifa's capacity to generate and test innovations around early learning through the establishment of the Innovation Edge (the Edge). The systems for scale that are created through Ilifa's collaboration with government and civil society complements the Edge's flexibility and capacity to innovate within early learning, creating a dynamic force for change.
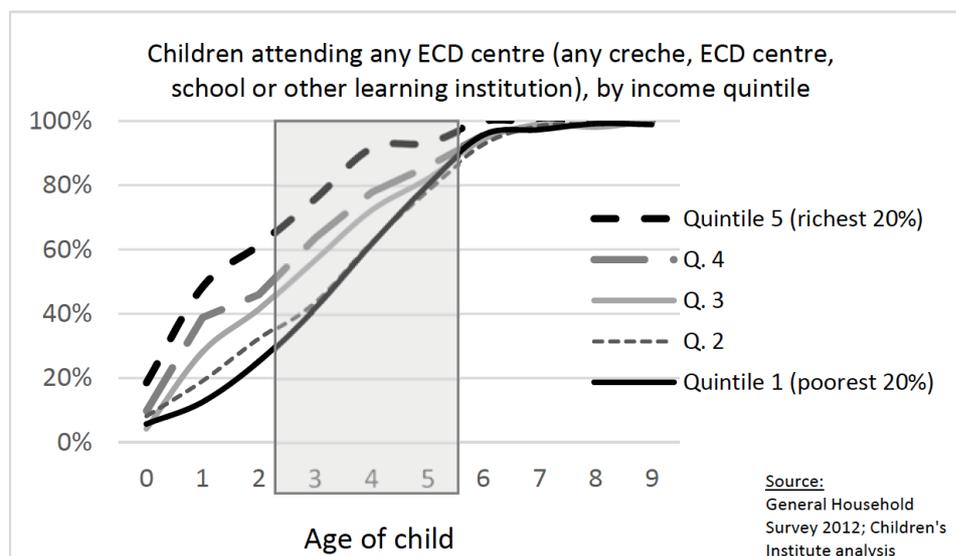
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THE NEED FOR INNOVATION TO SUPPORT EARLY LEARNING

The Innovation Edge is a social innovation fund established in July 2014 by a consortium of donors with a shared interest in transforming the early learning landscape in South Africa. The Edge supports new ways of thinking, ideas, processes, systems or products that have the potential to fundamentally shift the way in which we approach early learning in South Africa.

Early childhood – from conception to the age of 6 years - is a period of unparalleled opportunity for promoting human potential. Positive, supportive experiences that make a child feel safe and stimulated will lead to strong neural connections in the parts of the brain that support learning and healthy emotional growth. By providing appropriate early childhood development services, we can literally shape the architecture of the developing brain. In South Africa, 64% of the 6,5 million children under the age of six years live in the poorest 40% of households[1], experiencing multiple associated deprivations including deprivation of early care and stimulation.

Inequality in access to learning opportunities in South Africa exists across ages and income levels, marginalizing the youngest and poorest children. While 80% of 3-4 year olds in Quintile 5 have access to ECD centres, only 40% of their peers in Quintiles 1 and 2 enjoy this same right[2]. Service quality also varies dramatically across quintile levels, and most ECD centres in poor communities do not meet Government stipulated minimum norms and standards.

Children attending any ECD centre (any creche, ECD centre, school or other learning institution), by income quintile

Source: General Household Survey 2012; Children's Institute analysis

Government investment per child in primary education (children 6 years +) is more than 3 times the amount invested per child in early learning. This inequity is compounded by the fact that while all children over 6 years have access to state funded primary education in South Africa, the early learning subsidy is only accessible to around 15% of the under six population.

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[1] Statistics South Africa: General Household Survey (2012). Data analysed by Children's Institute, University of Cape Town. (also see www.childrencount.ci.org.za for more indicators)
[2] ibid

If we are to transform the early learning experiences of children living on the margins of South Africa's society, we need to change the way we think. As Einstein put it: "The significant problems we face cannot be solved at the same level of thinking we were at when we created them."

To profoundly change the early learning status quo in South Africa, we need new products, services and delivery models for early learning, we need to increase the range of stakeholders engaged in promoting early learning, we need to radically transform mindsets and paradigms in support of early learning, we need to strengthen the pipeline of suitably qualified human resources and we need to open up additional funding streams. We need to challenge the social dynamics that allow for the status quo to persist. This is social innovation.

The term Innovation is often associated with ideas that are transformative - disruptive breakthroughs that change society and that are so big and powerful that others continue to build on it for generations to come. But the reality is that transformative innovation is rare and while it can radically shake up the status quo, it is by no means the only approach to change. In most instances, ideas on the innovation spectrum are more evolutionary than revolutionary. Evolutionary innovation tends to be incremental in nature, gradually changing products, processes or systems in a migration towards enhancement. Both are necessary in South Africa to create positive and lasting change in the learning opportunities for young children.

The Innovation Edge supports the development, implementation and evaluation of both revolutionary and evolutionary approaches to innovation, to harness the incredible potential for human development that lies in that period between conception and six.

KEY CHARACTERISTICS OF AN INNOVATION PLATFORM

The Edge is committed to creating an environment in which innovation flourishes and offers a platform that includes -

- Support for ideas at any point along the innovation pathway, from recognition of a problem, to invention, development and implementation.
- A continuum of support for innovators across the life stages of the startup, recognizing that different levels and types of support are needed at each stage
- Knowledge exchange and support for innovators to build new partnerships with stakeholders who add value, including civil society organizations, public sector, academia and private companies. An integral element of an enabling ecosystem for innovation is the ability of people to connect.
- Funding of up to R1 000 000 each to selected innovation partners (over a period of up to 24 months) plus additional support for project evaluation.
- Opportunities for both successes and failures to be embraced in recognition of the fact that innovation demands an appetite for risk which always entails some measure of failure
- Enabling the lessons from grant funded projects and from analysis of innovation processes to be widely disseminated, as and when lessons are learnt.
- Connecting successful implementing partners with social investors and other interested parties who are in a position to support or facilitate scale-up. This includes linkages to diversified funding possibilities such as public contracts through procurement, social investment funds, social impact bonds, venture philanthropy financing schemes and crowd funding.
- Bringing together thinkers and innovators with diverse interests and expertise to contribute to the development of innovations in early learning.

SOURCING INNOVATION

Importantly, innovation for social good is not exclusively the domain of the social sector. It can and should take place in the private, non-profit and government sectors, and very often the most innovative ideas happen in the spaces between these three sectors, as different perspectives collide to spark new ways of thinking. The challenge rests in the fact that these sectors talk to each other infrequently and connect for the purpose of innovation rarely. In a context where sectors typically operate in silos, the Innovation Edge creates opportunities for individuals and organisations with diverse interests and expertise to connect. Over the past year experience has taught us again and again that diversity drives innovation more effectively than anything else.

Our approach is to bring together unlike minds with the specific purpose of brainstorming solutions for early learning and forming long-term beneficial partnerships. We have found success in pitching dens, Potluck Sessions, technology hackathons and our web-based innovation exchange platform which allows ideas to be shared and discussed online and encourages unusual partnerships amongst applicants.

In addition to these group-based approaches to connecting, the Innovation Edge increasingly bridges different spaces and is therefore able to foster connections between individuals who might otherwise never have met. In some instances, simply making these connections has been sufficient to spark innovation independently of our active involvement.

A parallel open and ongoing call for expressions of interest is widely marketed through radio and print media, social media, our e-newsletter and website. We also seek out ideas through analysis of private sector business models and supply chains, understanding positive deviance in the early learning and parenting space, and through scanning entries submitted to other relevant local and international competitions.

Experience so far suggests that the combination of broad-based exposure together with actively promoting 'connections' is critical for innovation in this space. Our application processes have therefore been designed to reframe early learning in a way that attracts interest from a broader range of stakeholders, to market our call beyond "the usual suspects", to promote diversity of collaborative agents and to ensure a low as possible barrier to entry for first stage applications.

OUR PORTFOLIO OF PROJECTS

In the first year of operations, the Innovation Edge built up a portfolio of 13 projects, with proof-of-concept work currently underway in six of the nine provinces in South Africa. The table below clusters projects around key priority areas.

Priority areas for innovation	Projects currently underway
Sustainable early learning delivery models that can deliver quality and scale	Decentralised applications (Dapps) to digitally enable early childhood development programmes at scale
Innovative financing or co-financing models focused on quality and efficiency	Development and testing of a social impact bond as an innovative financing mechanism for increasing investment in ECD
	Decentralised applications (Dapps) for renewable energy independent power producers

Technology in engaging parents and practitioners	The use of mobile phones to deliver co-ordinated daily messages and content to ECD practitioners, parents and care givers to promote early learning in centre and home settings.
Pedagogic innovations	Computer gaming as a way to address the special learning needs of children with neurological damage
	An simple, standardized assessment tool that will enable evaluations of early learning programmes for children prior to Grade R (reception year)
Innovation for improved systems efficiency	Decentralised applications to support improved ECD registration processes
	Mobile applications to improve efficiency and accuracy of child attendance and claims processes
	Factory-style workflow boards to address ECD registration systems constraints
	Crowdsourcing as a means of identifying and verifying the existence of ECD services across the country.
Early learning communications innovation	The development of easy-to-understand metaphors on the structure and function of brain development to inform a human-centred approach to behavior change.
	Sifunda Ngokuthetha – a project aimed at transforming every day waiting places into engaging space. These waiting places include clinics, public transport hubs, supermarkets and grant access points.
	Adapting commercial models for collective savings and purchases (co-operatives and stokvels) to achieve ECD goals

Selected projects are described briefly below. More information on all of our projects is available on our project blogs www.innovationedge.org.za

1. Computer gaming to remediate Foetal Alcohol Spectrum Disorder (FASD)

South Africa has the highest reported prevalence of Foetal Alcohol Spectrum Disorder (FASD) in the world. FASD is caused when mothers drink during pregnancy and is more common than Down Syndrome, Spina Bifida and Autism combined. FASD is associated with growth deficits, birth defects and neurological damage and children with FASD typically struggle with attention, working memory and executive functioning. While the damage caused is permanent, the neurological deficits can be improved through interventions due to plasticity of the developing brain. Unfortunately, in South Africa's resource poor communities little is available in terms of interventions to address neurological deficits in children with FASD.

Inspired by the idea of "playful learning" -- where games are used to teach skills usually taught in more formal ways -- and research into neurodevelopmental assessments for FASD diagnosis, this project involves developing a computer game for children with FASD. The game will improve cognitive functioning for children with FASD and reduce the incidence of secondary disabilities, such as poor educational outcomes and poor mental health outcomes in a way that is free and scalable.

2. Mobile phone crowdsourcing to identify and verify ECD services

State funding and support for early learning is not reaching those who need it most because information on ECD centres in the most marginalized communities is not accessible to the Department of Social Development and other potential supporters. It is estimated that as many as 50% of ECD sites that exist in South Africa are unregistered.

This project is testing the use of crowdsourcing through mobile technology to ensure that all ECD centres are mapped as the first step to registration with the Department of Social Development and potential funding. The term crowdsourcing was coined in 2005, and refers to the process of obtaining information on services or events by inviting contributions from members of the public. Crowdsourcing has been successfully used to gather information from the public in a number of fields, including astronomy, journalism and ornithology. This innovation applies crowdsourcing to early learning.

The project aims to find an efficient and viable way of using crowdsourcing to identify ECD centres, particularly those serving the most marginalized communities. Multiple different sources of the same information will assist us with verification. Potential participants learn about the initiative through community radio advertisements, printed posters and word of mouth.

3. Decentralised applications (Dapps) to digitally enable early childhood development programmes at scale

Delivering ECD services at scale is enormously challenging since most ECD programmes tend to be fragmented, top-down, inefficient and costly to administer. Better mechanisms are needed to systematically scale up interventions and early childhood development services that work, particularly in poor communities.

This project involves the development of mobile technology that has the potential to digitize and improve ECD service administration, management and delivery. This mobile technology is based on blockchain technology, which underpins crypto-currencies, such as Bitcoin.

This work is inspired by seeing the value of data in increasing transparency in the aid sector, and the study of social physics, which shows how incentives and information flowing through connected networks of people generates powerful social learning and social change.

Products currently under development using DApps include:
- Id-io.org - an open-source and freely available platform for use by developers and the development community which offers social benefit organisations a much more effective mechanism to create and manage trustworthy registries of their agents and beneficiaries
- The Decentralised Application Interface designs and deploys Smart Agreements for ECD, using mobile devices. The application enables ECD providers to code their 'business rules' in such a way that processes - such as registration, incentives, monitoring, payments - can be automated.
- An innovative digital voucher mechanism to increase funding channeled into ECD through the Renewable Energy Independent Power Producer Programme (REIPPP) in South Africa
- Decentralised Application to improve efficiencies in the state system for monitoring pre-school attendance and automating government subsidy claims for early learning

4. Development of an early learning outcomes measure (ELOM)

Research indicates that while children from better off homes make good progress following Grade R, a soon to be compulsory preschool grade, the poor do not and the gap between the two widens with age. Quality preschool programmes enable poor children to be ready to benefit from Grade R. However, South Africa currently lacks a reliable and valid instrument to assess how early learning programmes perform in preparing children for this level of education.

This project team is developing an assessment tool that will enable evaluations of early learning programmes for children prior to Grade R. The tool is the first of its kind in South Africa. It can be administered by trained preschool teachers and the assessment takes roughly 40 minutes. It is not a school readiness test but rather provides a measure of the extent to which populations of children, aged between 54 to 66 months, at the period of transition to Grade R achieve expected standards of knowledge and performance before starting Grade R. The developmental domains the tool will cover include: Physical Development and Self Care; Social and Emotional Development; Approaches to Learning; Language and Literacy; Cognition; and emerging Mathematics.

5. Development of a Social Impact Bond for ECD in South Africa

This project aims to establish a Social Impact Bond for ECD in South Africa and to implement a cost-effective measurement and evaluation system against which delivery models are evaluated for their effectiveness, allowing government and service providers to understand whether outcomes are achieved and the true costs of delivering impact.

The idea for introducing impact bonds in South Africa is supported by the use of social impact bonds globally, most of which are in operation in the UK and USA. Impact bonds aim to improve the effectiveness of social interventions, including targeting health in pregnancy and proper nutrition, setting-up regular growth monitoring and immunization, improving the parenting skills of caregivers and quality of pre-school education. They do so through establishing an outcomes-based contract where private investment is used to scale up interventions, especially early intervention and preventative services, implemented by specialised service providers. These private investors then receive repayments from an outcomes funder – usually a government or donor – only if independently verified evidence shows that the intervention has been successful in delivering the pre-agreed outcomes. Impact bonds can assist governments and donors in risk-free or risk-mitigated exploration and expansion of effective early intervention and preventative programmes.

6. Sifunda ngokuthetha – language in the supermarket and clinic

This project aims to introduce a low-cost, sustainable, scalable intervention that promotes brain-building, bonding and language-building interactions between caregivers and children in everyday environments, starting with supermarkets and clinics.

Strong language and communication skills are essential for children. Children who develop strong language and communication skills are more likely to start school ready to learn and to have higher levels of achievement in school. When caregivers talk with children it expands their vocabulary and gives them an idea of how to use certain words. Caregivers in high poverty and high stress environments are less likely to engage in the types of interactions that promote this type of language development.

Inspired by a study by U.S. researchers, which shows that signs placed in supermarkets serving low-income populations have a significant impact on adult-child conversations, the project team has developed a low-cost, scalable intervention to get caregivers and children talking. With the help of an award-winning illustrator, the project team has designed a set of eye-catching signs that prompt caregivers to ask their children questions in different sections of the supermarket.

The open-ended nature of the questions encourages a back-and-forth dialogue between caregivers and children. Signage will change regularly to prompt fresh engagement across repeated visits. Signs will also be designed and placed at health clinics, effectively turning 'everyday places' into 'engaging spaces.'

7. Ukonga - stokvels for ECD

South Africans have a long history of participating in stokvels (shared savings clubs) and there are over 800,000 in the country with approximately 11.4 million members. Stokvels are prime places to engage caregivers about ECD, providing a valuable existing social capital platform. Various commercial models have been successfully used to leverage stokvels. Brand ambassadors use them to develop brand loyalty by providing product demonstrations and information at monthly meetings, for example. This model can be adapted to communicate ECD messaging and offer practical information to caregivers.

The aim is to use the stokvel network to empower caregivers to understand and act on the importance of early stimulation so that they support their children's early learning and consistently access early learning services.

The project team will train and deploy community-based ECD 'Champions' to champion ECD at regular savings group meetings. Their monthly inputs will be designed around the concept of 'just one thing' to do with your child this month, and will demonstrate the importance of early stimulation and be accompanied by simple practical resources that can be used in the home. The project pilot will create five monthly inputs delivered to 720 primary caregivers at 48 savings groups in the Eastern Cape and Gauteng, allowing for comparison across different urban and rural contexts.

8. Factory workflow boards to improve ECD systems efficiency

All ± 40,000 ECD centres in South Africa must be registered with the Department of Social Development (DSD) to ensure that young children get the necessary care, protection and stimulation and so that these centres can access government funding. The current registration system is inefficient and unable to address the backlog in registration, or keep up with increasing demand. Key challenges in the registration system include challenges related to planning, procurement, technology, infrastructure, human resources, budgeting, information management and operations. There is evidently a need to make the registration system more efficient.

Workflow boards offer a simple way to identify blockages in a system. The team was inspired by how workflow boards are used in the private sector to improve efficiency. By breaking the DSD's registration process for ECD centres down into individual steps, and assessing how far along the registration process individual centres are, the project team can discover where the main challenges for registering ECD centres lie. Following the successful implementation of workflow boards in two local municipalities in South Africa, the project has secured the necessary funding and government buy-in to expand to 28 local municipalities over the next 12 months.

KEY RECOMMENDATIONS

The post-2015 draft Sustainable Development Goals include reference to early childhood development programs and policies, extending these beyond infant and maternal mortality for the first time to include early learning. Reaching this goal and achieving quality early learning at scale is a challenge that requires us to think differently, to emulate the culture of innovation that has fuelled rapid advancements in so many other sectors.

We have to change the way in which we think about and approach early learning, in order to ensure that all children are afforded the opportunity to become active participants and contributors in a rapidly evolving Global environment.

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Sonja Giese leads Ilifa Labantwana, a national ECD donor collaborative that supports the scale-up of quality early childhood development in South Africa. She is also director of the Innovation Edge, a multi-donor initiative aimed at promoting innovation in early learning in South Africa. The Edge offers a platform for testing the feasibility and effectiveness of Bold Ideas that can fundamentally change early life experiences for children. Over the past 20 years, Sonja has been involved in a number of start-up ventures in the development space, including the establishment of an HIV/AIDS research and policy programme at the Children's Institute (University of Cape Town), a Child Services programme for an international donor agency, Absolute Return for Kids (ARK) and several community-based rural development projects through a local NGO, the Bulungula Incubator. Immediately prior to taking on the Directorship of the Innovation Edge, Sonja spent 9 years consulting on a range of child-rights issues and promoting the development of systems necessary to enable service delivery at scale. Sonja has a Bachelor of Science and Honours degree from the University of Cape Town and currently lives in Cape Town, South Africa.