

# PIONEERS

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# 13

GROUNDBREAKING  
EDTECH COMPANIES

EDITION 6

# Foreword

## TACKLING THE LEARNING CRISIS HEAD-ON

Navigating beyond blackouts to confront the looming educational challenge.

By David Maynier, Western Cape Minister of Education.

While rolling blackouts may grab the spotlight, a deeper, more insidious menace lurks beneath the surface – a full-scale learning crisis, born from the upheaval of the Covid-19 pandemic, prolonged school closures, and disrupted school timetables. This threat jeopardises the very bedrock of our future.

While the pandemic itself may be receding, its aftershocks continue to reverberate through our education system. It's a crisis we can't afford to ignore, and it demands our full attention and relentless commitment to rectify. In this critical moment, the keys to our country's future lie in the strength and resilience of our education system, one that must be closely allied with the private sector and strategically augmented with EdTech innovations to reverse learning losses.

In the Western Cape, we are not merely paying lip service to change. We are cementing successful interventions, such as the proven eLearning platforms like the Maths Curriculum Online programme in the Foundation Phase. We are also embracing novel methods of teaching and learning, stepping boldly into the future.

We recognised the urgent need to allocate an additional two hours per week for reading within the school day during the 3rd and 4th terms of 2022. Today, that extra time has become more than a provincial initiative; it's setting the example for schools across the nation.

**But let's be clear: our educational challenges do not end at literacy.**

We face a numeracy crisis of monumental proportions, one exacerbated by the pandemic's disruptive wrath and the associated school closures. With learners losing 155 school days in 2020 and 2021, equivalent to three-quarters of a school year, it's no surprise that researchers estimate most learners now lag behind by a full year in their educational journey. This worrisome trend is compounded by the fact that, even before the pandemic's arrival, South Africa languished near the bottom of international rankings in maths and reading proficiency.

**We can, and must, do better.**

As the sole province conducting annual systemic testing, we can paint a vivid picture of the devastating toll that the pandemic has exacted on our educational landscape. Hard-won gains in Language and Maths scores over the past decade have been



reversed, leaving no room for complacency. The litmus test of quality education is one we currently fail when too many of our Grade 3, 6, and 9 learners struggle to achieve basic pass scores in Maths and Reading.

The urgency to reverse this downward spiral drove our commitment to invest a staggering R1.2 billion in our #BackOnTrack programme – the largest effort of its kind to redress learning losses in the country. This initiative fortifies the Foundation Phase with extra resources and training, extends a lifeline through additional classes for Grade 4, 7, 8, 10, and 12 students, and equips teachers in these pivotal grades with the skills needed to turn the tide.

Our term-time Saturday classes drew 15,000 eager learners, while holiday sessions welcomed over 23,000 students. With over 5,500 teachers embracing additional training, their strong desire for positive change is clear.

The learning losses brought about by the pandemic pose a significant risk of hindering an entire generation's potential for years to come. Our commitment to reinvigorate education couldn't be more crucial.

Now, a burning question demands our immediate attention: Why does South Africa's relatively high investment in education fail to yield equivalent educational achievements?

This perplexing issue keeps us up at night, which is precisely why we have enlisted the World Bank to conduct an in-depth Education Sector Analysis. This is a critical step toward establishing long-term priorities aimed at enhancing educational outcomes. The stakes have never been higher, as our present actions will shape the destinies of generations yet to come.

This edition of *Pioneers* highlights some of the major EdTech solutions that play a pivotal role in our pursuit of a world-class education system. The Western Cape stands as a vibrant hub for digital skills academies and EdTech companies creating content for global educational institutions. We are uncovering truly world-class solutions that have the potential to accelerate our journey towards a brighter educational future.

The foundation for our economic prosperity is firmly established within the classrooms of today. South Africa's growth, its social fabric, and its very identity rely heavily on the strength of the education system. This system will shape the future leaders, innovators, and thinkers who will steer our progress and enhance our overall well-being.

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This issue's editorial writer is Bekezela Phakathi  
(Bekezela@wesgro.co.za)

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*Edu Invest is a dynamic public private collaboration powered by Wesgro, seeking to drive investment into the education sector. The project convenes key role players, and ensures that the Western Cape takes its place as an education innovation hub on the continent.*



**Want to find out more?**  
Contact Wesgro's Chief Marketing  
and Innovation Officer: [jean@wesgro.co.za](mailto:jean@wesgro.co.za)

## LEADERSHIP TODAY SHAPES FUTURE PROSPERITY

From Classrooms to Boardrooms: The Power of Education Innovation and Private Investment.

By Wrenelle Stander, Wesgro CEO

- **Investment in Innovation:** SA's education sector receives substantial funding, but persistent challenges require a fresh approach that embraces innovation as a catalyst for change.
- **Public-Private Partnerships (PPPs):** Through a collaborative approach which leverages resources and expertise from the public and private sectors, we can construct and modernise schools, offer teacher training, and innovate in education. This approach is instrumental in closing educational gaps.
- **Reimagining Education:** It's time to tailor the curriculum to meet the demands of a rapidly changing job market

Despite substantial investments, the state of education in SA continues to be a cause for concern. To provide some context, around 6% of the national budget, which amounted to a total of R4.60-trillion in 2022, is allocated to education each year. What's striking is that the International Monetary Fund (IMF) has noted that many sub-Saharan African countries spend much less per student compared to SA yet manage to achieve significantly better educational outcomes. Even more interestingly, SA's level of investment in education is on par with the commitments of several affluent countries in the Organisation for Economic Cooperation and Development (OECD) community.

Unequal access to quality education, a shortage of qualified teachers, the absence of a systematic method for assessing teacher performance, and alarmingly high dropout rates continue to persist, casting a shadow over our educational performance. Learning setbacks have been further worsened by the pandemic.

Currently, over 60% of our youth lack meaningful employment, while a scarcity of critical skills stifles economic growth. It's a double whammy. Our education system isn't aligning with the economy's needs, leading to a significant labour supply-demand mismatch – a crisis we can't afford, especially with our top talent being lured away by major economies.

Education is the bedrock upon which any thriving economy is built and is essential for both economic prosperity and social well-being. Without a well-educated and skilled

workforce, achieving economic development remains a distant aspiration. A competitive economy drives income growth and overall well-being. We are in a fierce race globally for new markets, investment, skills, and tech, and right now, we are lagging. To thrive on the world stage, we require a fresh growth narrative, with education at its heart.

### Learning from the rest of the world

Take Rwanda, for instance. It has transformed itself from conflict to success by investing in infrastructure and education. Their goal is digital literacy for all by 2035 and becoming a high-income nation by 2050, emphasising a competency-based curriculum focused on creativity and practical skills for the global job market. Kenya too is committed to becoming a newly industrialised nation by 2030 and acknowledges that quality education is vital to achieving this vision. Kenya has made impressive progress, including a 70% reduction in the cost of textbooks, the equal enrolment of girls and boys at the primary level, the training of 102,000 teachers to enhance maths instruction, leading to improved student competency in the subject. Furthermore, the country now utilises real-time data, which enables the government to monitor indicators transparently and reliably like attendance, enrolment, and staffing. Finland's progressive education system prioritises creativity, critical thinking, and problem-solving over rote memorisation. Students work on real-world problems, enhancing skills like teamwork, research, and problem-solving. Sweden for example has become a tech powerhouse to rival Silicon Valley. With an entrepreneurial culture born from a healthy stream of



government investment into infrastructure and education. Sweden's "crown" as an incubator for global market leaders is set to continue.

What's our next step? What can we do to make our education system in SA more effective and efficient, while ensuring that we receive the best possible return on our investment?

### Reimagining Education

The answer lies in reimagining the core of education itself. It's time to leap ahead and fully embrace innovative approaches. Education innovation should be woven throughout the entire education process. This means embracing and adopting smart, fresh methods, harnessing cutting-edge technology, updating curricula, offering essential teacher training, and fundamentally transforming our perception of education. It's about revolutionising the way we think about learning. Let's roll up our sleeves and get involved in reshaping the education scene. We have the power to lead the charge in redefining how we educate the next generation. For businesses, it's not just a strategic manoeuvre; it's an investment in the young talents who will be the architects of our economic future.

### Strong Leadership

We need strong leadership from both the public and private sectors, involving everyone, including academia. This leadership shouldn't be confined to the government alone. Business and academic leaders should team up, share their visions for the future, and collaborate to achieve common goals. It's about working together and striving for shared objectives.

Let's rethink and put our resources into every part of the education process.

We can do this by improving teacher training, matching our curricula with what industries need, making vocational training and apprenticeships stronger, and ensuring that everyone has access to digital resources. By doing all this, we can create an education system that not only meets the needs of the economy but also supports the well-being of our society.

### Future Skills

We need to concentrate on developing the skills needed for the future job market. The World Economic Forum has pinpointed skills crucial for the future:

- Creativity, the ability to solve meaningful problems in new ways and to think imaginatively across disciplines.
- Digital skills, the ability to master new forms of digital tech, especially algorithm design and data handling.
- Collaboration, the ability to work with others to perform complex tasks.
- Global citizenship, a universal respect for other people and their cultures, embracing diversity and inclusion, understanding the finiteness of the natural ecosystem and how we can interact with it in sustainable ways.

### Adapt to a changing world of work.

We also need to adapt to the changing world of work. The work landscape is evolving rapidly, and entrepreneurship is taking centre stage as a catalyst for growth. It's important to note that in the current era, governments and large corporations are no longer the primary sources of job creation, as they were in the past century. So, adapting to this changing world of work and nurturing entrepreneurial skills is crucial. Across the globe, an increasing number of individuals are finding it necessary to create their own employment opportunities rather than seeking existing jobs.

Over the last decade, most OECD countries have recognised the importance of fostering entrepreneurship skills throughout the education system. Denmark, for instance, actively promotes the integration of innovation and entrepreneurship into the core curriculum, along with expanding hands-on teaching practices in schools and introducing innovation courses in teacher training programmes. Other countries such as Finland, Portugal, and Sweden have taken steps to incorporate entrepreneurship education into the primary and secondary school curricula. Meanwhile, Australia and Ireland are encouraging the integration of information and communication technologies into the educational landscape.

### Summing up

To sum it up, our competitors are seizing opportunities, and we must too. We must step up our game, as the world won't wait for us. This is especially crucial if we aim to pave a brighter future for our youth.

As Nobel laureate Paul Romer wisely pointed out: *"If you can't solve the problem of getting the majority of young people into work, it may not matter what other problems you solve."* This statement resonates powerfully in today's context.

# EMPOWERING SOUTH AFRICAN STUDENTS FOR THE DIGITAL AGE: THE CODE4KIDS MISSION

By training teachers to teach real coding, robotics, and IT, Code4Kids ensures that students gain tangible skills for the future.

In a constantly evolving world shaped by technology and innovation, the value of robust technical education is crystal clear. Yet traditional education systems often struggle to keep up with the pace of change. This is where Code4Kids shines, reshaping the way young South African students learn coding, robotics, and IT.

Imagine a classroom where young minds aren't just learning facts, but solving problems, nurturing logical thinking, and becoming creators of technology rather than just consumers. That's the core philosophy of Code4Kids. More than just another curriculum, it's a journey that equips both educators and students to navigate the digital age with confidence.

"The world around us changes so rapidly," says Matthew Henshall, the founder of Code4Kids. "Yet educational curricula remain stagnant for years. We are getting left behind." Code4Kids aims to bridge the gap between the dynamic world and the classroom, thus tackling the skills deficit plaguing SA's economy. The urgency to bridge this divide is particularly pressing in SA, where challenges like access to technology and connectivity compound the issue.

Henshall, an electro-mechanical engineer turned serial entrepreneur, recalls the spark that ignited the Code4Kids journey in 2015. "It all started with a simple goal – teaching my young niece how to code," he reminisces. Little did he know that this endeavour would unravel a stark contrast between classroom teachings and real-world requirements. "By the time she was ten years old, she could pass an entrance exam

as a junior software engineer that required a four-year computer science degree," Henshall reveals. This realisation ignited a passion to reshape the educational landscape.

## Teachers at the core

Fast forward to 2017, and Code4Kids found its humble beginnings at Rustenberg School in Cape Town. The goal was clear: enable teachers to infuse coding, robotics, and IT education into the curriculum. Henshall observed that this transformative process began not with students, but with teachers. "The absolute importance of the teacher" emerged as a core principle, laying the foundation for what Code4Kids would become.

Code4Kids bridges the gap between introductory game-based coding platforms like Scratch and the realm of professional software development. From building websites with HTML, CSS, and JavaScript to writing Python, students transition seamlessly into real-world coding scenarios.

By training teachers to teach real coding, robotics, and IT, Code4Kids ensures that students gain tangible skills for the future. "While many schools might have computers and internet access, the challenge lies in teaching the right things," Henshall states.

In a landscape defined by rapid change, Code4Kids is positioning South African students not as bystanders but as active participants in the digital transformation process.

One might wonder, why the urgency for coding skills. Henshall breaks it down succinctly, underlining the critical connection between coding and problem-solving skills in future job markets, shaped by rapid changes. "The reality is the world around us is changing too rapidly," he says. While new technologies like ChatGPT and Threads are reshaping industries at lightning speed, educational curricula have struggled to keep pace. Henshall underscores the point:

## TABLE MOUNTAIN, CAPE TOWN, SOUTH AFRICA



Learn more about  
**Code4Kids'** story on  
the Pioneers Podcast.

"The last time the CAPS curriculum was changed was in 2011. The last time the UK curriculum was changed was in 2014." The result? A gaping chasm between classroom teachings and real-world demands.

### Tangible skills

Code4Kids isn't just a South African solution; it's a global imperative. Henshall emphasises: "The skills shortage isn't limited to SA; it's a global concern." Code4Kids has thus transcended boundaries, reaching across continents to create an impact. With a presence in New Zealand, the UK, and beyond, its influence knows no bounds.

However, against the backdrop of SA's specific challenges, Code4Kids shines as a symbol of optimism in the country. It offers a solution that can thrive in any environment equipped with basic computers or tablets, an internet connection, and a motivated teacher.

*The urgency to bridge this divide is particularly pressing in SA, where challenges like access to technology and connectivity compound the issue.*

Central to Code4Kids' triumph is its steadfast dedication to core values. Unlike transient game-based coding encounters, Code4Kids is rooted in genuine software development. "We approach the teacher at grade 4 or 5 and say, 'We're going to teach you to teach real coding to bridge the gap,'" Henshall explains.

This philosophy ensures that students don't just dabble; they delve deep into coding, establishing skills that are as versatile as they are impactful.

Still, Henshall's insight pinpoints the education sector's major hurdle: teacher training and responsibility. He advocates for the growth of colleges and the cultivation of excitement among teachers about their potential in this tech-driven world. Additionally, he calls for the integration of technology to alleviate the administrative burden on teachers, unleashing their true teaching potential.

As SA navigates education in the digital age, Henshall's call for a curriculum shift from prescriptive to outcome-based resonates deeply. "We tend to worry more about the input than the output," he observes, shedding light on the need to focus on tangible skills rather than merely ticking boxes.

# CONSTRUCT EDUCATION'S RECIPE FOR ONLINE LEARNING SUCCESS



Crafting engaging, real-world learning experiences; and why mentorship matters in boosting student success.

**Online learning is game-altering**, but it often comes along with solitude. That's where mentorship steps in as an absolute must.

Meg Knight, the Chief Operating Officer of Construct, a global leader in learning solutions and instructional design, stresses the pivotal importance of strong student support. She highlights the necessity of mentors or coaches, particularly for online students, to substantially enhance retention rates.

"It's not just about putting courses online; it's about creating an environment where every learner feels supported, included, and motivated," Knight passionately states. Online learning provides incredible accessibility, but it can be a lonely journey. That's why having a lifeline to call when things get tough is invaluable.

This holds immense significance, considering SA's distinct challenges. The educational landscape in the country is unparalleled, with students grappling with obstacles that extend beyond conventional classroom limitations. Daily struggles encompass data limitations and frequent power disruptions. In this setting, a robust support system becomes an anchor.

In 2020, amidst the chaos of the Covid-19 pandemic, which propelled the surge of online education, the Organisation for Economic Co-operation and Development (OECD) - a coalition of 38 nations shaping economic and social policies - dropped a crucial report. They made it clear: merely granting access to digital tech or using online tools won't magically improve academic outcomes. To hit the mark, pedagogical methods must align with students' needs, existing skills, and digital literacy. The OECD stressed the vital role of teachers as mentors, guiding students to stay laser-focused on the learning aspects of their tasks.

## **Static content on a screen won't cut it anymore**

Construct serves top-tier institutions and organisations like Oxford, Cambridge, and VVOB South Africa, but here is the kicker: their core design team is right in Cape Town. This mix of worldwide know-how and local insight drives their mission for accessible, supportive learning.

Construct's approach is tailored and engaging. They scout for experts in various fields, even those new to online education, and harness technology to craft stimulating and impactful learning journeys. As Knight puts it: "We are learning design experts, so we know how to make content engaging, memorable, and career focused."

The key? Real-world, hands-on applications and examples. Technology is the magic ingredient that lets institutions expand their reach. Knight's take? To stay in the game, higher education institutions must offer online programmes that



go beyond the traditional classroom approach delivered through video calls.

“Simply putting static or video content on a screen won’t cut it anymore,” she states, emphasising the need for practical, time-efficient, and resource-effective learning experiences.

Construct’s overarching goal is to make quality education accessible globally while enhancing the sustainability of educational institutions. Knight breaks it down: “Using technology intelligently allows institutions to reach a wider audience worldwide, making their business models more effective and sustainable.” While about 60% of their work focuses on American clients, they are also lending their expertise to clients in the Middle East, Europe, Australia, and New Zealand.

#### The future of online learning

Gazing into the crystal ball of online learning, Knight predicts a shift away

from traditional brick-and-mortar education, driven by cost considerations and the need for flexibility. “Many students need to work while studying, and online education offers affordability and accessibility for non-traditional learners,” she says.

*“We are learning design experts, so we know how to make content engaging, memorable, and career focused.”*

“The days of being on campus only are numbered,” Knight emphasises, highlighting that the focus of the modern professional world is shifting from obtaining a degree to acquiring

shorter, stackable credentials. Online education is becoming more relevant than ever, aligning with the needs of today’s learners.

Looking ahead, Construct has its sights set on more opportunities in SA. Having worked with organisations like USAF HELM, CapaCiTi, and Allan Gray Makers, they are eager to partner with more institutions, including those in the primary and high school sectors.

“We want to adapt our global experience to the South African context, acknowledging the unique challenges our learners face, such as data issues and load shedding,” Knight says, adding that understanding such challenges informs an effective design process. With a team of 150 people in Cape Town who have deep roots in the community, Knight believes Construct is uniquely positioned to cater to the needs of South African learners.



Learn more about **Construct Education's** story on the Pioneers Podcast.

# TRANSFORMING AND EMPOWERING SCHOOLS FOR A BRIGHTER FUTURE

Its strategic approach allows teachers to focus on what they do best - teaching without being bogged down by administrative burdens.

**Drawing inspiration from thinking outside** the box and the six D's of disruption, d6, a local ed-tech firm is leaving an indelible mark on school management.

With over 80 dedicated staff members and offices in Stellenbosch, Pretoria, KwaZulu-Natal and the Netherlands, the company is on a drive to enhance educational outcomes by harnessing the power of technology. Its mission centres on creating meaningful connections between schools, teachers, and parents, forging a cohesive ecosystem that optimises overall school management and parent involvement.

d6's central platform enhances overall school management while streamlining communication between schools and parents. This strategic approach allows teachers to focus on what they do best - teaching without being bogged down by administrative burdens.

"We believe that a well-managed school is fundamental to a thriving and healthy learning environment," says Willem Kitshoff, the CEO of d6.

Since 2009, d6 has rapidly expanded across the country, offering its cutting-edge solution nationwide and is also growing internationally. But this isn't just about technology. It's about taking charge of SA's educational future.

Despite substantial government spending on the sector, SA's education system has faced intense scrutiny in recent years, with increasing calls for greater private sector involvement to enhance educational outcomes. Efficient administration and governance serve as vital pillars for improving results.

Emphasising the significance of bolstering the education sector, the International Monetary Fund (IMF) has attributed SA's long-term low economic growth partly to poor education outcomes. A well-developed education system leads to a skilled workforce, increased human capital productivity, and higher economic output. Additionally, it drives innovation, generating new products, knowledge, and processes that fuel economic growth, as highlighted by the IMF.

#### Data-driven

Kitshoff underscores the critical role of technology in elevating school performance and education outcomes, thereby contributing to accelerated economic growth.

He says d6's integrated tech solution aims to eradicate the disparate systems currently in use. The platform puts all the essential information about learners at educators' fingertips. Accessing learners' academic records, absenteeism, and more is as simple as pressing a button.

d6 also knows what they are good at, and even more so what they are not. Hence the need for interoperability. The company recently introduced d6 Edulink, which allows seamless integration into the d6 management platform, making it possible for schools to access a broader basket of integrated solutions. This data-driven approach empowers tailored interventions to drive academic excellence. By building a solid management foundation with integration capabilities, d6 aims to catalyse academic excellence across the nation. The company's commitment to inclusivity is evident through



Learn more about  
**D6's** story on the  
Pioneers Podcast.

*"We believe that a well-managed school is fundamental to a thriving and healthy learning environment,"*

discounted rates for lower quintile schools, promoting equal opportunities for all learners.

"Our goal is not only to empower higher quintile schools, but also, and even more importantly, to serve masses because that's where the biggest challenge is." Kitshoff says.

He emphasises that parental involvement is key to a school's success. That's why d6's communication platforms, which now also incorporate artificial intelligence (AI), provide a robust user management, message building and analytical toolkit to gauge effectiveness. d6 already supports engagement with more than 2.5 million parents nationally.

### Impact

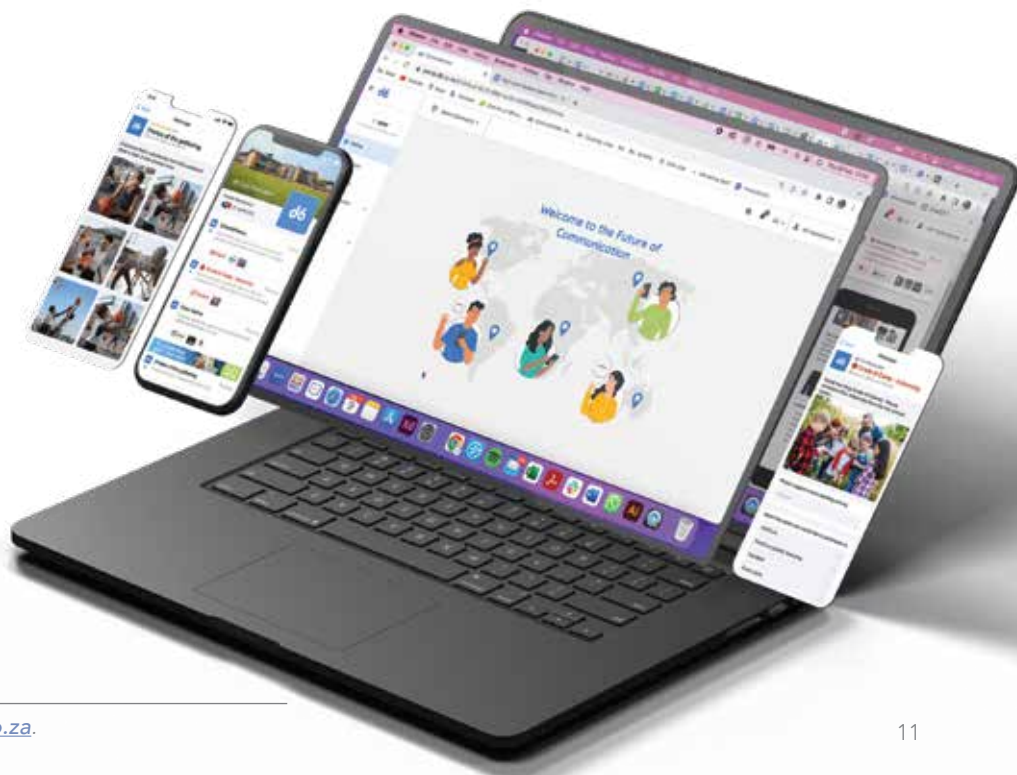
The impact is already evident, with over 2 500 schools in SA adopting d6's game-changing software. In addition, d6's ambitions don't end there—they have set their sights on emerging markets, already making waves in Namibia, Zimbabwe, Botswana, Kenya and UAE.

Kitshoff asserts that to uplift educational outcomes and address the skills deficit plaguing SA's economy, a united effort with a sharp focus on existing schools is imperative. That's precisely why d6 passionately champions the empowerment of these schools as a top priority.

The prevailing emphasis appears to be on the interaction between teachers and learners, with insufficient attention given to effective management, according to Kitshoff.

d6 firmly believes that at least 90% of schools in the country suffer from inadequate management, and rectifying this fundamental issue is paramount. Managing schools can be more intricate than handling typical small businesses, making technology a vital tool to enhance their operations and promote better educational outcomes.

Kitshoff underscores the critical role of a strong management structure, stating that even with an average product, a business can succeed with a proficient management team. However, a poor management structure can undermine even the best product. This emphasises the need for close collaboration between the public and private sectors to bolster school management and, by extension, improve education outcomes and the broader economy.





Green Shoots

# CULTIVATING GROWTH WITH GREEN SHOOTS

How Green Shoots is championing tailored tech solutions to boost maths education.

**Within the dynamic education landscape,** no single solution fits all challenges. However, one principle shines through - to achieve remarkable outcomes, tailor-made tech solutions are essential, all while keeping people at the core.

Jo Besford, co-founder and director of Green Shoots, an innovative ed-tech startup nestled in Cape Town's Helderberg region, highlights that to achieve results that truly hit the mark, tech solutions must have a personal touch. Placing people at the core of the equation, Besford asserts that true magic unfolds when technology aligns with individual needs, leading to exceptional outcomes.

Established in 2012, Green Shoots has embarked on a mission to elevate maths education outcomes by seamlessly integrating cutting-edge technology with steadfast support for users and stakeholders, including parents.

The Green Shoots team understands that maths isn't just another subject - it's a gateway to future success. Many high-demand careers require a strong foundation in pure maths, making it a critical pillar in economic growth and development.

What sets Green Shoots apart is their holistic approach, an intricate tapestry woven from curriculum enhancement, data analytics, professional development, IT support, and youth empowerment. By using technology as a conduit for student and teacher growth, they have carved somewhat of a distinctive niche in the ed-tech field.

## Real-time


At the heart of Green Shoots' arsenal is a set of maths exercises meticulously aligned with SA's curriculum for Grade 3 to 7 students. Regular standardised assessments provide real-time data that educators and school leaders can dissect at various levels, from the classroom to the province. Armed with this data, stakeholders can strategically allocate resources, enabling an informed, targeted approach to education.

The allure of instantaneous feedback is undeniable, as Besford confirms. She underscores how the Maths Curriculum Online (MCO) tool, a cloud-based, device-neutral system that aligns seamlessly with the curriculum, transforms the teaching landscape by evaluating students' work in real-time.

The detailed, learner-specific feedback arms teachers with insights into which aspects of a topic demand further attention. The result? A dynamic learning process that's tailored to the unique needs of each student. It's not just about what's being taught; it's about how it's being taught.

*Many high-demand careers require a strong foundation in pure maths, making it a critical pillar in economic growth and development.*

The MCO is the crown jewel of Green Shoots' toolkit. The Western Cape Education Department recognised Green Shoots' prowess, awarding them a tender to supply their online tool to 500 primary schools. The impact spans far and wide and transcends socio-economic boundaries - from traditional classrooms in urban areas to rural farm schools.

Learn more about **Green Shoots'** story on the **Pioneers Podcast**.

Besford, backed by co-founder Mark Swartz, fervently advocates for excellence in maths education. Both have been science and maths educators; they believe in addressing the root of the problem. "The struggle with maths often begins in primary school," Besford explains, leading Green Shoots to focus on Grades 3 to 7, with plans to extend into higher grades to ensure seamless transitions. As Besford firmly states: "A strong foundation in primary school sets the stage for success in high school."

**Breaking the cycle**

The perception that maths is insurmountable starts early, often leading to disinterest or even aversion. To break this cycle, quality maths education must be accessible to all, Swartz states.

"We have to break the cycle. Maths is a gateway subject, and it shouldn't be reserved for a select few," he says.

The goal is clear: quality learning should be accessible to all, irrespective of socio-economic status.

Swartz underlines the need to break the cycle of self-doubt that surrounds maths. "The 'maths isn't for me, it's too hard' perception is a barrier we must break. Everyone has the potential to embrace and excel in maths."

Green Shoots' objective is to offer technology as a supportive tool, enabling educators and learners to reshape maths education.

From a modest start with 16 schools in 2012, Green Shoots now empowers over 750 schools across SA, predominantly in the Western Cape. Their remarkable success is not rooted in marketing campaigns but in the effectiveness of their tools. The cost, at R55 per learner annually, is a testament to their commitment to affordability and accessibility.

Collaborating with organisations that share their vision, Green Shoots has supercharged their mission, magnifying the influence of their solution. Besford clarifies that Green Shoots actively ensures funding for schools in need, whether it stems from the education department, donors, or partners. The impact isn't just numerical - it's a shift in the narrative surrounding maths education.

Besford drives the point home that technology should bolster teachers, learners, and everyone in education, lightening the load to redefine how maths is perceived. "At the end of the day technology is the enabler, but it's the people who truly make the difference by genuinely enacting the transformation," she affirms.

# HOW GROUNDFLR IS UNLOCKING THE POTENTIAL OF ONLINE EDUCATION

In modern education, two crucial factors stand out as the pillars of meaningful change: quality and accessibility.

In a rapidly evolving world where acquiring future-relevant and valuable skills is paramount, the surge in demand for online education is undeniable. But for online education to truly make a difference and impact, quality and accessibility must be at the forefront, says Michael Ouwkerk, the co-founder of Groundflr, a digital learning agency.

The digital era has ushered in a global surge in interest and engagement with online education. Global management consulting firm, McKinsey & Company, reveals remarkable statistics that underline this phenomenon. Over the span of a decade, from 2011 to 2021, the number of learners benefiting from massive open online courses (MOOCs) soared from a mere 300 000 to a staggering 220 million. This exponential growth is not a solitary occurrence; the Covid-19 pandemic in 2020 catapulted online education forward by a remarkable 92%, demonstrating its vital role in times of crisis.

However, the challenge that stands before educators and providers is to craft offerings that truly captivate and resonate with prospective learners. McKinsey & Company observes that to thrive in this dynamic landscape, education providers must embrace bold moves rather than incremental improvements. This sentiment echoes the philosophy at Groundflr.

Groundflr, established in 2016 in Cape Town, is redefining the trajectory of online learning. Their mission is to co-create innovative digital learning experiences that nurture the talents of the future. Their approach is both holistic and comprehensive, involving learning strategists, designers, and producers who collaborate to craft impactful, interactive content. Ouwkerk explains: "We don't just care about content being engaging; it should be memorable, impactful, and enriching."

The heart of Groundflr's mission lies in accessibility. Ouwkerk, originally from the Netherlands with a part of his upbringing in the US and later establishing himself in SA, is dedicated to democratising learning. "There are particular things we measure: Will the learner actually walk away with it [knowledge and skills]? So, how do you create good education online that is both accessible and applicable to the target market?" he inquires.

Ouwkerk and his team possess an intriguing approach to transforming existing content into captivating learning

experiences that leave a lasting impact. "We add value to organisations through an end-to-end development service to reach impactful outcomes. Our core service is learning design. We take your (existing) content and transform it into an amazing learning experience, using the latest technology to develop highly engaging, interactive content," he says.

Ouwerkerk emphasises the pivotal role that demographics and target markets play in designing successful online learning experiences. "How do we use the right subject matter expert for the right content to create something that is attractive and still hits home?" Groundflr is on a drive to precisely address these questions.

#### Bespoke interactive assets

The core of their methodology lies in making learning a memorable journey. Ouwerkerk stresses that a remarkable learning experience goes beyond passive reading. Groundflr converts content into captivating, interactive assets that align with the learner's style, delivering a tailor-made encounter that strikes a profound chord. It's an approach that speaks directly to the heart of the learner, ensuring that knowledge isn't just acquired but retained and applied.

Engagement is the heartbeat of their philosophy. To achieve this, Groundflr collaborates closely with experts and key stakeholders to design curricula that not only educate but deeply connect. This is particularly evident in their partnership with Smart Africa, a consortium of 22 African governments aiming to equip the continent's youth with vital digital skills.

Groundflr's focus extends beyond adult education, acknowledging the need for technological solutions from early childhood development to matriculation. Ouwerkerk passionately argues for a paradigm shift in education priorities. He asserts that while tertiary education is

a privilege, early childhood development and K-12 are inalienable rights. Investing in these phases of education is where the true transformation occurs.

*It's an approach that speaks directly to the heart of the learner, ensuring that knowledge isn't just acquired but retained and applied.*

Quality and accessibility must coexist to catalyse the transformational power of online education. Ouwerkerk ardently champions the use of technology to bridge educational gaps. He believes that with the resources available, every school library in SA can be equipped with connectivity. The potential for ed-tech to democratise education is vast, particularly with the assistance of artificial intelligence (AI). Ouwerkerk envisions AI as a tool to provide personalised tutoring and support to address the challenges of overcrowded classrooms and teacher shortages.

"If children are not able to read, then we [the adults and leaders] are the problem, not them. The solutions are there, technology is there, I believe the money shouldn't be a thing," Ouwerkerk asserts.

However, the road to comprehensive change isn't without its hurdles. Clear policy guidelines and procurement strategies are imperative to ensure content creation that appeals to the local market. Collaborative efforts between industry leaders, policymakers, and educators are essential to create a sustainable ed-tech ecosystem. Groundflr's current endeavour to

establish an African education alliance is a testament to its commitment to driving these essential conversations.

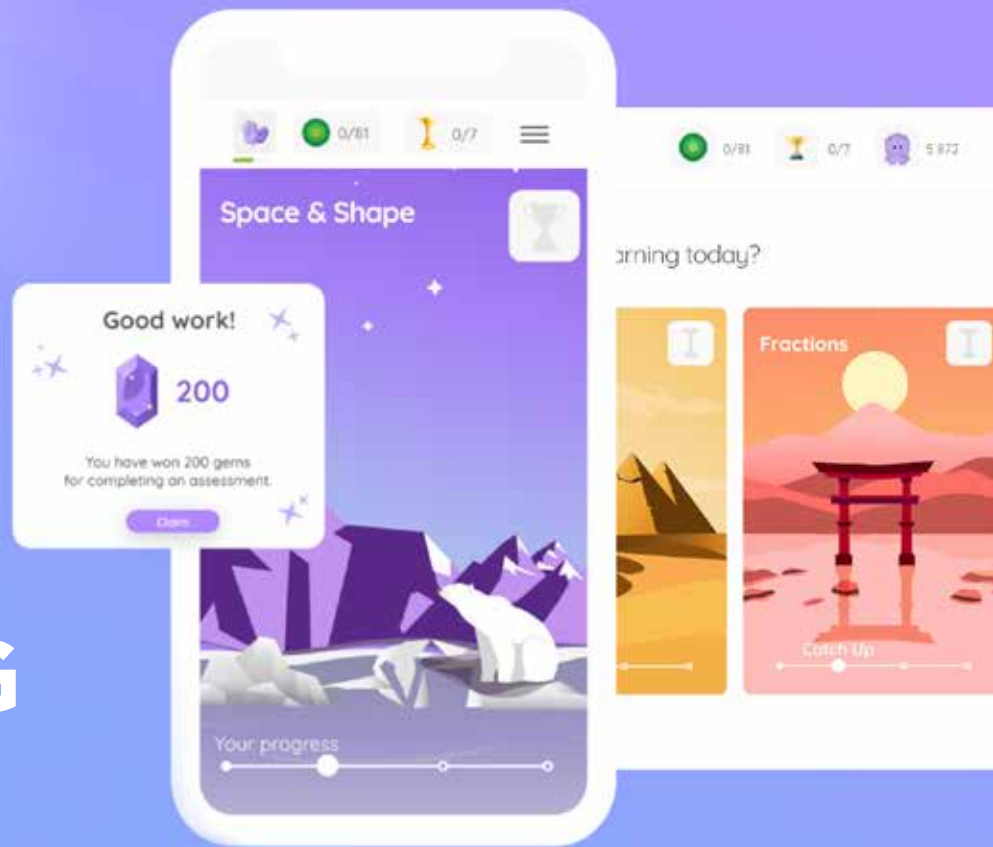
#### The future

In their forward-looking stance, Groundflr's vision reaches beyond redefining the current landscape; their goal is to shape the future. For instance, they contest that the conventional CV fails to encapsulate the depth of an individual's learning journey. Groundflr envisions an innovative methodology where developmental journeys and narratives assume a central role - allowing employers to witness growth and evolution first-hand.

"We do not believe that the future of the CV is the document you see right now. We believe that the future of CVs is development journeys and stories; how do you tell that story better? That's what employers care about. How do you develop yourself; how do you grow? We are working on a system to create that," Ouwerkerk says.

Furthermore, Groundflr envisions a world where virtual work experiences become the norm. Partnering with companies, universities, students, and recruiters, they are creating a platform to provide essential virtual work exposure, thus better-equipping students for their careers. This initiative addresses a significant gap, as only a fraction of South African students currently experience internships before entering the workforce.

Ouwerkerk's conviction is clear - the solutions are within reach. Through innovative technology, strategic collaboration, and a shared commitment to education, SA's educational landscape has the potential to achieve a world-class status.



# CLOSING LEARNING GAPS

Reflective Learning is building bridges of knowledge, one student at a time.

**For far too long, students** across SA have been grappling with learning gaps, hindering their progress and potential. Traditional teaching methods have somewhat fallen short in addressing this pressing issue.

The prevalence of these gaps threatens to undermine the potential of SA's future leaders and innovators, says Keelan Whiting, the CEO of Reflective Learning. The Cape Town-based firm aims to assist teachers in identifying and plugging gaps in each learner through its pedagogically backed personalised learning platform.

SA's education system grapples with a historical legacy of discrimination and socio-economic disparities. Amid this landscape, the prevalence of learning gaps among students remains a daunting concern. Despite prolonged efforts by the education sector to tackle this problem, a significant number of learners consistently lag and remain stagnant in their progress. If left unattended, this challenge will cast a long shadow over the nation's development prospects.

Whiting points out that the challenge of learning regression or academic delays is not exclusive to SA; however, within the nation, it is undeniably amplified by the legacy of discrimination and the glaring socio-economic divides. As highlighted by

renowned education economist, Nic Spaull, his research revealed a disheartening truth: by the time grade 9 is completed, students from the poorest 60% of schools in SA exhibit an average lag of four years in their grasp of maths. This distressing reality translates to an inability to comprehend the classroom instruction they receive.

Putting a sharp emphasis on core subjects like maths and English, Reflective Learning, founded in 2017 and based in Newlands, Cape Town, is on a mission to rewrite this narrative. By catching learners up to speed, it empowers them to engage more effectively in the classroom, dismantling the barriers that have hindered their progress.

### Strong foundations

Powered by a pedagogically advanced personalised learning platform, Reflective Learning adeptly pinpoints and fills the knowledge gaps specific to each student. These gaps, shaped over the years, are the weak foundations that jeopardise a student's future academic success.

Whiting draws a powerful analogy to illustrate this concept: "Think of it like building a tower or a house with blocks - if you have a strong foundation, you can easily keep adding more blocks (or concepts) on top, but if you build on sand it can easily wash away." Just like a tower or a house, a student's academic journey requires a solid base. Reflective Learning identifies the "missing blocks" in a student's understanding and crafts a personalised learning journey to shore up those gaps. This journey becomes the bridge between lagging comprehension and mastery of critical subjects, particularly maths and English.



While English education often focuses on basic literacy skills, Reflective Learning's approach extends far beyond that horizon. It embraces the evolving nature of the language and the digital communication age. The emphasis is on effective language usage, encompassing visual and oral comprehension, written expression, and linguistic structure.

This comprehensive approach aims to equip students with the language skills needed to navigate today's society, where communication nuances can determine personal and professional success.

In maths, the Reflective Learning solution truly shines. "Each concept builds upon the ones that came before it," Whiting stresses. An unstable foundation - represented by gaps - threatens the entire structure of mathematical understanding. By identifying and addressing these gaps, Reflective Learning ensures a sturdy foundation, enabling students to confidently tackle advanced concepts and excel in the subject.

#### Personalised learning

Reflective Learning's groundbreaking approach is centred around personalised learning journeys. It understands that each learner has a unique set of "missing blocks." To bridge these gaps, Reflective Learning employs a sophisticated

assessment process, creating a blueprint of each learner's knowledge landscape. From there, a tailored, self-guided remediation plan is curated, starting from the very basics and progressing incrementally. This methodological approach continues until the gaps are fully addressed.

Reflective Learning's innovative solution is future-ready, smartphone-enabled, and accessible to all. It embraces the reality that not every student has a teacher to guide them through the learning journey. By assuming this role, Reflective Learning bridges the gap between foundational knowledge and curriculum mastery. It empowers teachers to focus on curriculum delivery while ensuring that learners have the tools to succeed.

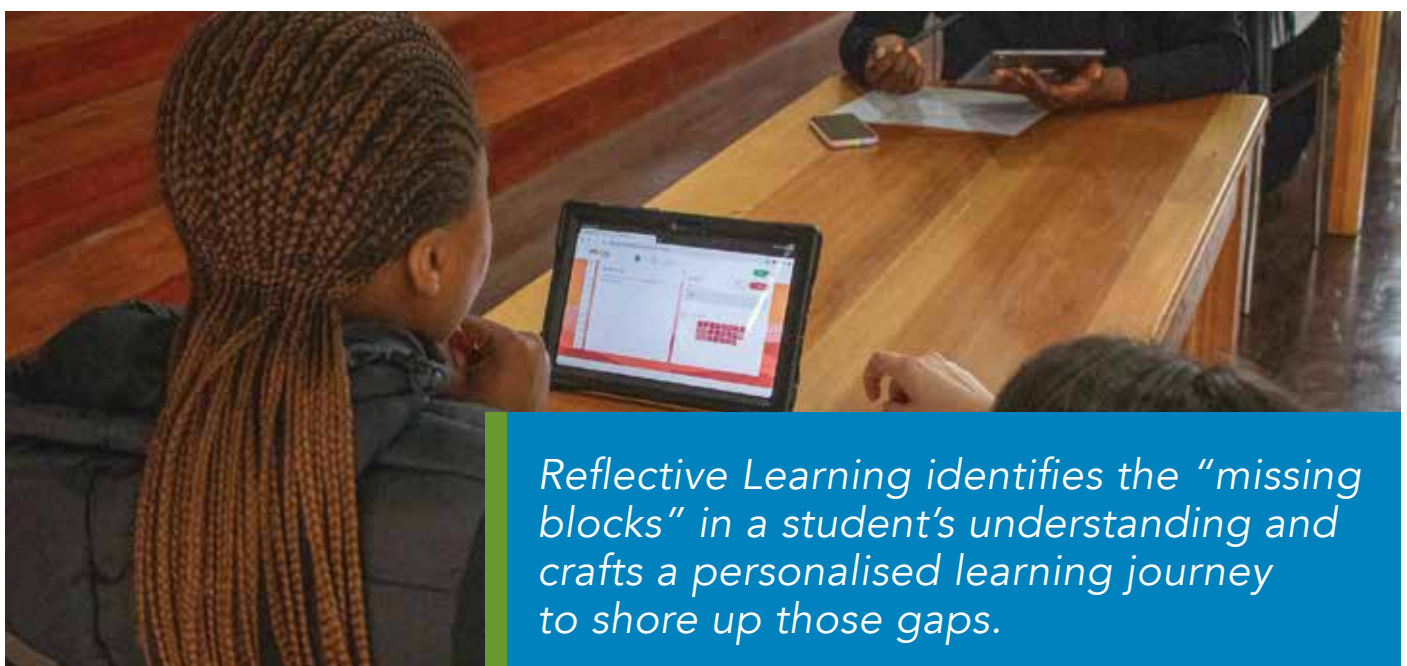
The results are striking. Data from over 350 000 assessments reveal that learners can make up for four years of missed learning within a single year, with just an average of an hour per week. As of now, around 90 000 students across approximately 300 schools are benefitting from Reflective Learning. International demand is outpacing local uptake, pointing to its global relevance.

Whiting envisions "hitting a million learners a year" within five years.

Importantly, his determination lies in prioritising SA, where the urgency is greatest. Reflective Learning has forged partnerships with industry leaders like Standard Bank and Allan Gray to finance the widespread implementation of its solution in schools that require it most.

While Reflective Learning flourishes in the world of technology, its vision extends beyond bits and bytes. Whiting champions expansive public-private partnerships to propel educational advancement. Moreover, a pivotal need arises for an accreditation body governing ed-tech - a quality-assuring framework that amplifies results. Notably, Reflective Learning underscores the urgency of enhanced ICT preparedness in schools, acknowledging technology's potential as a potent catalyst in unravelling intricate educational challenges.

Whiting emphasises: "The solution to our profound challenges lies in technology, given the immense scale of the issues at hand."



*Reflective Learning identifies the "missing blocks" in a student's understanding and crafts a personalised learning journey to shore up those gaps.*

# NAVIGATING THE ED-TECH LANDSCAPE WITH CONFIDENCE

How Schoolscape is connecting schools and leading ed-tech suppliers to fuel educational innovation.

**The ed-tech industry is booming** with new and innovative solutions, but many schools are still struggling to access or adopt them. This is where Schoolscape comes in - the vital bridge that connects innovation to practical implementation.

Schoolscape is a Stellenbosch-based startup founded in 2018 that connects schools with leading ed-tech suppliers through physical and online events. They recognise that introducing schools to innovative suppliers is crucial, yet the real challenge lies in helping schools navigate the abundance of options.

"The ed-techs we are building are brilliant, but we need to take them to market. The South African market and across the world," remarks Ashleigh Viljoen, the General Manager of Schoolscape. In a nation that's grappling with educational inequality and skills gaps, the need for technology to bridge these divides has never been more crucial.

One notable innovation in education technology is Reflective Learning, which has the potential to revolutionise numeracy and literacy. Viljoen praises the product for effectively addressing the significant needs in these areas in our country. The core focus is assessing students' learning progress and bridging gaps, resulting in rapid catch-up. This company has a strong chance

of going global. Despite promising innovations, many companies face challenges entering the

education market. Schoolscape aims to bridge the gap between schools and leading ed-tech suppliers. With their expertise as connectors, Schoolscape believes that in today's ever-changing education landscape, schools and parents require help in finding the best IT solutions to enhance efficiency and student success.

Viljoen elaborates: "We help schools procure better. Our goal is to become experts in the field of educational technology, guiding schools to choose solutions that truly work for them. This empowers schools to use their limited budgets more effectively while ensuring a credible, long-term partnership with suppliers." In essence, Schoolscape does the legwork, ensuring that attending schools can confidently explore a curated selection of solutions that align with their unique needs.

Undoubtedly, Schoolscape has tapped into a wellspring of need. Many non-governmental organisations are also collaborating to empower schools in underprivileged areas to acquire technology that boosts efficiency and learning outcomes.

## Technological needs

Peter Morgan, CEO of Schoolscape, explains the company's beginnings: "We noticed a gap at education events – schools lacked a dedicated place to find technology that suits them." In the vast ed-tech world, there was an unmet need. Morgan stresses the time constraints of educators, saying, "Principals and teachers need efficient solutions that

improve their effectiveness without adding complexity."

Morgan's insight sparked the birth of a dedicated hub for addressing the distinct technological needs of schools. "We are all about schools – both primary and high schools.

Our clients are schools, as well as educational technology providers," Morgan explains. The company's focus spans the entire country, with expansion into Southern Africa underway.

SA's education system faces major hurdles: overcrowded classrooms, stressed educators, and unceasing demands for results. Educational technology emerges as a potent force for change. "Even a small tech infusion, boosting school efficiency, makes a big impact," notes Morgan. However, embracing this change isn't simple. Obstacles like time-constrained teachers, budget constraints, and the growing tech-curriculum gap impede progress.

Schoolscape events held in Cape Town, Johannesburg and Durban provide decision-makers a vital chance to discover, assess, and adopt transformative educational technologies, according to Morgan.

He stresses the significance of using technology to enhance education and close skill gaps in South Africa and across Africa. Schoolscape's mission is to expand and advance technology in education, aiming to improve results and spur economic growth. Additionally, the company aims to help local businesses with outstanding products enter global markets.



Western Cape  
Government  
**FOR YOU**



# Investing **R1.2 billion** over 3 years to reverse learning losses

“Our innovative **#BackOnTrack** programme to reverse learning losses caused by the pandemic is the largest of its kind in the country.

Improving learning outcomes is critical to ensuring that learners are prepared for post-school education and employment in the Western Cape.”

**David Maynier**

Minister of Education,  
Western Cape





# BRICK-AND-MORTAR SCHOOLS STILL MATTER: THE SPARK SCHOOLS STORY

Where tech and teachers team up for excellence.

**Amidst the rapid advancement of** technology in education, the traditional approach to learning remains an indispensable cornerstone. Stacey Brewer, the co-founder of SPARK Schools, acknowledges the vital role of technology in education but firmly believes that it won't supplant teachers or physical schools. Instead, she sees technology as a catalyst for data-driven instruction, ensuring students receive tailored interventions to close gaps and excel based on global standards.

"We are about understanding each child's needs and meeting them where they are, using technology to enhance their learning journey. Technology is one piece of the puzzle, not the whole solution," Brewer points out.

While online schooling gained traction during the pandemic, Brewer underscores the value of brick-and-mortar institutions. According to her, schools are not merely academic centres but also nurturing grounds for character development, social interaction, and emotional learning. "In-person interaction is pivotal for holistic growth," she adds.

"Technology will not replace teachers or brick and mortar schools, it will enhance education," asserts Brewer, her passion palpable. SPARK, a network of private schools in SA, came into being in 2012, sparked by Brewer and her co-founder Ryan Harrison's deep concern for local education. Their solution was a significant one: a new model that democratises quality education across the country. This is significant given the dire state of education in many parts of the country - a crisis masked by budget allocations, Brewer points out. She highlights that while education gets a large share of the country's budget, the outcomes largely fall short of expectations. Therefore, SPARK

is on a mission to shake up education, boost access across the country, amp up results, and bridge the skills gap that is slowing down economic growth.

The journey began with SPARK Ferndale in Johannesburg, shining brightly as a symbol of hope. Since then, the network has burgeoned to encompass 20 primary schools and 4 high schools, empowering 15 000 scholars across Gauteng and the Western Cape. But they are not stopping – new schools are set to sprout each year as SPARK pushes for nationwide transformation.

*Schools are not merely academic centres but also nurturing grounds for character development, social interaction, and emotional learning.*

Expansion, however, isn't without its challenges. The struggle lies in affordability, particularly in the Western Cape. "Land and property costs can be steep," admits Brewer. But SPARK's focus remains resolute - new schools in new areas to touch more lives. For Brewer and her team, education is a birthright. They welcome all, irrespective of academic prowess. "Any child from any community can achieve," she firmly states. "We are open to all," Brewer emphasises, highlighting the school's non-denominational stance.

## **Sparking greatness**

SPARK uses technology to personalise learning for each child, regardless of their background. By tracking each scholar's progress and pace of learning, teachers can understand their



needs and structure learning accordingly. From Grade R, scholars are introduced to technology to help them become tech-natives. Tools like Reading Eggs and ST Maths are utilised to make literacy and maths fun for kids. Brewer says the institution believes that every child deserves the opportunity to reach their full potential and is passionate about sparking greatness in each one of its scholars.

SPARK is more than a name - it's a belief. The acronym signifies the values that define the institution: Service, Persistence, Achievement, Responsibility, and Kindness, Brewer stresses. SPARK isn't just about education; it's about systemic transformation and national upliftment, she points out.

Affordability is at the core of SPARK's mission. At about R31 000 a year for primary education and R40 000 for

high school, the fees are a fraction of elite private institutions making quality education accessible, Brewer states. She envisions more schools sprouting, particularly in suburbs and underserved areas, eliminating long commutes and transforming lives.

Covid-19 loomed large, casting a dark cloud over education, pushing it in reverse. Brewer acknowledges the gap and advocates collective action for its closure. The trajectory remains clear – more schools, more impact. The Western Cape beckons, fuelled by the ever-increasing demand.

SPARK also invests heavily in its teachers to ensure academic excellence.

"Teachers are our true assets," Brewer asserts. The institutions educators get 245 hours of training and coaching every year. While technology dazzles, it's the teachers

who orchestrate success, Brewer says. Teachers mould minds and shape futures. Brewer is adamant about elevating their stature, equipping them for excellence. After all, education's quality hinges on their skill and professionalism. Brewer's call for elevated learning expectations cuts to the core. It's about working together to create a more innovative, effective, and equitable education system so that all children can succeed.

# ENRICHING PEOPLE'S LIVES THROUGH MUSIC.

With today's students being regarded as digital natives - having grown up using computers, the internet, video games, iPads and apps - it is without a doubt that technology in music education has become an essential part of a contemporary pedagogical approach to music learning.

**Driven by a singular mission:** 'Enrich people's lives through music', the Ear Academy, an online music teaching resource is revolutionising music education and empowering schools with tech enabled resources that enable students to embrace the joy of music while fostering their development. With a uniquely holistic approach, hundreds of hours and pages of teaching and learning resources, as well as an interface that indulges students' curiosity and encourages self-directed learning, Ear Academy has been helping to teach music fully, richly, broadly and deeply since 2020.

"At the heart of our mission is a commitment to providing innovative tools that bridge the gap between traditional teaching and modern technology. Our platform offers a rich and diverse array of learning facets, encouraging students to immerse themselves in music, just as they would in language acquisition or sports. We recognise that music isn't just about reading notes; it's about feeling the rhythm, understanding nuances, and expressing emotions through instruments," says Ear Academy founder and CEO, Rus Nerwich.



Their well-researched and proven method embraces both infantile and explicit learning, allowing students to develop not only technical skills but also a deep musical intuition. By offering features like shedding sessions and interactive exercises, the Ear Academy's edu-tech solution provides teachers with an incredible teaching resource, enabling students to be supported and progress at their own pace, while building a strong foundation.

In addition, they also empower educators by providing them with a comprehensive toolkit to guide their teaching approach. Their philosophy encourages teachers to facilitate rather than dictate, creating an environment where students actively engage and develop a personal connection with music. Through their edu-tech solution, educators can offer personalised instruction, monitor progress, and inspire a love for music that lasts a lifetime.

In essence, their mission in South Africa is to spark a transformative change in music education, harnessing the potential of technology to create fearless and creative musicians. By merging the art of music with modern educational tools, they aim to equip learners with skills that transcend mere notes on a page, nurturing a deeper understanding and appreciation of the language of music.

#### **A student-centred philosophy**

Unlike conventional methods that historically focused heavily on cerebral learning and rigid structures, the Ear Academy emphasises a student-centred philosophy, allowing learners



*Its innovative approach offers students the tools to become confident, skilled musicians, while enabling educators to guide and inspire them on their musical journey.*

to take an active role in their musical journey. This unique approach brings forth several distinctive features and benefits for both students and educators, including but not limited to:

**Student Empowerment:** Empowering students by placing them at the centre of their learning experience, instead of being passive recipients of information.

**Diverse Facets of Learning:** Providing teachers and their students a rich playground to explore - presenting various aspects of music, from exercises and sight-reading to improvisation, right from the start.

**Balanced Learning:** Balancing between structured learning and intuitive growth - acknowledging that students learn, not only through rational understanding but also through ear-play, memory, and intuition.

**Flexible Learning Journey:** Allowing educators to adapt their teaching approach to suit individual student needs, ensuring a personalised and effective learning experience.

**Skill Development:** Immersing students in activities such as playing along with backing tracks, encouraging them to internalise musical patterns and develop their musicality.

In a nutshell, the Ear Academy's edu-tech solution transforms music education by embracing the joy of playing, nurturing creativity and fostering a deep connection with music. Its innovative approach offers students the tools to become confident, skilled musicians, while enabling educators to guide and inspire them on their musical journey.

#### **Bridging the Digital Divide**

Research shows that in South Africa, education is the area in which the digital divide is most pronounced, with limited access to the internet, high data prices, a lack of adequate bandwidth and storage, limited access to devices and the necessary software programmes - being among some of the most significant barriers to digital education in the country. This then begs the question: How is the Ear Academy navigating the digital divide?

"Given our aim to ensure quality music for all South African kids, we have committed to pricing our product in a way that makes it accessible - this is the first way that we ensure inclusivity. We have also developed the product to be accessible online and not as an app, which makes it accessible on any computer or tablet. By creating an easy to use and intuitive UX, there is no requirement for a high level of technological literacy. So, we are confident that the product will be used and enjoyed by students from diverse backgrounds", says CEO, Rus Nerwich.

#### **Looking ahead: The future of music looks bright**

The Ear Academy is currently developing a full curriculum for class music. This will enable teachers to provide class music lessons to their students, without having to be subject specialists. It will also introduce music to younger children at an early age, stimulating and opening up both their interest, as well as the inherent benefits that learning and playing music offers.



# THE POWER OF PLAY

## How gaming can drive educational success.

**In the thrilling blend of** learning and fun, a remarkable shift is unfolding. At the forefront of this transformation is Trackosaurus, an innovative start-up based in Cape Town. The company is driving a movement that merges the captivating appeal of gaming with the potential to reshape SA's educational landscape in unprecedented ways.

The post-1994 era marked a monumental stride for South African education, extending the privilege of schooling to an unprecedented number of children. Yet, as Luke Crowley, the founder of Trackosaurus, cogently articulates, the current focus rests on fortifying the foundation of education.

"Think of the Foundation Phase as the bedrock of learning," Crowley says, adding that this is akin to laying the cornerstone upon which a child's entire educational trajectory is built. Neglecting this phase can lead to a lifetime of educational setbacks, Crowley points out.

The statistics are telling: According to the most recent Progress in International Reading and Literacy Study (PIRLS) results, Grade 4 students in SA are lagging behind their peers worldwide in fundamental literacy skills. This trend is also evident in the field of maths, a crucial subject that holds the key to numerous opportunities, particularly within scientific and technological fields. The issues, however, don't stem from these grades alone; they simmer from an even earlier stage - preschool and the early Foundation Phase. One of the challenges lies in pinpointing struggling students and addressing their specific needs. This is where Trackosaurus steps in.

Trackosaurus, launched in 2018, shines as a symbol of innovation dedicated to preschool and early Foundation Phase education. Unlike conventional assessment tools, Trackosaurus gamifies skills measurement, making it interactive and enjoyable for children. Scepticism often casts a shadow on gaming, seen by some as a frivolous indulgence that squanders precious time. However, when applied judiciously, gaming possesses the remarkable capacity to nurture fundamental skills, yielding astonishing educational dividends. The Trackosaurus platform ingeniously capitalises on this potential, helping teachers track children's progress through tablet-based games that demand minimal adult assistance.

This groundbreaking approach is underpinned by a synergy of behavioural insights and light machine learning. The outcome? Teachers are empowered with real-time, reliable data that spans a spectrum of developmental skills without infringing upon vital class time. Each Trackosaurus game is psychometrically sound, ensuring the accuracy of results. Nonetheless, the magic ingredient that renders Trackosaurus an educational game-changer is the sheer fun woven into its assessment tasks, making the experience a captivating adventure.

### Tailored solutions

Imagine a classroom where students excitedly engage with educational games on tablets, unknowingly participating in self-assessments. These games are not only fun, but also strategically designed to measure key developmental skills. Teachers receive instant, reliable feedback, enabling them to tailor their instruction to suit each child's needs. With these insights, educators can focus on guiding their students, confident that they are addressing specific areas of improvement.





*“We firmly believe that early education holds the key to breaking the cycle of educational inequity,”*

Crowley explains that Trackosaurus employs an ingenious approach to make assessment less daunting for teachers. He emphasises that teachers are already stretched thin, and piling more responsibilities on them is counterproductive. Hence, the Trackosaurus platform ensures that teachers can continue teaching effectively while students autonomously engage with assessment games. It's a win-win situation that promotes student growth without overburdening educators.

A hallmark of Trackosaurus's success is its adaptability to diverse learning environments. Regardless of the varying speeds at which children progress, the platform provides clear insights into each student's journey. The teacher dashboard, user-friendly and informative, allows educators a way to quickly and easily gauge their classroom's progress. This approach eliminates the urge for comparison between educators and instead focuses on tracking individual student development - a core tenet of Trackosaurus's philosophy.

Crowley emphasises that for educational transformation to take place, a strategic focus on Foundation Phase is paramount. “We firmly believe that early education holds the key to breaking the cycle of educational inequity,” he says.

#### Partnerships

Trackosaurus doesn't stop at providing assessment tools; it's a movement toward equitable education. By partnering with public schools, the company ensures that its impact is far-reaching, particularly in historically disadvantaged communities. In these areas, Trackosaurus's tools are offered at highly subsidised rates, making quality education accessible to all. The revenue generated from high-income regions, where resources are comparatively ample, helps cross-subsidise this local implementation of the tool.

The platform's lean design, which necessitates only one basic Android tablet per classroom, aligns with resource limitations, while ensuring quality assessments. With only minimal syncing required, the solution navigates bandwidth constraints with aplomb, epitomising the ethos of efficiency and accessibility.

So, why the name “Trackosaurus”? Crowley smiles, recounting how dinosaurs have always captivated young hearts, including his young daughter's. The essence of Trackosaurus's mission is woven into its name. Inspired by the intrigue of dinosaurs and the playful spirit they evoke. The name encapsulates the brand's commitment to tracking the

developmental journey of young minds. The company doesn't walk this path alone; it forges research partnerships with leading global subject area specialists who help design the organisation's games. Crowley, a statistical expert rather than an educational psychologist, underscores the importance of these collaborations in delivering effective educational tools.

The next chapter for Trackosaurus includes an expansion to American soil, with plans to introduce its product in select states where the Trackosaurus' partner academics operate.

In the age of digital dominance, where screens may appear to clash with education, Trackosaurus ingeniously harnesses this attraction as an educational advantage. This forward-thinking approach holds the promise of elevating the Foundation Phase into a launching pad for a brighter and more empowered future.



Learn more about **Trackosaurus'** story on the **Pioneers Podcast.**



# UCT ONLINE HIGH SCHOOL AND VALENTURE INSTITUTE TAKE THE LEAD IN SHAPING THE FUTURE OF LEARNING



Online schooling is a promising tonic that has the potential to reshape the country's education system and address critical challenges.

**In the face of mounting** concerns over a shortage of teachers in SA, the growth of online education offers a promising remedy. Virtual schooling is poised to extend its reach faster and more cost-effectively than traditional brick-and-mortar schools can build classrooms.

SA grapples with overcrowded classrooms and a growing shortage of teachers - with nearly half of the current teacher workforce projected to retire by 2030, as revealed by Stellenbosch University's research unit on socioeconomic policy. This impending exodus threatens to create an educational void. However, a ray of hope emerges in the form of online classes.

According to Banele Lukhele, the Executive Head of the recently established UCT Online High School, online education is a key solution to the scarcity of teachers and the lack of educational infrastructure.

Cost efficiency is also a critical factor, as Lukhele acknowledges. Education expenses can weigh heavily on families, and online schooling offers a means to mitigate this burden. However, the potential of online education is not just financial; it's also about reshaping the educational landscape to address the looming challenges.

Lukhele emphasises that online education is not a replacement for brick and mortar; rather, it's a lifeline for an education system in dire need of support.

"Our primary focus is to enhance the accessibility of quality education for a larger segment of SA's young generation," Lukhele explains.

This vision prompted the inception of UCT Online High School in July 2021, designed to boost access to quality education. "Another concern is physical space. Given the high demand for school placements and the complexities of migrant families shifting between provinces, online education presents a unique advantage - learning from anywhere," Lukhele elaborates.

But does online schooling have staying power? Intriguingly, despite recent trends suggesting a return to traditional schooling after COVID-19 disruptions, a growing interest in online education persists. "As the reputation of online schooling

strengthens and people begin to view it as a primary choice rather than an alternative to conventional schooling, enrolment numbers are poised to surge," Lukhele predicts.

### Embracing Diversity and Bridging Gaps

UCT Online High School's July 2021 admissions intake received an overwhelming response, with over 13 000 initial applications. The institution's hallmark supported self-mastery model furnishes learners with structured flexibility, modern learning design, and support from dedicated coaches. The unique learning approach combines self-paced learning with structured adaptability, enabling data-driven teaching refinements for optimal learner outcomes.

Notably, UCT Online High School recently unveiled an Adult Matric programme delivered entirely online as part of its ongoing innovation and inclusive learning drive.

The school's NSC curriculum, aligned with the Curriculum and Assessment Policy Statement (CAPS), caters to learners from around the world. With a monthly fee of R2 195, the UCT Online High School is positioning itself as an affordable private school. In addition, the institution is registered as a Cambridge International online high school offering the Cambridge IGCSE qualification which further enhances its offerings, at a cost of R3 300 per month.

Admission criteria require learners to provide a report indicating completion of the previous year or term. However, reliable internet access is indispensable, considering the school's reliance on an online campus and a learning management system. UCT Online High School boasts a diverse learner body, accommodating individuals from across the quintile system. Lukhele stresses the school's commitment to curating content suitable for various reading levels, recognising that learners may have educational gaps, some exacerbated by Covid-related disruptions. This ensures an inclusive educational experience.

With over 4 400 learners currently enrolled, the school can accommodate more, striving to bridge education gaps and empower learners regardless of their circumstances.

*Through this initiative, the school is calling on corporates across SA to join them and invest in the youth of the country.*

However, for online schooling to thrive, Lukhele calls for an adapted regulatory framework. She notes that online education is distinct from traditional schooling, highlighting the need for updated regulations that support the unique nature of online schooling. Another obstacle is the challenge of loadshedding, which disrupts online learning due to power outages. The school strives to keep its costs manageable, even allowing learners to turn off their cameras to conserve data. "We aim to protect our price point by not imposing additional financial burdens on families," Lukhele explains.

At the heart of UCT Online High School's mission is to democratise quality education and reduce inequality, thereby unlocking SA's vast potential. A recent initiative, the 'UCT Online High School Learning Liberated Scholarship Programme,' bolsters this mission by supporting financially-distressed yet academically promising learners aspiring to contribute positively to the nation through higher education. Through this initiative, the school is calling on corporates across SA to join them and invest in the youth of the country.

### Urgency

Rob Paddock, CEO and Co-Founder of Valenture Institute, a key partner in UCT Online High School's technological advancement, emphasises the urgency of integrating technology into education. With nearly half of SA's teachers set to retire in the next decade and shrinking budgets, the traditional education model falls short, Paddock points out. He sees technology as the linchpin to empower the growing youth population across Africa, advocating for alternative learning modalities like fully online education to augment traditional teaching.

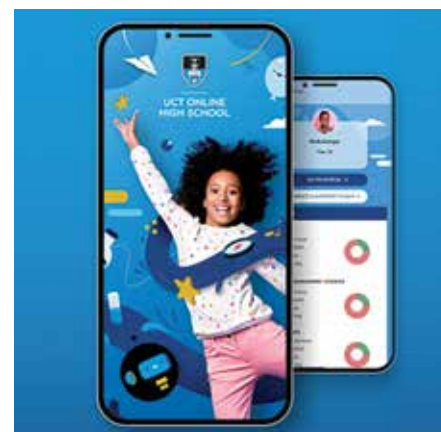
With nearly 50% of the global youth population expected to reside in Africa by 2030, Paddock underscores the urgency of intellectually capacitating this demographic for collective growth.

By embracing online education, the potential to unlock quality education for all becomes tangible, Paddock stresses.

The rise of platforms like UCT Online High School and innovative partnerships with institutions like Valenture Institute are steering SA toward a future where education transcends geographical and financial limitations.

Valenture Institute, a social enterprise and education technology partner, collaborates with world-renowned educational institutions to redefine schooling limitations. Embracing a futuristic approach, it blends technology with education to provide comprehensive online high school programmes.

Guided by the science of online learning, Valenture Institute leverages robust learning technology, sophisticated analytics, and comprehensive support services to scale learner outcomes. Paddock highlights the need to harness technology to empower teachers to cater to larger learner cohorts effectively. Creating alternative learning modalities not only eases pressure on traditional systems but also reflects the potential of an evolving education landscape. Paddock underscores that the marriage of technology and pedagogy holds the key to unleashing SA's untapped potential and bridging educational disparities. "We need technology to augment teachers because, as a country, we have less teachers serving more learners on less budget. It's just not pragmatically possible without a fundamental paradigm shift in how we support learners," Paddock says.



# EMPOWERING WOMEN ENTREPRENEURS AND STUDENTS

## WomHub Empowers Women in STEM for Skill Growth and Startups.

### Strategically investing in women

**entrepreneurs** and students is crucial to drive SA's economy forward while tackling the pressing challenges of unemployment, poverty, and inequality head-on.

Naadiya Moosajee, the co-founder of WomHub, an incubator empowering female engineers and entrepreneurs, emphasises that targeted skill development and entrepreneurship are not just smart moves but game-changing strategies that can fuel economic growth and job opportunities, especially in SA.

Studies indicate that women often gravitate towards job-creating industries, making their support even more crucial. Moosajee speaks with conviction: "We are unapologetic. There are financial returns if we invest in women entrepreneurs and skills development for female students." She stresses WomHub's commitment to empowering women in STEM fields

*"We are a space focused on women, not exclusive to them."*



(Science, Technology, Engineering, and Manufacturing), reshaping the gender disparity narrative.

Founded in 2006 as part of WomEng, a STEM innovation non-profit, WomHub transformed into a for-profit powerhouse providing tailored business services and support for women in STEM careers.

WomEng Fellows, a programme for university students, enhances employability and entrepreneurship skills. They also offer training in women's cybersecurity. Partnering with Cisco as a network academy partner expands their focus to include digital skills, AI, and cybersecurity training.

### Boutique ecosystem builder

WomHub's diverse approach, termed a 'boutique ecosystem builder' by Moosajee, creates success by offering co-working and tech hubs in Johannesburg and Cape Town, connecting female entrepreneurs, integrating Cisco tech, supporting work-life balance, including STEM activities for kids, and prioritises holistic well-being through health, fitness, and mental health services.

WomHub's accelerator offers e-learning, expert mentors, and startup support, turning female-led businesses into tech-savvy successes. They also venture into capital investment with Five35 Ventures, a \$30 million fund led by co-founder Hema Vallabh, focused on backing African women in tech.

Partnerships with corporate giants such as Sasol and De Beers exemplify WomHub's reach and impact. Notably, the collaboration with De Beers aims to bolster female engineering talent around

their mining operations, furthering the cause of women representation in traditionally male-dominated industries.

### Solving for pain

Why focus on women? Moosajee's response stems from her personal journey as a female engineer turned entrepreneur and investor, driven by a desire to address real challenges. WomHub's approach is firmly rooted in tackling the hurdles Moosajee and Vallabh faced in their engineering and entrepreneurial careers. This encompasses the alarming gender disparity in African venture capital funding, where less than 2% of the funding reaches female founders.

However, Moosajee makes a vital distinction: "We are a space focused on women, not exclusive to them. Men are always welcome; they play a crucial role in the diversity and inclusion dialogue." WomHub inspires high school girls through programmes like "GirlEng," upskilling university students for STEM careers and sharing success stories of individuals progressing from high school through university to entrepreneurship, showcasing their holistic approach. WomHub has supported 200 female founders across 30 countries, aligning with its pan-African values. In a corporate landscape with few female CEOs in the JSE's top 100 companies, there's a pressing need for change.

Moosajee highlights the significance of deliberate leadership and financing to empower female leaders, a key driver of economic growth. In a business world marked by gender diversity challenges, her message is unequivocal: "Invest in female fund managers and founders for maximum impact."

# MASTERCARD FOUNDATION EDTECH FELLOWSHIP PROGRAM

## *Improving educational outcomes in South Africa*

The Mastercard Foundation EdTech Fellowship Program is an EdTech specialised venture support program uniquely designed for high-growth and high-impact companies addressing pressing challenges in education in South Africa through technology and innovation.

### PROGRAM BENEFITS INCLUDE:

- Equity-free venture funding of over R1,000,000.
- Hands-on support and "sponsored skills" by specialists in education innovation, fundraising, impact M&E, commerce and more.
- Bespoke market research support by the Injini Think Tank's team of education innovation researchers.
- Pedagogical evaluation and certification by [Education Alliance Finland](#).



### ABOUT INJINI:

Injini is a registered Non-Profit Company (2017/193849/08) based in Cape Town, South Africa with the sole purpose of improving educational outcomes in sub-Saharan Africa. Founded in 2017, Injini remains the only EdTech specialised accelerator in Africa.

Injini's various programmes and research (via the Injini Think Tank) contribute towards its mission to increase the quality, accessibility, and relevance of education in the region.

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