SUMMARY

Africa Teen Geeks (ATG), based in Johannesburg, South Africa, is one of the largest computer science non-profit organisations in Africa [1]. In 2020, the organisation expanded into Nigeria and Kenya. Founded in 2014 [2], ATG’s mission on the continent is stated as “working to educate, inspire and equip young people with the skills, resources and experience to pursue science, technology, engineering and mathematics (STEM) careers.” [2] The organisation also aims to close what it calls the “opportunity gap” through quality education.

ATG introduces computer science and robotics education in previously disadvantaged schools in South Africa through teacher training and curriculum development [3]. It has partnered with the Department of Basic Education (DBE) to co-create the country’s Coding and Robotics Curriculum, catering for pupils from Grade R to Grade 9 [4]. Across its numerous projects, ATG has trained over 600,000 children with the aid of 1,300 volunteers and 150 qualified teachers.

The organisation offers several coding-related programmes including Saturday Coding Classes [6] and runs South Africa’s first digital STEM school [7]. ATG also hosts the annual Girl Geeks Connect Summit in Johannesburg [5].

HISTORY

Africa Teen Geeks was founded in 2014 by Chief Executive Officer and coding advocate, Lindiwe Matlali. Matlali founded the non-profit organisation after meeting and being inspired by an eight-year-old coder who had built her own app and presented it at the Massachusetts Institute of Technology (MIT) in the United States [8]. Matlali has said she started ATG in order to help eliminate barriers to pursuing careers in STEM that are faced by disadvantaged communities in South Africa [9].

In 2015, ATG was selected as one of various international charities to receive support from Google. ATG was the only NPO from South Africa to be selected that year [10]. That same year, the organisation launched its annual week-long Festival of Code and its Hour of Code event, which coincides with International Computer Science Week [11].

In 2016, the organisation partnered with local bank Standard Bank to launch the “Girl Geeks” project [12], which was aimed at “creating a pipeline of women in the information and communication technology (ICT) sector”.

In December 2017, together with the South African Broadcasting Corporation Foundation and the University of South Africa (UNISA), ATG launched its Saturday Coding Classes [13], still running today.

In 2019, ATG signed an agreement with the DBE to co-create the country’s Coding and Robotics Curriculum for Grade R to Grade 9 [4]. In January 2020, development workshops for the curriculum were held at the Microsoft offices in Johannesburg.

In March 2020, in response to South Africa’s national lockdown due to the Coronavirus pandemic, ATG launched its STEM Digital Lockdown School [14].

CURRENT INITIATIVES

Coding and Robotics Curriculum
Africa Teen Geeks is the official partner of the Department of Basic Education in the co-creation and development of the national Coding and Robotics Curriculum for basic education [15]. The standalone subject, due to be introduced into the curriculum in 2020 but pushed back to an as yet unspecified date [16], will include:

• Application Skills
• Internet and e-Communication Skills
• Data and Information Management Skills
• Computational Thinking Skills
• Robotics and Coding

**STEM Digital Lockdown School**

In early 2020, ATG’s STEM Digital Lockdown school was launched in partnership with the South African Government and the Sasol Foundation [17], in response to the COVID19 pandemic and resultant national lockdown. Classes were initially made available via ATG’s YouTube, Facebook and Zoom accounts. In April 2020, the initiative was expanded onto community television [18]. While private schools were able to migrate learning to online platforms, this programme aimed to minimise the disadvantage experienced by public school children.

To date, the STEM Digital School has reached over 500,000 learners across the country[19] with more than 405,455 views on YouTube.

**Knit2Code**

The Knit2Code campaign was launched in 2017, and is designed to teach young girls how to code through knitting [20]. It helps girls between the ages of seven and 14 to learn about the basics of computing, thanks to the similarities between knitting a pattern and programming a computer. Knit2Code participants write a python code for the projects they knit [21].

**Saturday Coding Classes**

ATG’s Saturday Coding Classes are offered in partnership with UNISA, and are aimed at bringing coding classes to disadvantaged communities. Parents can register their children in Grades 4-12 to take free classes at various UNISA campuses in South Africa.[22]

**Computer Science Week**

In late 2015, the first Computer Science Week was held. More than 12,000 children attended and were able to learn about computer science at UNISA’s computer science laboratories. The annual week-long event is dedicated to exposing disadvantaged youths to computer science, coding and robotics education.[23]

**#Hack4Justice**

In 2018, a team of ten South African high school pupils won first prize at the Silicon Valley #Hackathon4Justice competition, organised by United Nations Office on Drugs and Crime (UNODC), in partnership with Symantec and ATG.[24]

**Girl Geeks programme**
The Girl Geeks programme trains young girls to be future women in STEM-based careers. It also includes a teacher training programme presented in collaboration with the Department of Basic Education. The annual Girl Geeks Summit was established in 2016 with the aim of exposing young girls to the world of science, technology, engineering and mathematics careers. The summit invites young girls from disadvantaged backgrounds to an event which showcases careers available in the STEM industry.[25]

CRITICISM

An online reading initiative by Africa Teen Geeks in April 2020 as part of its STEM Digital School, called “The Reading Club”, received criticism on social media and in the press over its inclusion of South African celebrities as “teachers”. The literacy programme saw local celebrities use the Zoom platform to host informal reading classes aimed at promoting learning during the country’s nationwide Covid-19 lockdown. Alleged inaccuracies and errors made by celebrities provoked a backlash online and led to the creation of the hashtag #CelebritiesAreNotTeachers.[26] The Department of Basic Education distanced itself from the initiative, saying it was not involved in the selection process for the hosts. Among the personalities and politicians chosen for this initiative were Dr Phumzile Mlambo-Ngcuka, Pearl Modiadie, Mohale Mhlongo-Motaung, Somizi Mhlongo-Motaung, Penny Lebyane, and Tumi Sole.[27]

PARTNERSHIPS

In 2016, Africa Teen Geeks partnered with Standard Bank to launch the Girl Geek initiative. In its first year, the initiative saw Standard Bank sponsor 100 young girls to participate in a number of programmes and events, including Computer Science Week, Hour of Code, Girl Geeks Women’s Month, Festival of Code, Graduation from Java Coding, and ongoing mentorship and engagement with Standard Bank representatives.[12]

In 2018, ATG partnered with the United Nations Office on Drugs and Crime to host a global three-day hackathon in Silicon Valley called #Hack4Justice.[28] According to host corporation Symantec, “#Hack4Justice served as a platform for teenagers to focus on developing applications that addressed problems in global criminal justice, organized crime, drug-related crime, and crime prevention.”[29]

In 2019, ATG partnered with the Department of Basic Education to create a Digital Skills Curriculum for Grades R to Nine.[30] The curriculum was scheduled to be implemented in South African schools from 2020, but has been pushed back to an as-yet unspecified date.

In 2019, ATG also partnered with financial services company MMI Holdings to host the first annual Girl Geek Summit, an extension of its Girl Geek initiative.[31]

AWARDS

- Schwab Foundation/World Economic Forum Social Entrepreneur of the year 2020
• Motsepe Foundation Shining Light Award, 2019 (http://motsepefoundation.org/international-womens-day-motsepe-foundation-womens-unit-calls-for-a-gender-balanced-society/)
• Germany Digital Female Leader Award, 2019 (https://digital-female-leader.de/en/bewerberinnen/lindiwe-matlali/)
• Winner BBQ awards Community Builder of the year Award, 2017 (https://www.bizcommunity.com/Article/196/712/169224.html)
• Destiny Magazine #Powerof40 list of Powerful Women Under 40, 2017
• Named one of Innov8tiv’s Top 50 Visionary Women in #Tech To Watch in 2017
• Named one of the #InspiringFifty 50 Most Inspiring Women in South Africa 2017 (https://southafrica.inspiringfifty.org/lindiwe-matlali)
• Techwomen Fellow, 2017 (https://www.techwomen.org/impact-story/lindiwe-matlali-7)

EXTERNAL LINKS
• Official website (www.africateengeeks.co.za)
• Lindiwe Matlali’s TEDx Talk on the #Knit2Code initiative (https://www.youtube.com/watch?v=dbZQwTvIBN4)

REFERENCES


