



SHE Initiative Proposal
Christopher Kolade Foundation

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FOUNDATION CONTACT

Omolola Shopeju

oshopeju@ckf.org.ng

08171926712

www.ckf.org.ng



BACKGROUND

Girls are an important resource for global development, but those living in developing countries face challenges and barriers, including education, that interfere with their ability to reach their full potential. Removing barriers to education for girls has garnered momentum in the last decade but girls' education goes beyond getting girls into school. It is also about ensuring girls can complete their education; acquire the skills to compete in thriving labour markets; learn life skills necessary to navigate and adapt in a changing world, and can contribute to community.

In today's technology and innovation driven global economy, women are still more likely than men to be employed in "vulnerable" jobs - often informal, unpaid and without benefits and security. In developing countries, 65% of employed women are employed in such jobs, according to a 2013 World Bank study¹.

Occupations with the fastest projected growth in coming years all call for degrees in STEM fields. Also, STEM workers can earn higher wages and are less likely to experience joblessness than their non-STEM counterparts. Yet, women remain underrepresented in the science and engineering workforce.

Women make up 50% of Africa and Nigeria's population and when they are not sufficiently equipped with requisite skills, training or education to compete in growing and high yield career fields they lose out, families and communities lose out and the economy loses out.

Improving the quality of science education is essential to building science and technology capabilities in Africa and facilitating the participation of girls and women in the sector requires special attention. Supporting women to participate and be successful in STEM fields can translate to greater economic success and stability, refute negative stereotypes about women's capacity in science, and equality for women across the board.

¹ Raising the Global Ambition for Girls' Education. Global Economy and Development at Brookings, Policy Paper 2014 – 05



Christopher Kolade Foundation's (CKF) SHE-Initiative delivers science, technology and life skills interventions that lower the barrier to participation in science and technology fields for girls, and equips them to be ethically conscious change agents in their communities.

In 2017 the Foundation reached over 400 girls with a variety of science and technology (S&T) focused interventions and produced outputs that included several mobile game applications and electronic devices - *a CO gas detector, smoke detectors, electronic patient aid, motion sensing water tap system, and an electronic aid for the blind*, among other things. The Foundation also hosted the first girls-only science and technology Fair in West Africa.

THE SHE-INITIATIVE

There is evidence that well designed and implemented informal girl-focused STEM programmes can offer rich and engaging experiences that result in short term impacts as well as long-term influences on women's future choices in education, careers, leisure pursuits and ways of thinking about what science is and who does it.

Positive long-term impact are also said to be more likely when programmes are designed to build memories, create a meaningful community of practice, provide personal development opportunities, and offer a broad understanding of the meaning of STEM.

Since 2016, the SHE Initiative has offered over 400 girls from low and middle-income families unique opportunities to experience science and technology in relatable, interactive and fun ways. Girls are immersed in a variety of hands on learning activities designed to broaden their knowledge of the fields of science and technology, engage them in enquiry, stir their intellectual curiosity, build their confidence, apprise them of female role models in the field, and equip them with demonstrable skills in targeted areas of S&T. Ethics and leadership education are also important components of the SHE learning agenda.

In partnership with the Lagos State Ministry of Education, the SHE Initiative is delivered in ten (10) public schools in Lagos State.



SHE Program Goal: To advance the girl-child's participation and proficiency in STEMMA (science, technology, engineering, and mathematics, music and agriculture) fields.

Objectives:

- To offer a fun and hands-on experience in science and technology education that impacts a lasting and positive impression of science and technology, and provides actionable knowledge
- To expose girls to innovative possibilities in Science, Technology and Engineering
- To connect girls with a broad array of female role models at different stages in their science careers
- To equip girls with leadership, life and ethics skills
- To support on-going quality science interaction and education, and
- To build and facilitate a peer community of girls empowered to reach their full potential

SHE interventions are delivered primarily through residential science camps, field trips, in-school clubs, and science fairs. The Foundation also delivers holiday remediation programs to bridge identified gaps in core subject areas (English & Math) among SHE participants.

Student Eligibility & Selection

SHE participants must be enrolled in a partner Lagos State public school, must be in senior school and must be female. Participants are drawn from arts, commercial and science classes.

Selection is competitive and based on student interest, above-average academic records, and exemplar behavior. Teacher reference and personal statements are important pieces of the application. Written parental consent is also required for participation in the SHE Initiative.

OUR PROPOSAL

CKF aims to deliver SHE science, technology and leadership curricula, and other auxiliary programming to up to 300 girls in successive SS2 classes in its partner schools across Lagos. Program activities are highlighted in the table below:



Program Activities	Deliverables	Yearly Target
In- School Clubs	24 weeks of electronics programming, mobile games development, and ethics, leadership & personal development workshops	300 girls across 10 schools
SHE Pride	A valedictory event featuring inspirational guest speakers, SHE class remarks and donor meet & greet	Up to 300 girls, their families & friends, and other SHE stakeholders
Holiday Remediation	2 weeks of English language tutorial workshop	Up to 300 girls
Science & Technology Fair	1 day exhibition event featuring student exhibits, speaker panels, keynotes and video documentaries	Up to 600 girls

In-School Science Clubs

SHE in-school clubs deliver up to 24 (twenty four) weeks – an average of eight weeks per term - of hands on technology workshops, and leadership and ethics trainings. Students will be immersed in hands-on interactive learning in electronics programming and mobile games development, with opportunity to both observe and apply new knowledge in a manner that promotes enquiry, teamwork, critical thinking and effective problem solving.

Clubs will meet once weekly for 60 -120 minutes, during each school’s already scheduled co-curricular activity slot. The STEM curricula covers an overview of thriving science and technology career fields, with project-based activities delivered around modules on electronics programming and mobile games design.

Learning goals for electronics and programming

- Understanding of engineering design
- Understanding the electronic circuit as a system
- Creating a working circuit
- Writing basic computer programs in the Arduino IDE that power electronic devices



Learning goals for mobile games design

- App/game conceptualization
- Creating a mobile game for smartphone powered by google android operating system
- Understanding software design
- Understanding production, design and coding process of mobile game design
- Building games that incorporate computer or mobile touch control

Learning goals for life skills, leadership & ethics:

- Promoting understanding of leadership as service
- Developing awareness of ethics and ethical behaviour and its importance for persons and society
- Understanding soft skills

A faculty of reputed trainers delivers all SHE workshops and sessions are supervised by female chaperones.

SHE Science & Technology Fair

The SHE Science & Technology Fair is the only girls-only science fair of its scale in West Africa, and perhaps Africa. The fair provides a platform for SHE participants to demonstrate their learning and proficiency in electronics programming and mobile games design, sharpen their communication skills, build their confidence, and promotes the applicability and fun of science to a wider audience of girls. The one-day event features exhibitions of the girls' projects, and inspiring panels of young girls and women in STEM, including SHE participants.

The 2017 Fair, themed "For Girls by Girls", had the honor of the presence of Her Excellency, the Deputy Governor of Lagos State, Dr. Idiat Oluranti Adebule, who delivered the keynote. The fair was attended by up to 600 people, majority of whom were female students from Lagos State public schools. Student exhibits included:



Electronics

- Smart phone controlled lamp
- Motion sensing automatic water faucet
- Temperature and light meter using LCD
- Smart water pump
- Medical assistant - patient alert device
- App controlled door

Mobile Apps

- Space fighter (android game)
- Adventures of tommy (android)
- Puppy rescue (android game)
- Ninja run (android game)
- Sky cruise (android game)

Holiday Remediation

SHE Holiday Remediation is a two-week non-residential camp designed to bridge gaps in English language competencies of SHE participants and hedge them against summer learning loss.

The non-residential two weeks workshop will be delivered during the SS2 third term holiday an open to all SHE participants expected to resume in their final year of high school in the school term following the intervention. Four-hour day workshops (10am – 2pm) will be delivered in 10 school sites that will be supervised by CKF chaperones.

CKF partners with the Learning and Development Department of the Lagos State Ministry of Education to deliver the remediation program.

SHE Pride Valedictory Event

CKF will host SHE participants and other SHE stakeholders at a special valedictory event to celebrate the graduation of SHE participants from high school, the transformations they have experienced and to encourage and inspire them for life after school. The event will feature motivational talks from women leaders and reflections from graduating SHE participants. The event will be designed to provide the girls with unforgettable experiences.



MONITORING & EVALUATION PLAN

CKF will evaluate the SHE Initiative against program goals and objectives. A front-end and exit survey will be administered to participants to measure changes in knowledge, interest and attitudes about science and technology generally, specific topical areas covered in workshops, and around life skills, leadership and ethics.

Expected outputs, shorter intermediate-term outcomes are outlined below.

Outputs	Short/long term Outcomes
<ul style="list-style-type: none"> ○ Up to 500 girls from 10 schools are enrolled in and complete 24 weeks of technology training in electronics programming and mobile games design ○ Participating girls receive life-skills, leadership and ethics trainings ○ Participants gain knowledge about successful women in science and technology fields ○ Participants receive remediation in English grammar ○ Participants develop and exhibit technology projects 	<ul style="list-style-type: none"> ○ Participants have gained knowledge about a broad-range of science fields and career opportunities ○ Participants develop interest in STEM & STEM learning activities ○ Participants develop capacity to productively engage in STEM learning activities ○ Participants value the goals of STEM & STEM learning ○ Participants have improved perceptions of girls abilities and successes in science fields ○ Participants demonstrate leadership and ethical behaviour

PROGRAM SUSTAINABILITY

The SHE-Initiative has been funded through individual and corporate donations to the Foundation and the Foundation continually seeks to expand its pool of donors and sponsors through its year round fundraising campaigns.



ABOUT CHRISTOPHER KOLADE FOUNDATION

The Christopher Kolade Foundation (CKF) was founded in 1997, as a platform through which its founder, Dr. Christopher Kolade, would continue to make contributions to the development of Nigeria. Guided by an enduring legacy of integrity, professionalism, professional ethics and continuous learning that Dr. Kolade is known for, the Foundation focuses on Education, as its key strategic initiative. Particular attention is given to promoting Girl-Child Education, Leadership and Governance Education, Christian and Theological Education and Education in Inter-faith Relations. The Foundation also aims to make contributions in improving public education and literacy levels in Nigeria.

CKF's mission is to deliver and support programs that improve education and literacy; promote good leadership and governance; develop the Christian Faith; and advance interfaith harmony. Our vision is a Nigeria that is known for educational excellence, ethical leadership and interfaith harmony.

CONCLUSION

It is estimated that developing countries in Africa need at least 200 scientist per 1million individuals for effective industrial development, with Nigeria estimated to need 230,000 engineers and 920,600 technicians for science and technology development to take off. The relevance of science and technology to competitiveness in the 21st century, and even for life makes it imperative that the entire human resource potential be tapped for economic and social development.

By offering hands-on technology related learning, CKF aims to help girls get comfortable with the world of science and enquiry and help bridge the resource gaps in science and technology. Doing science develops our ability to ask questions, collect information, organize and test our ideas, and apply what we learn. The active participatory approach to learning that the SHE-Initiative offers, and the infusion of softer skills curricula, offers a powerful platform for broadening career options for disadvantaged girls, potentially increasing future opportunities and earning potential, building confidence, developing communication, leadership and ethical skills and making new connections. All these translate to girls, tomorrow's women, empowered by possibilities, and equipped to be participatory and responsible citizens of our country.