CODEJIKA.COM

CODING LEAGUE

CODING FOR DIGITAL ENTREPRENEURSHIP

TWO YEAR PROJECT PROPOSAL

Proposal Summary

This proposal focuses on driving national change and female economic empowerment through engaging the public, government and the Ministry of Education structures in meaningful, simple steps towards increasing awareness, confidence, practical skills and long-term transformation in Computer Science education.

1. Policy
   Propose a vocational elective in Secondary Schools: Frontend Web Development. While driving in-class and afterschool club-based learning adoption.

2. Coding Campaign
   Raise awareness through a simple, fun campaign.

3. Teacher Training:
   Allowing Teachers to have fun with Code, Clubs and Class.

4. Coding Training:
   In-school Coding Lessons with project-based learning & teacher facilitation.
   Optional: After-school coding clubs, meetups & competitions accelerating learning.

5. Online Coding Tools
   Curriculum and Online coding tools support the league, in-school learning and the campaign.

Budget Summary

Financial Budget for the CodeJIKA Program Launch in New Country		
Division	Purpose	Cost USD
Strategy & Planning		
1. Preparation, Planning & Strategy	Female Best practice Coding Brief	$6,800
	Female Event Format Planning	
	Female and Co-ed Training Plan	
	Gender Bias in Tech – Teacher Module	
	M&E Structure & Planning	
2. Prep Site Visits	Site Visits/Setting up meetings	$21,400
	Project Coordination & Planning	
3. Online Learning & Curriculum	Tools Localization	$12,000
	Engagement	
	Local Assessment	
Curriculum Development:		
	Content	
	Revision	
Monitoring:	Online Tool	
	Offline Tool	
Program Implementation		
4. Policy	Advocacy	$11,000
	Comms, Meetings & Planning	
	Relationship Building & MOU Preparation	
	Suggest Curric as In-school Vocational Course	
5. CodeJIKA Campaign	Videos	$21,000
	Strategic partners	
	Media Engagement	
	Output: over 300k reached nation-wide	
6. Teacher Training	Teacher Workshops	$68,000
	District Relationships	
7. Coding Training	Roadshows (Est. 32-40 Schools)	$75,000
	Training in 20 Schools	
	Training over 14000 students	

	Competitions	
Optional	Awards Event	
8. Monitoring & Evaluation	Yearly Monitoring & Reporting	$12,000
	End of Program Evalaution (Post 24 Months)	$4,500
Planning, Strategy & Tool Development		**$40,200**
Program Implementation		**$191,500**
Total Costs for CodeJIKA Program in a New Country: Two Year Intervention		**$231,700**

Girls Leading in Digital Ed: Taking First Prize on the Annual Coding Competition and building socially impactful projects with tech as a result. Johannesburg 2019

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Vision:

Every School in Africa Teaches Code.

First Step:

Every High School Offers a Computer Science Elective.

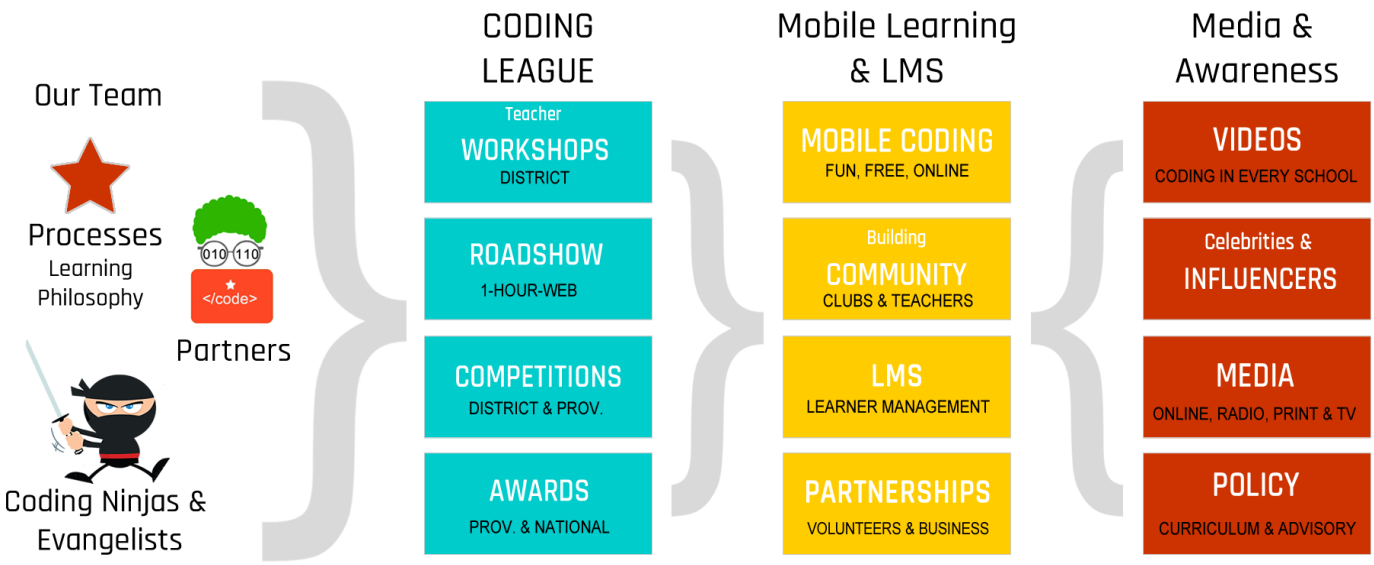
a. and
b. Invite your friends to do the same.

Our History:

Code for Change is a NPO which has trained over 25000 youth in 15 IT Training Centers & schools in 5 provinces since 2009 and has been on the forefront of coding in SA schools since 2014.

CodeJIKA Structure

Overview: Project & Campaign Structure



Our Philosophy:

We believe in the potential of youth to not only revitalize the economy, but to encourage and inspire - To lead by example and to build ethical and efficient businesses.

We've made it our job to:

A. Make sure they know we believe in them.

B. Provide them with the tools, confidence and community to build great things.

We do this through creating coding communities in secondary schools.

Our Dream:

2-YEAR VISION:

TO SEE 15 YEAR OLD KIDS MAKING MONEY FROM WEB DESIGN WHILE IN SCHOOL.

10-YEAR VISION:

TO SEE A LARGE POOL OF ETHICAL DEVELOPERS EMPOWERING LOCAL MANUFACTORERS & SMES.

Our Motivation:

Why is coding training in demand?

Opportunity-creating skills offer the user new career and study paths. They also radically increase the attractiveness of the learner within a "real" employment context. A student who has learned coding since 8th grade, taken part in competitions and is part of a club will be able to add value and be a junior developer within a few months of focused work. This is because the concepts and basics have been embedded since years.

Broader Opportunity Spectrum:

This is the primary difference between coders and those who, for example, learn carpentry. A carpentry worker can only use those specific skills in a workshop. A coder can add value in a social media company, a financial firm (working with macros and formulas in excel and other software), project management (planning and structuring processes), SMEs handling the websites and a software development company.

SME's must increase efficiency to grow or compete internationally:

The number of firms utilizing software for operations and client engagement, and needing customization thereof, is increasing rapidly. Having someone who understands how software works and being able to adapt it, either via a GUI or code, is important for a most medium sized enterprises and the market cannot supply skill at an agreeable rate.

As a result, small businesses lack skills and efficiency to create scale – This is our mission – Build a pool of ethical developers who can empower SMEs 5 – 10 years from now. We're not about a quick turnaround, we're about a long-term transformation of a job market, allowing a new breed of entrepreneur and enterprising developer to create a new form of business in SA: The digitally enabled, switched on SMME, which can compete on an international level due to specialization and efficiency.

Small businesses lack skills and efficiency to create scale – This is our mission:

Build a pool of ethical developers who can empower SMEs 5 – 10 years from now.

How We Are Different:

A. Clear 10-year vision
B. Curricular benefits to Department of Education – Data and results fed back.
C. Collaboration – Information sharing between Corporates, Min./Dept. of Education, Universities & soon-to-be students.
D. Strong Awareness component
E. Built for local and international scalability

Results so far:

Scalable & Affordable: Impacted +12,500 enthusiastic youth in 121 schools in 3 countries.

- 2019 85 schools engaged in South Africa
- Pilots in Kenya and Zambia.
- 2019 Project in the Palestinian Territories impacted 26 high schools.
- Planning stages in Colombia & Brazil.
- Raised awareness to 320,000 people
  Awareness VIDEO: Check out the awesome 60-Second video of kids coding and dancing CodeJIKA-style: https://youtu.be/v-K4tYdW608

World-changing Goals and World-class Partners:

The CodeJIKA.com project was listed as a "World-Changing Idea" by FastCompany in 2019 and works with leading brands and partners in the technology and development sectors to fulfill its objectives: Microsoft Philanthropies, DELL Development Fund, MTN, GIZ, ABSA, HSBC Australian Embassy South Africa, DataTec, TCS, IRESS and more.

In 2018, *Code for Change* began a drive to provide coding opportunities in new countries. In Jan – May 2019 a partnership with GIZ in Palestine resulted in massive success; the program was implemented in 26 high-schools and adopted in the strategy document by the Ministry of Education.

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Gender- Focused Programming

Why Digital Skills Are Critical for Women Empowerment

If women are to proceed confidently into the 4IR, then confidence and digitals skills are the levers which will allow them to lead.

Knowing how coding works, how to manipulate the building blocks of our digital society and how to build one's own presence online is probably one of the most empowering knowledge transfers of this age, especially to a young and under-resourced urban female.

Why can't women lead in the digital age? Because of a lack of access to an environment in which they can acquire confidence and skills, which leads to increased confidence in trying to learn more about digital, which leads to enhanced skills and creates a cycle of increased capacity and knowledge.

Why Understanding Code Empowers All Digital Initiatives:

Once a core building block of an online engagement, website or app, is understood, the entire environment becomes demystified. Much like how lightning in the middle ages, the feeling of powerlessness dissipates not when you tell someone that lightning is not dangerous, but rather when you help that person set up a lightning rod and explain how it works.

The next challenge may be an excel formula, designing a PowerPoint slide or reinstalling windows, but understanding that code is the building block and that someone, like you wrote similar code to what you are writing empowers the learner that tech is not that intimidating and more possible to master.

Teaching young girls in Africa and other emerging regions may well be the most empowering and catalytic, ripple-effect inducing action that can be taken.

#Code Chickas - Girls in Code

The #CodeChickas Campaign was created to encourage girls to embark on the coding journey.

CodeJIKA sees the need for a significant effort to be made in order to ensure girls see Computer Science and technology as approachable and relevant to them and their careers. To this end a special Hashtag and category for girls and coding was created: #CodeChickas

- Girls-only Coding Competitions
- This program targets an equal engagement of both young girls and boys.
- In order to ensure that the minimum target of 50% female youth trained are female a campaign-wide effort will be made to ensure that all efforts are directed towards girls first.

1. CS POLICY, ADVOCACY & CURRICULUM DEVELOPMENT

INTRODUCTION

Policy supports and drives implementation. (Code.org)

Policy includes both legislation (Law) and regulation (How it is interpreted.)

Code for Change looks at both legislation and how current regulation can be best interpreted to implement intermediary changes.

IMPLEMENTATION

The CodeJIKA Program believes that scalable impact in education only comes through:

A. Deep collaboration with education authorities.
B. Certified subjects being implemented broadly in schools.
C. Great content, outcomes and skills aligned to teen's needs, desires and real-world futures when they leave education.

It therefore assists Dept/Ministries of Education in rolling out "Web Development and/or Application Development" as a subject and/or elective in High Schools.

Provisional Accreditation:

If approval or accreditation is not immediately available then provisional accreditation will be sought through;

1. National Educational Authorities
2. Provincial Authorities
3. TVET Management & Accreditation Authorities
4. National Standards Authorities
5. Leading University/ie assigning credit to curriculum/course.

C4C Approach to Policy

- Relationship Building through meetings ,events, publications, media, campaigns
- Targetted Relationships, including with the Provincial and National Educational Authorities – Ministers & Deputies, (ICT) Educational Committees (Members and Head), Curriculum Developers and Policy Writers

Initial Submissions for CS Policy in South Africa

1. Web Development as a Subject
2. New Web/App Dev Elective Suggestion
3. Consult on CS components in Edu (As part of new, general Technology or ICT Subject)

Showcase Results, Data and Pilots

- Data
- Narrative Reports
- Pilot programs

Range of recommended policy-related activities

Possible CS Policy Actions

Collaboration/Consultation
Consultation on existing CS efforts within DBE National & Provional
Policy Writing: White Paper and Proposal
Meetings with Policy Makers
Parliamentary Engagement
Tertiary Education CS Thought-leaders Engagements

Possible CS Awareness Actions

Expo Presence Stands
Conference Speaking
Media: Radio
Media: Print Interview
Press Releases
eNewsletters
Teachers News Bulletins
Teacher Oriented Events
Provincial: District Coordinators Workshops

High-level Research, Policy Proposals & White Papers

- Explore CS – Web & Application Development Framework for High Schools
- Partner with leading proposals and African Policy-makers around Computer Science in Education for a new High-school elective: CS & Web Development tailored to labour market and needs of small and medium sized enterprises
- Advocacy with various divisions within DBE National and Provincial
- Advocacy within Tertiary Institutions and Education

2.CODING CAMPAIGN

OVERVIEW

Spearheading a high-profile, national campaign is a critical part of driving awareness and ensuring digital skills are on the national agenda (Digital Skills Strategy) leading to increased buy-in by government and industry leaders towards policy change. It also sustains and strengthens in-school engagements and district-level commitments in a fun and impactful manner. It will communicate the importance of learning web development and digital entrepreneurship skills and how this will benefit girls and youth, their families and societies. This will drive a common goal of including youth in the digital economy and galvanize support from all sectors:

- The Government benefits from to better understand the possibilities and options available.
- The general public benefits from to be aware of the opportunities for youth and how it can allow job creation and relevant skills development.
- Schools and districts need to be invigorated from multiple touch points with an engaging, fun and modern way to doing things and transforming school context. Allowing faster and more efficient knowledge flow.
- Corporates need a structured way to support awareness of the skills of the future among staff and customers.

IMPLEMENTATION

The campaign will run on the following actions:

1. **Creating advocacy and branding materials,** such as posters, flyers, banners, press releases, and ground-breaking, youth coding videos;
2. **Engaging with media and partners online:** Building relationships with media and awareness partners, including NGOs, advocacy groups, media houses and conference/expo managers.
    a. Online banner partners liaising & advocating on-boarding on high-traffic sites, e.g. Gumtree, etc
    b. Providing Corporate Partner Blast Emails, Templates and Campaign Actions - Tools creation and corporate partner on-boarding
    c. Teacher Awareness Liaising (Teachers Associations, Districts, Provinces and other Line Ministries) with email blasts, ongoing communications, print communications and high-level meetings

3. **Building celebrity and influencer engagement,** adopting a district or province together with influencers and high-profile social media marketing
4. **Web content updates, including** content, security and key features to enable an increase in collaborator sign-ups and engagement options

3.TEACHER TRAINING WORKSHOPS

OVERVIEW

The teacher training workshops are focused on equipping provinces, districts, teachers and other implementing partners to teach, examine and coach learners on practical web development skills as well as support the integration of Computer Science into the South African syllabus and curriculum. Code for Change aims to create communities of enthusiastic digital change-makers in each district that support web development and digital learning in schools.

Target Teachers & Implementing Partners:

Attitude: Forward thinking, tech savvy & open-minded. Willing to learn and energetic.

Objective of Workshops:

To create communities of enthusiastic digital change-makers in each district that support Coding clubs, events and digital learning in the schools.

IMPLEMENTATION

How will this be achieved?

1. Through ongoing communication and advocacy with key implementing partners, including email blasts, meetings, and high-level events. Target implementing partners include teachers, ICT district and provincial administrators/coordinators, and other partners (IT associations, teacher unions, NGO's etc) who are actively engaging in providing digital skills and are willing to learn;
2. Effective and engaging workshops that introduce coding, CS and CodeJika programme in partnership with the national, provincial and district Department of Education. Gov partners, Edu Tech-focused NPOs and corporate volunteers are encouraged to attend the workshops and help support and encourage teachers in their roles as mentors and change-makers.

3. Follow-up structures by third-party partners/Code for Change project managers through emails, additional training and site visits, focusing on the top performing schools.

A unique training module will be on *Gender in Technology*, which will set the stage with powerful examples of women in tech, encouraging an increase female registration, participation and leadership in classes, and evolve towards equality.

4.ONLINE PLATFORM & CURRICULUM

In-house Web Development curriculum

F. FUN. Approaches coding and web development as a fun and engaging pastime.
G. Works completely OFFLINE: No installations, No need for internet at all.
H. 3 Projects: No loading content on the machines.
    A. This means no problem with viruses and access for introductory lessons.
I. Focused on local problems and impressive outcomes;
    A. Social – Youth are expected to teach others and find solutions for their neighborhoods.
    B. Entrepreneurial – Intermediate and ultimate outcomes focus on creating a website for a local business, school or organization.
    C. Job-seeker – Project 2 creates an web-version CV.
J. Curriculum is oriented at self- & group-learning
K. Mentors & Club-Starters don't need experience in coding.

In-house Online Learning Platform

(in beta www.codejika.com)

A. Interactive, web-based mobile coding platform
    i. Full interactive and personalized learning & coding environment (not just content, but micro coding assignments with immediate feedback.)
    ii. Benefits of Web-based:

1. With Telco zero-rating all learning would be free & immediately accessible.
2. Apps incur charges for downloading and have a psychological barrier to entry.

iii. Unique mobile-first curriculum and teaching style.

B. Complementary Desktop Version (limited lessons available.)

Tech Tools in Production

C. LMS (Learner Management System) Progress Tracking & Monitoring Tool for online learners. - [in production]

D. On- & Offline Trainer Progress Tracking & Attendance Tool

Coding Curriculum Model

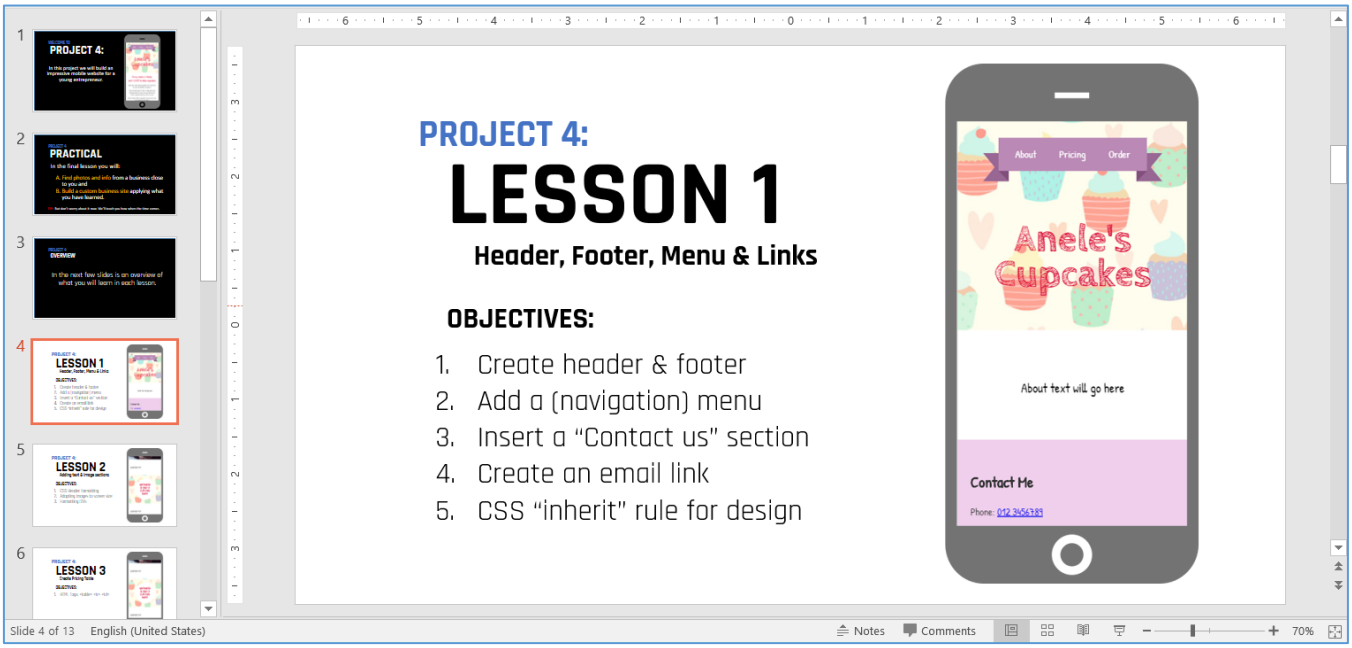


Image: Screenshot of CodeJIKA Curricular Design.

Introduction to CodeJIKA Curriculum:

One of the over-riding goals of the CodeJIKA program is to see: Monetisable skills in South African Secondary School learners.

Medium-term economic student-generated outcome:

"Kids able to make from digital skills while still in school."

Our solution brings learners further and faster to an impressive outcome thanks to removing all non-essential elements from the program.

How to we achieve this?

1. We **start with the end** result in mind. All trainers, students and participants in the program know the end goal and every step of learning is building directly to a challenging and distant goal.
2. **Practical focused training**: All learning is focused directly on implementation – Learning by doing. If theory is not important to the leaner understanding how to the build the final project, it is "stacked" for later or provided as complimentary, non-mandatory learning material.
    a. We call these theory focused elements "Learning Pods". These are mini-learning packages which can be referenced from anywhere on the page and even after a project is complete.
3. Completely linear approach: **Frontend web development is the only topic.** Backend programming structures, how a pc operates, OS, MS Office, Word, Excel are all shunned until a final, impressive project is completed.

Our goal in the curriculum development of the CodeJIKA program an as-impressive-as-possible singular final project which everything learnt builds towards.

Curricular Design Goal:

An as-impressive-as-possible singular final project which everything learnt builds towards.

Curricular Design Philosophy:

Our philosophy in curricular development is that all points of contact and learning must culminate in a singular, focused result. The outcome must be obvious, impressive and empowering. Why?

A. **Limited amount of time**: Since it is an afterschool program and hard to coordinate, get buy-in from learners, teachers and school management, and customarily, only core curricular topics are prioritized.
B. **Show evidence of learning**: If the outcome is impressive it sustains interest and shows the results of the program thereby allowing scale and further growth.
C. **Confidence building**: A student's confidence is built if a practical, functional project can be produced.
D. **Real-world entrepreneurial application**: It supports the entrepreneurial element in the program which allows students who apply themselves to have opportunity to sell/generate revenue from the skills developed.
E. **Parental and teacher support:** Support from these stakeholders can be increased through showcasing an impressive result.
F. **Ease of monitoring trainer and program results**: If one school's learners consistently out-perform others in the final projects then we investigate, ask why/how and how came the results are so impressive, attempting to learn and improve through this, and vice versa.

Dual-benefit approach to learning:

An additional differentiation is that all content is directed toward the demographic and context of the learner. With this in mind, every engagement and implication is carefully crafted to have maximum impact on the thoughts, dreams and further development of the learners.

Examples of this:

Project 2: Creating a CV in Project 2: Few learners in government schools are taught about CV creation. These learners create, hard-coded online versions. Learners are required to create a digital, web-based CV. This means they learn CV creation, introspect and analyze regarding IT related career paths and learn how to present themselves better.

Project 3: Creating a simple webpage for an imaginary business: Learn about how to add value to a business and market a product.

Project 4: Create a complex website for a business. **Understanding the challenges of entrepreneurship**.

Project 5: Learn how to create a quotation function for a business application. **Understanding pricing models.**

Project 6: Practical Project: **Source information and images from a real business** and construct a complex, well designed, hard-coded website with pricing, information and feedback function. Learn how to work with real people, plan and create a digital product.

CodeJIKA Online Platform – Phase II Partial

Why it's important that the platform is developed?

A. Scale: An online platform can reach anyone, anywhere.
    a. Learners not enrolled in the hands-on program in existing schools can log-in.
    b. Learners from schools not a part of the program can participate and learn.
    c. Learners who dropout but want to continue later can.
    d. Adults and unemployed youth who are keen to learn may have full, free access if they apply.
    e. Primary school learners, who are ignored by our hand-on program, can begin accessing and learning the program.
B. Market creation:
    a. No other provider is solving the need for accessible and engaging code-learning content for African youth. (Refer to the curricular section to get a sense of why this is important.)
    b. No industry-leading online coding academy offers a web-based mobile version* (*That we know of). All learners are directed to a desktop/laptop.
    c. Our engagement, branding, on-boarding is directed to youth – This enables ownership and greater uptake.
C. No Desktop: Many youth and communities do not have access to desktops.
D. Zero-Rating of Data: Code for Change is a non-negotiable approach to mobile operator collaboration: Every mobile operator on the continent must offer free, zero-rated data to all their subscribers.
    a. Zero-rating of educational sites is becoming increasingly accepted.
    b. IMAGINE: This means that through an SMS sent link, any mobile device can immediately access the full, interactive, world-class coding classes and communities.
        i. Absolutely no apps, or downloads are necessary.

Content Strategy:

Our policy: In order to minimize the cost of content creation a three-pronged approach is adopted:

A. Leverage off content partners,
B. Adapt to localized approaches,
C. Custom-made material.

If content is not available or cannot be applied success fully to the application then custom content is created.

5. LEARNERS EQUIPPED WITH WEB DEVELOPMENT SKILLS

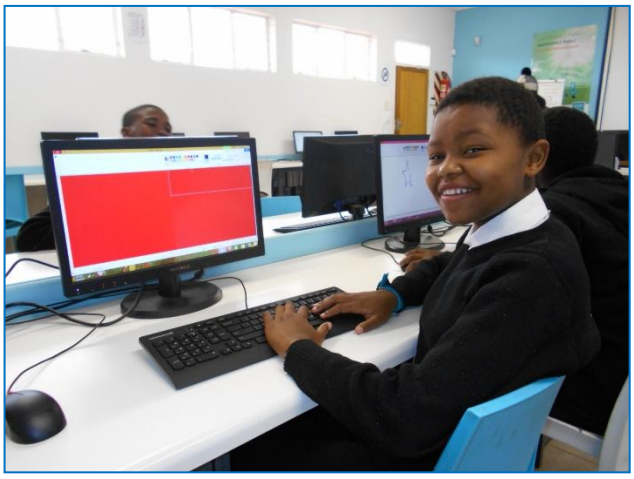
The main outcome of the CodeJika program is that school-leavers are equipped with practical web development skills that can be used in the informal digital economy through providing value to local manufacturers and SMEs.

The program looks for sustainable, on-going and impactful learning results through:

1. **In-Class Learning**: Low-tech simplified, project outcomes for class-based learning.
2. **Online Learning:** Teen-focused, web-based mobile learning environment (www.codejika.com)

In-School Coding Outcomes

Students learn



Project 1: Make a simple Landing Page

Project 2: Make a CV using CSS and emojies.

Project 3: Simple business website

--Certificate --

Project 4: In Dev – Intermediate CSS

Project 5: Basic Javascript

Project 6: HTML Putting it together – Basic business website.

-- Final Project --

Students participate

In the final project where they must each make website for local business, school/assoc.

Students evolve and talent emerges

Through Inter-School Competitions, Intra School Competitions, Practical Workshops – create an Entrepreneurial Web development project.

Mentoring and skills development

of ICT Educator in each partner school

Key partnership with schools

Increase in the participation of **girls and young women**

in Computer Science and work readiness knowledge, while empowering underserved communities

Increase in youth employment

and available skills on the job market. Youth demonstrate a specific skill sets, resulting in them becoming sought after employees.

Sustainability:

The ultimate goal of the program is:

"A systemic change in digital education in the country in high schools over 10 years."

The sustainability of the CodeJika program is grounded in an implementation approach which emphasizes building national and local partnership, developing local capacity, and encouraging ownership.

The CodeJika program aims to develop key partnerships with schools, districts, NGOs, Government Agencies or Gov Funded Projects for Youth and other forward-thinking implementing partners to provide them with the skills to empower their communities. Engaging with implementing partners at multiple levels ensures that solutions are locally owned and led, increasing the likelihood that such interventions will be more effective and continue after project has ended.

Be Part of the Solution

Let's build better communities, schools and cities by bringing innovation & technology to every child and young person.

Open possibilities and be the catalyst youth dreaming and building a better future.

Let's do great things!

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