Cryptocurrency Based Computational Power for Education Programmes

Challenge Category: SDG4 - 'Quality Education'

Our idea has successfully incorporated all the seven outcome targets under Sustainable Development Goal for Quality Education (SDG 4) by the effective implementation of an efficient learning environment.

Team - 'YoungMinds'

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Problem Definition

In this digital age, education without the computer and internet connectivity seems like a dystopian reality. Unfortunately, this is the harsh reality that plaques the underprivileged masses. Laptops, tablets and devices made available by government and international programmes lack the high-end hardware necessary for higher learning and greater knowledge. Furthermore, lack of funds or its mismanagement lead to loss of beneficiaries and an overall loss to society.

Abstract

Our idea is to develop a blockchain based cryptocurrency system, which allows users, globally, to lend their computational power for those who need it.

Technology – Oracle Blockchain, Oracle Analytics Cloud

Objectives

- Use of cost-efficient computer devices
- Management of donations using blockchain
- Increased accessibility and efficient use of computational power
- Education for sustainable development
- Improved connectivity and learning environment for all
- Relevant skill development for decent work

Methodology

- Donations from benefactors are stored in blockchain as cryptocurrency
- Provide and use laptops with minimalistic computation for education

- When excess computational power is needed, place request to peer network
- Blockchain provides interconnection for distributed computing
- Users interested in sharing computational power earns cryptocurrency
- If needed, philanthropic users can donate their earned cryptocurrency
- All transactions and community efforts are securely stored in blockchain

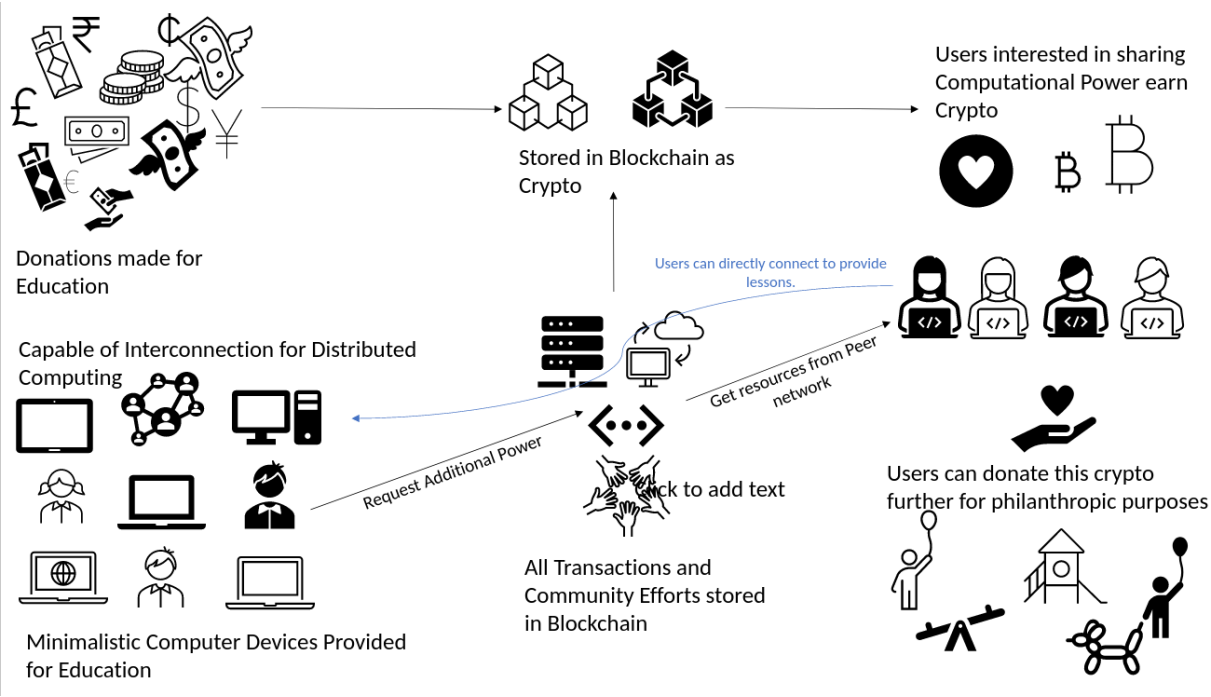

Figure 1: Cryptocurrency based Education System

Benefits

Universal primary and secondary education
Gender equality and inclusion in the education sector
Equal success to technical/ vocational and higher education

Community-centric
Collaborative learning

Enhanced security for transactions
Prevent fraud & unauthorised activity

Promotes sustainable economic growth

Reduce E-waste

Increased transparency

Increase and improve connectivity

Cryptocurrency value immune to fluctuation
(Value attached to real-world asset)

Skill development for decent work

Bridges the digital divide
Laptops provided will be highly upgradable

Efficient use of existing computational resources

Contribution of System to SDG 4 Outputs

1. Universal primary and secondary education
    - Provide safe, non-violent, inclusive and effective learning environment
    - Cost effectiveness ensure global access to all communities
2. Early childhood development and universal pre-primary education
    - Promotes access to STEM educational resources at the school level
3. Equal success to technical/ vocational and higher education
    - Increased accessibility of High-end Computing
    - Efficient use of computational power and resources
4. Relevant skill development for decent work
    - Encourages collaboration with the global community
    - Access to resources for continuous learning and personal development
5. Gender equality and inclusion

    All people, irrespective of sex, age, race, colour, ethnicity, language, religion, political or other opinion, national or social origin, property or birth, as well as persons with disabilities, migrants, indigenous peoples, and children and youth, especially those in vulnerable situations or other status, have access to inclusive, equitable quality education and lifelong learning opportunities
6. Universal Youth Literacy
    - Ensures young people and adults across the world have the opportunity to achieve proficiency levels in numeracy skills
7. Education for sustainable development and global citizenship
    - Reduce E-waste formed as a consequence of digital learning
    - Enhanced security by prevention of unauthorised activity