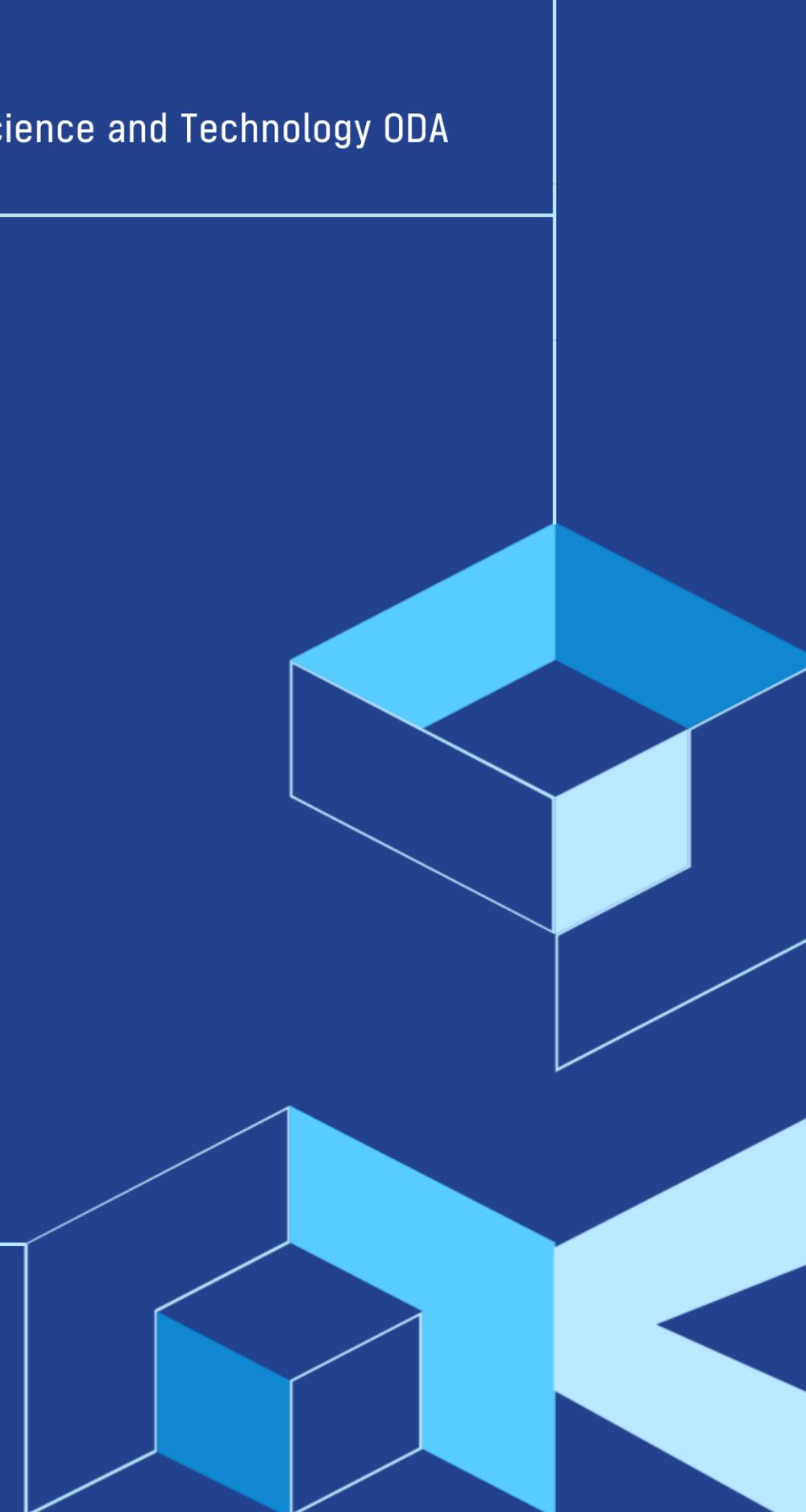# WAINBOX

The tool that performs various educational roles
in underdeveloped countries

JinHwa Jung l Future & Hope

WAINBOX
Worldwide Academy in a Box

l glhwainbox@gmail.com

All-in-one equipment

for eLearning
in educational underprivileged areas

Development Background

1 Interconnected
(HW, SW, Content, OS)

2 Easy-to-use System

3 Support for Teacher and Staff

Supporting HW, SW, OS, Content separately

Influenced by external factors (Blackout, Disconnect, etc)

Lack of content on multilingual multiculturalism

Low digital literacy

Difficult to use

Difficult to maintain

Lack of quality teachers and frequent change of teachers

Takes a long period to become a teacher

Difficulty in creating digital content

Hardware
For eLearning

Access Google Data Center(with electricity and Internet infra)

Micro Edge Giga eLearning Server(Decentralization, Everywhere, No infra)

Hardware Features

01
Low Electricity

· Minimum
5V 3A Power Bank

· Compatible with
mobile peripherals

02
High-Speed Internet

· Equipment with 5G support

· High-speed Hybrid
network(WAN, LAN)

03
Expansion

· Upgrade and Connect
to External Devices

· Number of
Concurrent Users

Specifications

· **Small Size : 12cm x 12cm x 8cm**
· Cooling Fan x 2
· 870g

· **1TB M.2** SSD

· NCR18650B 3.7V 3400 mA/h 18650 Lithium **Rechargeable Battery x 2**
· Maximum Power Consumption : **~ 25Wh**
· **UPS**(Uninterruptible Power Supply)
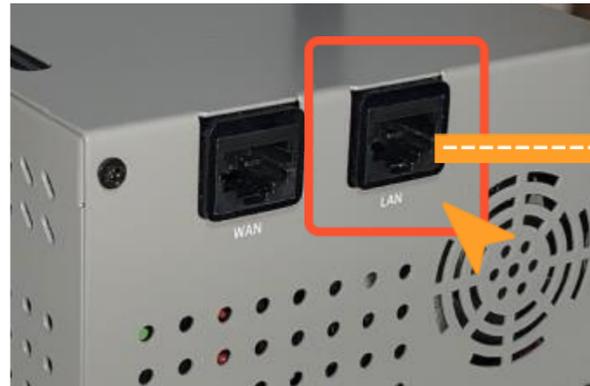· **5V DC via USB-C** and **DC 5.5 x 2.5mm** connector (minimum 3A*)

· **High speed AC750 Wi-Fi: 433Mbps(5G) +300Mbps(2.4G)**
· **Two gigabit ports, 1WAN, 1LAN : Hybrid Net**
· Limit the number of **Concurrent users : 100+ (changeable)**

· Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz
· 4GB LPDDR4-3200 SDRAM

Using LAN port(Intranet, Expansion)

Distributed System

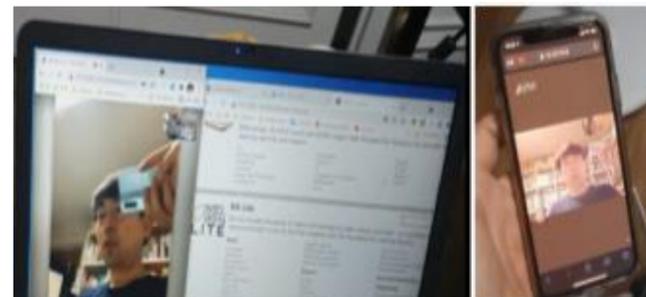### Additional Storage

NAS (Network Attached Storage)

http://10.10.10.8

Communication

Jitsi Meet Video Class

http://10.10.10.9

Example of using video class/call
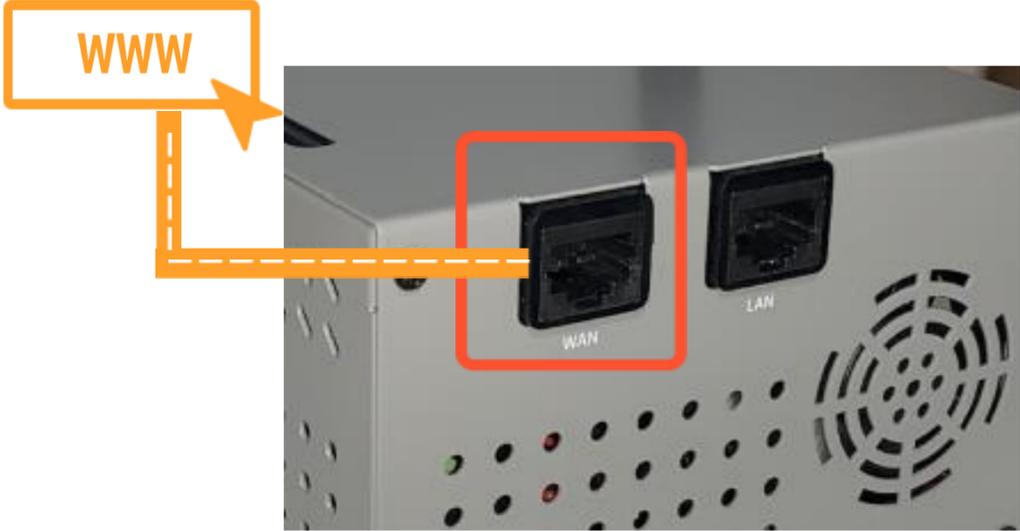
Intranet NAS Storage

WAINBOX

Intranet Video class

Using WAN port(External network connection, Upgrade)
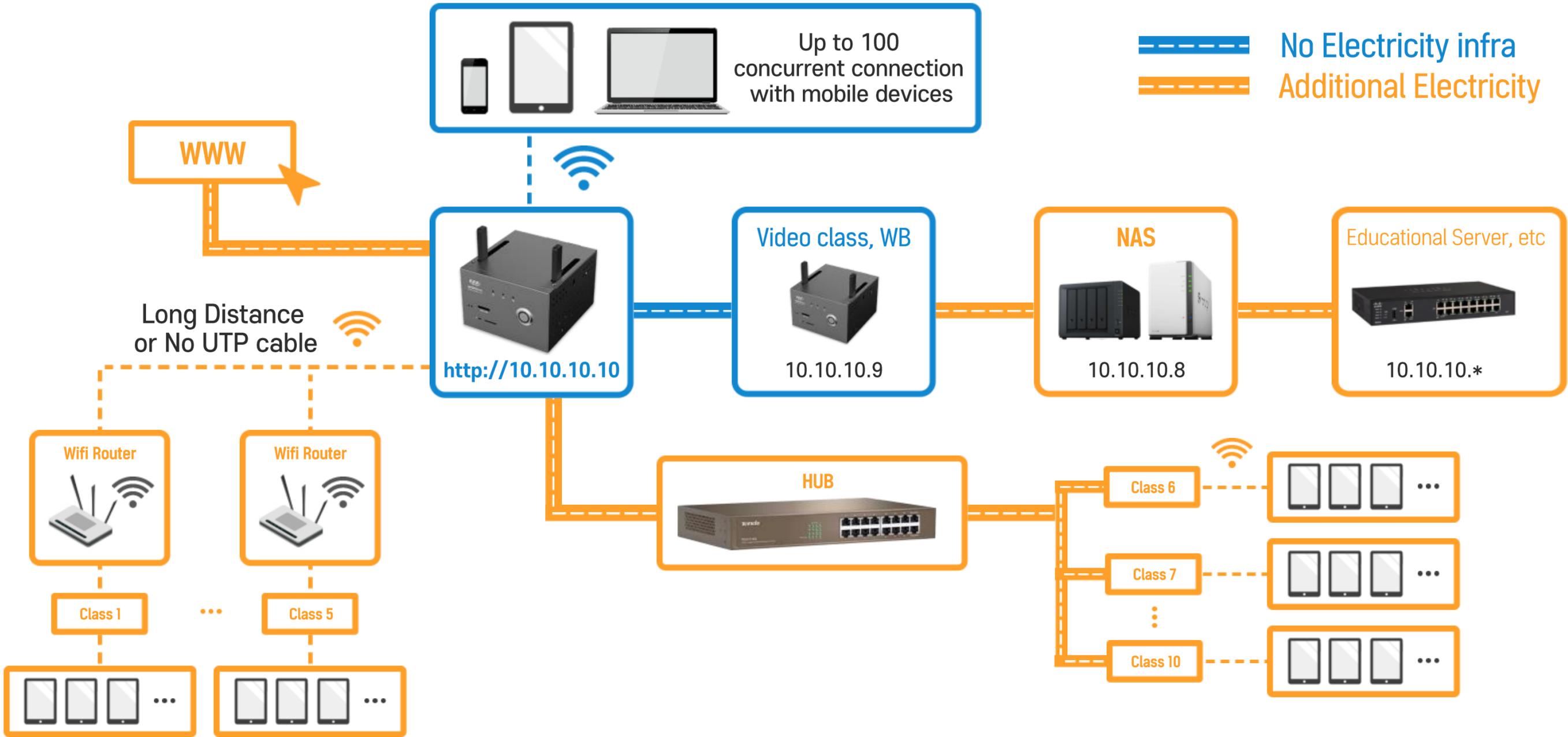
Lan cable Or Tethering
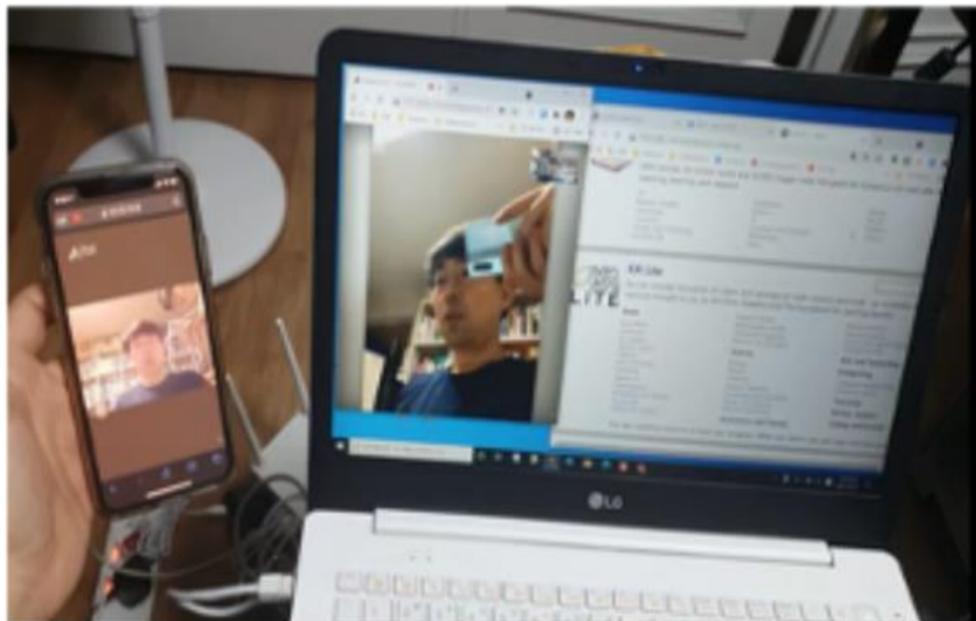
WWW

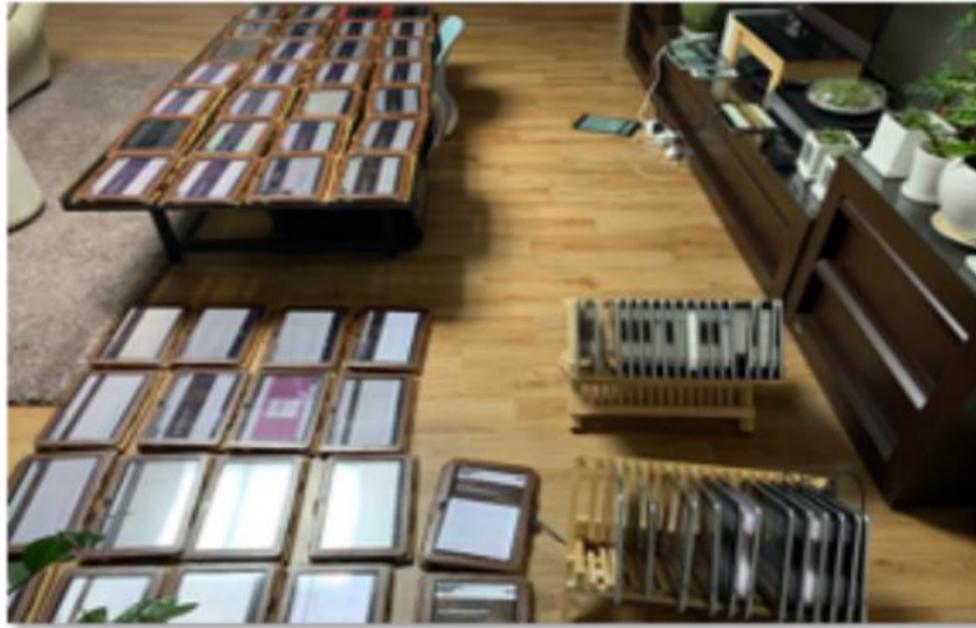WAINBOX Platform

Translate to multiple languages

Google Translate

Local components availability

Up to 100 concurrent connection with mobile devices

No Electricity infra
Additional Electricity

WWW

Long Distance or No UTP cable

http://10.10.10.10

Video class, WB
10.10.10.9

NAS
10.10.10.8

Educational Server, etc
10.10.10.*

Wifi Router

Wifi Router

Class 1

...

Class 5

HUB

Class 6

Class 7

Class 10

...

5V Portable Solar Panel, Power Bank and Video Class

EduVillage

IF Long Range Router(2km)
+ Solar System
+ Net mesh network → EduVillage
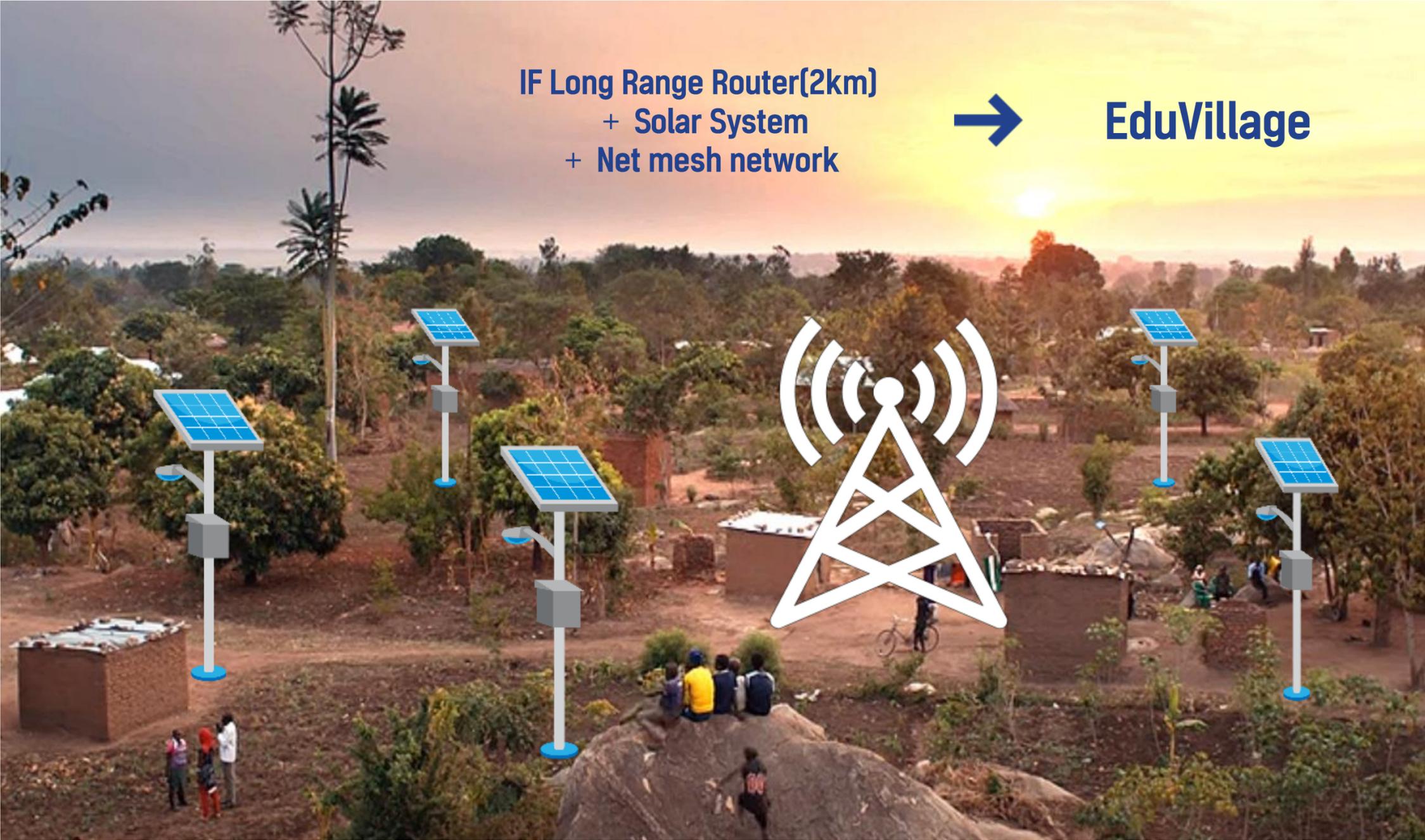
EduVillage(in refugee camp)

IF Long Range Router(2km)
+ Solar System
+ Net mesh network → EduVillage
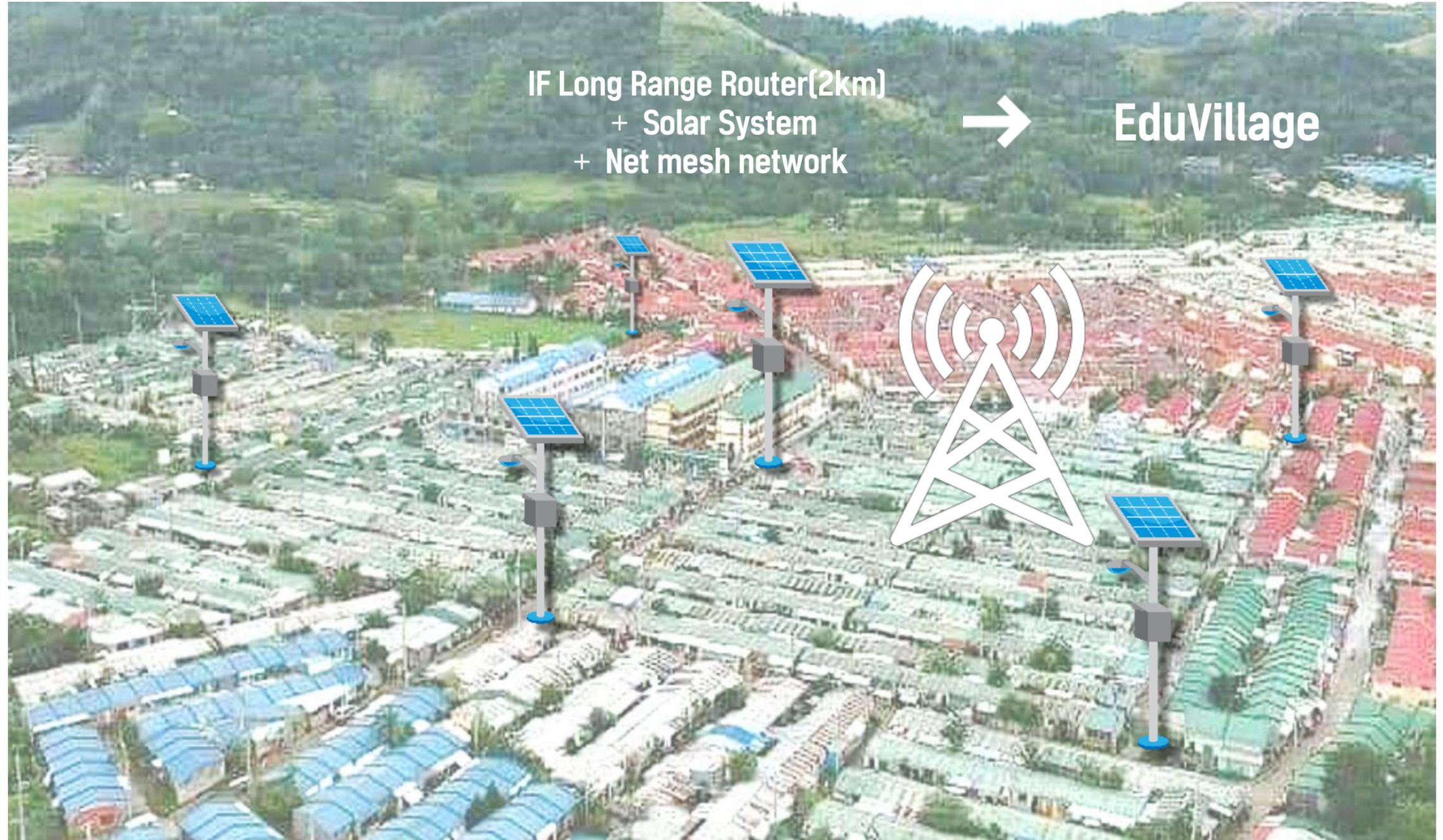
Software
and Content
For eLearning

WAINBOX
Worldwide Academy in a Box

Educational Digital Content

Difficulty for Teachers to produce content

Teacher

Network-based Hyper-connectivity education

Student

Teachers are **users** and **curators**, **not** content **creators**.
The participation of **a variety of external experts**

Collective Intelligence and User Experience

01 Software
- Open Source Software(OSS)
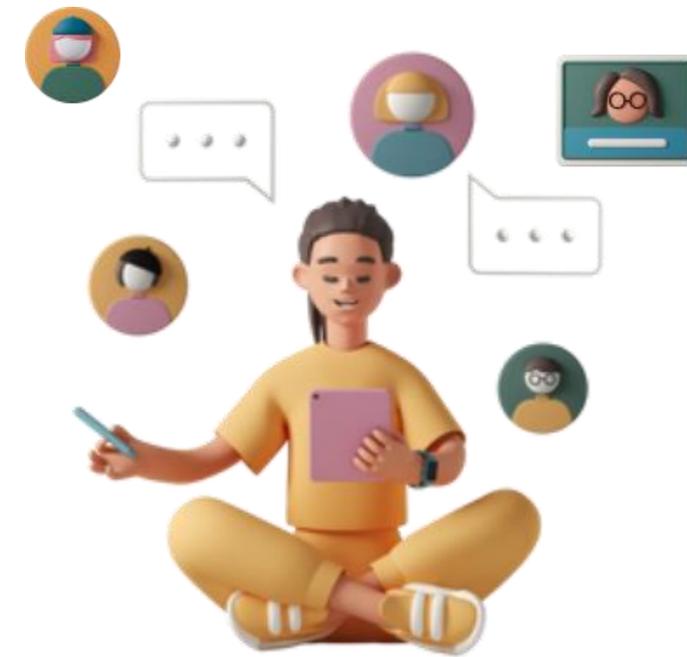- Easy to use

02 Content
- Open Educational Resources(OER)
- Uploading my content
- **Continuous Multilingual Content Supply**
- Standardize for sharing and collaboration(Edublock)

03 Curriculums
- Open Course Ware(OCW)
- **Teacher's role**
- Training hyper-connectivity networks

All-in-one eLearning Server

Library

Since 2012 KIWIX

We can make highly compressed copies of entire we bsites that each fit into a single (.zim) file. Zim files are small enough that they can be stored on users' mobil e phones, computers or small, inexpensive Hotspot.

Since 2009 RACHEL

RACHEL(Remote Area Community Hotspot f or Education and Learning) is a portable, bat tery-powered, device that contains copies of educational websites in offline format

Storage

Since 2010 ownCloud

ownCloud is an open-source file sync, share and cont ent collaboration software that lets teams work on dat a easily from anywhere, on any device

LMS(Learning Management System)

Kolibri Since 2012

Kolibri is an adaptable set of open solutions specially developed to sup port learning for the half of the world without Internet access

Moodle Since 2002

Moodle is a learning platform designed to provide educat ors administrators and learners with a single robust, secu re and integrated system to create personalized learning environments

Khan Academy Since 2006

Khan Academy offers practice exercises, instruc tional videos, and a personalized learning dashb oard that empower learners to study at their ow n pace in and outside of the classroom

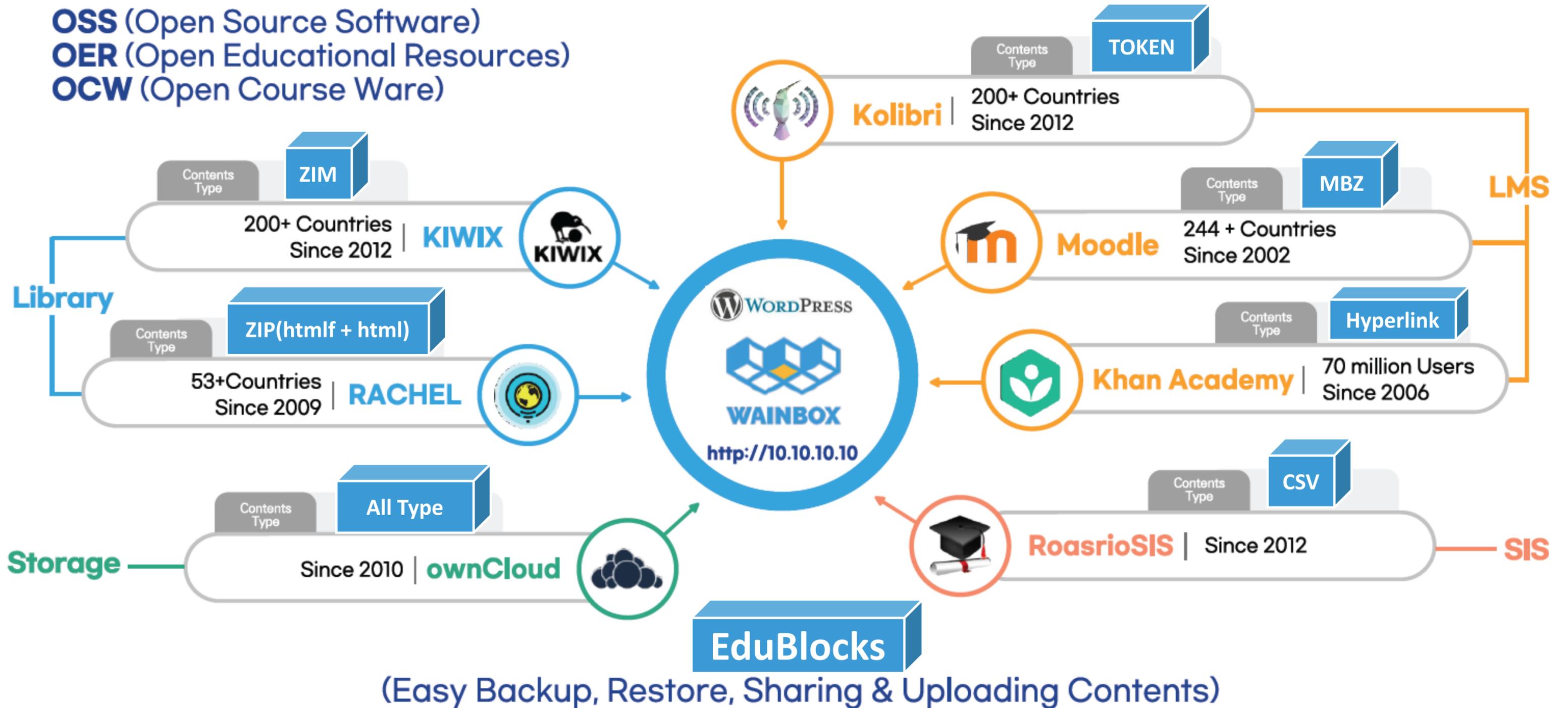## School Information System

RoasrioSIS Since 2012

RosarioSIS features students demographics, grades, schedulin g, attendance, student billing, discipline & food service modules for school management, in one web-application

WAINBOX
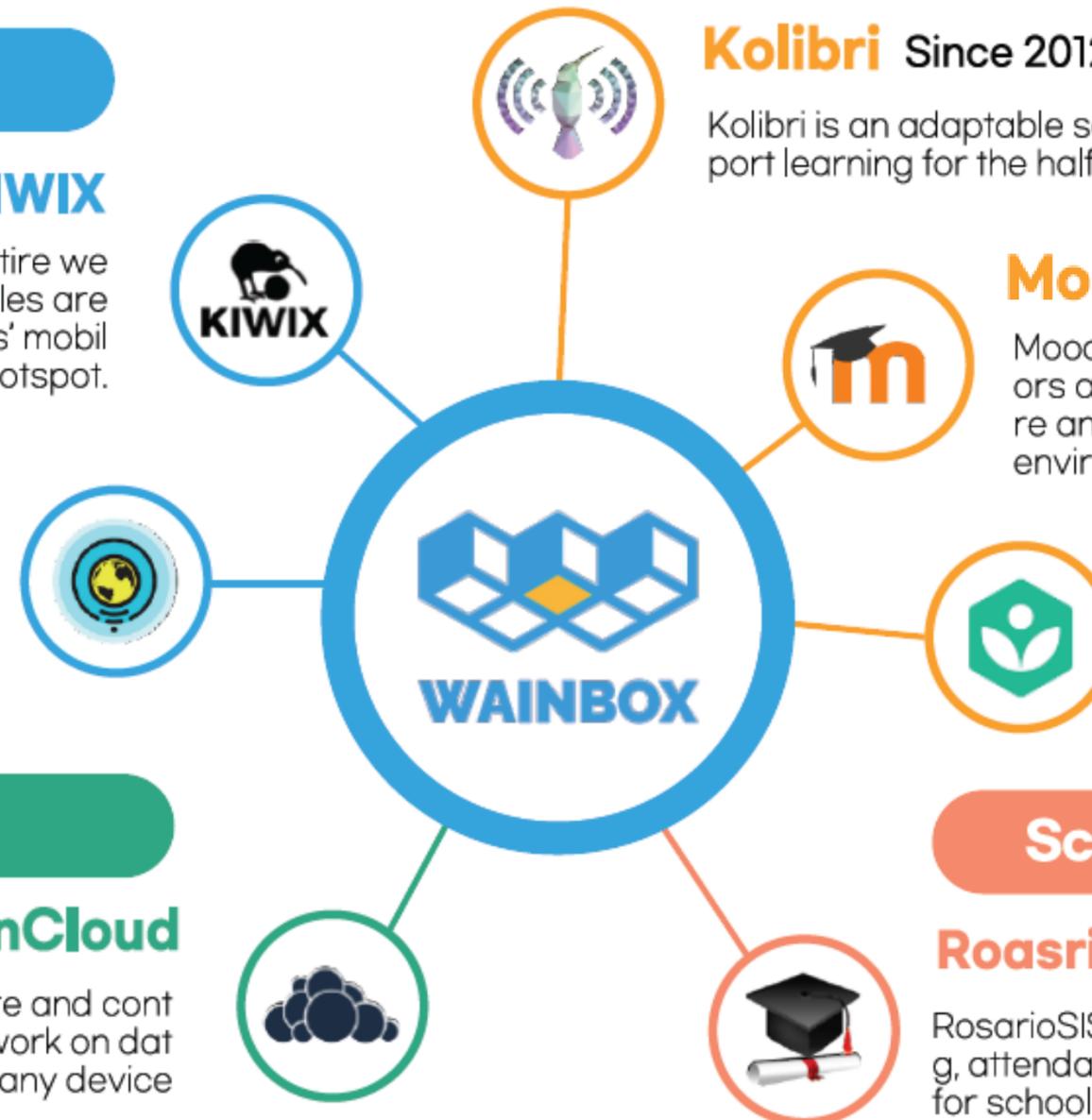
Academy eLearning Components(OSS, OER, OCW)

All-in-one eLearning integrated Platform

OSS (Open Source Software)
OER (Open Educational Resources)
OCW (Open Course Ware)

TOKEN

Contents Type

Kolibri | 200+ Countries Since 2012

ZIM

Contents Type

200+ Countries Since 2012 | **KIWIX**

MBZ

Contents Type

Moodle 244 + Countries Since 2002

ZIP(htmlf + html)

Contents Type

53+Countries Since 2009 | **RACHEL**

Library

WORDPRESS

WAINBOX

http://10.10.10.10

Hyperlink

Contents Type

Khan Academy | 70 million Users Since 2006

LMS

All Type

Contents Type

Since 2010 | **ownCloud**

Storage

CSV

Contents Type

RoasrioSIS | Since 2012

SIS

EduBlocks

(Easy Backup, Restore, Sharing & Uploading Contents)

Integrated Severs and Process

1 **Conneting to WB(Wifi)**

2 **Using a Web Browser**

http://10.10.10.10

WORDPRESS
Course Builder
Integrated Search
Category Settings
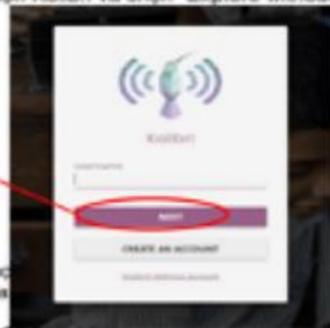
Internal Permalink

3 **Integrated Servers**

Sharing EduBlock

Educational materials **made in a Vietnamese mountain village sharing it with Malaysian children** as 'Edublock'.

HƯỚNG DẪN SỬ DỤNG

WAINBOX
1. Kết nối dây nguồn
2. Bật/ Tắt Wainbox
   a. **Bật:** ấn vào nút on/ off. Đợi khoảng 1 phút sẽ thấy mạng Wainbox_00 xuất hiện.
   b. **Tắt:** ấn giữ vào nút on/off khoảng 20 giây đến khi màu xanh biến mất.
   c. **Khởi động lại:** trong trường hợp không thấy mạng Wainbox_00 xuất hiện, cần khởi động lại máy bằng cách tắt đi rồi bật lại.
3. Kết nối với Wainbox
   a. Tìm trong danh sách wifi tên Wainbox_00
   b. Kết nối với Wainbox_00 wifi (mật khẩu: wainbox4all)
   c. Vào Google và đánh 10.10.10.10
4. Chọn Kolibri và chọn "Explore without account"

5. Ch... ...nounciation, Gra... ...ẾNG ANH

Cấp độ căn bản:
❖ Trong Kolibri:
   ▪ English Phonetics à Học phát âm
   ▪ Basic English Grammar for Beginners 1, 2, 3 à Học ngữ pháp
   ▪ Nal'ibali (English) à Tài liệu nghe và đọc
   ▪ Blockly Games à Trò chơi để học từ vựng
   ▪ Mother Goose à Dạy tiếng Anh cho thiếu nhi

❖ Trong Rachel: Cat and Dog Books, Mustard Seed Books à Tài liệu đọc
Cấp độ trung cấp:
Trong Kolibri:
   ▪ Espresso English, Free English with Hello Channel à nhiều kỹ năng
   ▪ Ted-Ed lesson à Video để luyện nghe
Cấp độ cao cấp
Trong Kolibri: HP LIFE – Courses (English) à Nhiều môn học khác nhau

TOKEN
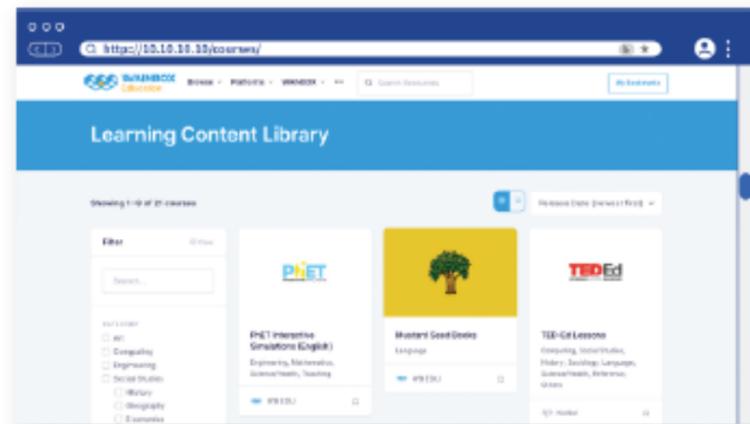
#1. Creating and using Edublock(Curator)

📎 **Internal Permalink**

Save as 'PDF'
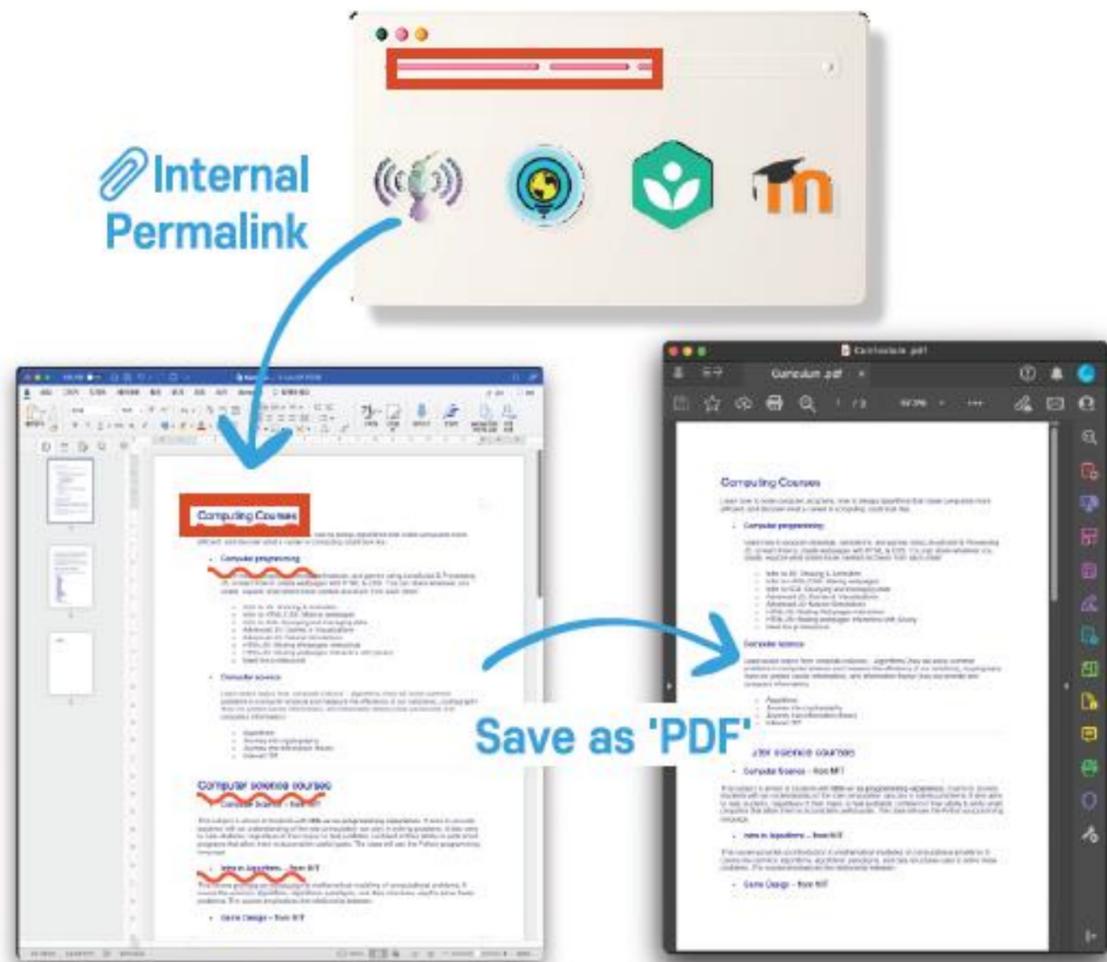
MS Word Document

PDF

1 Create
a hyperlinked document with MS Word

2 Send
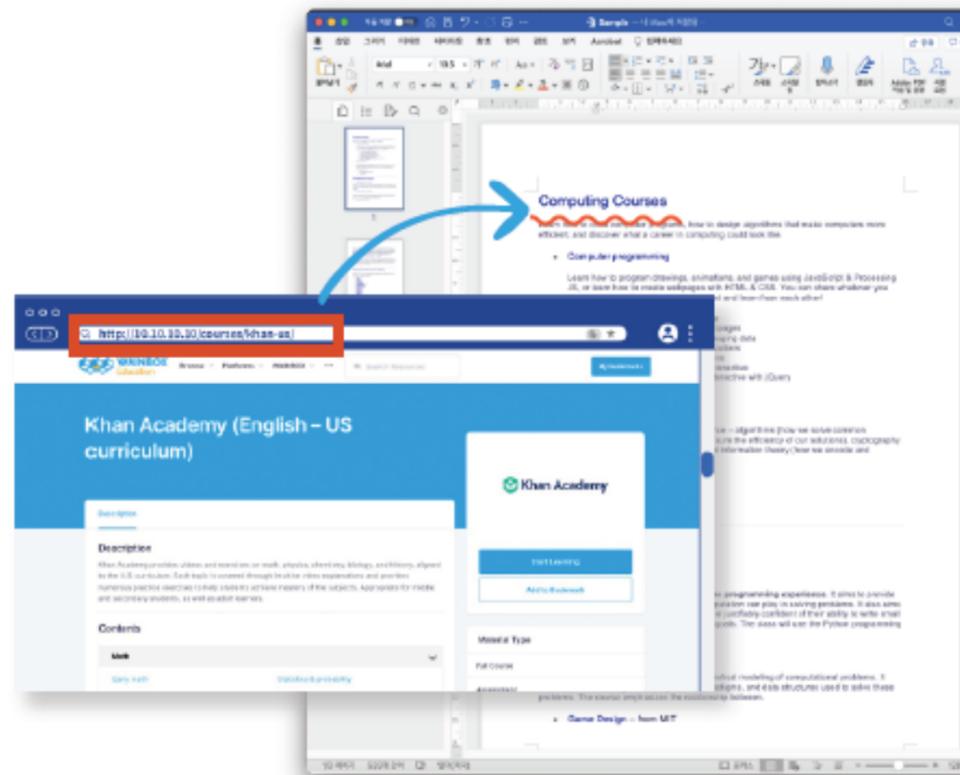to Students

Clickable PDF

Student

3 Read & Click
hyperlinks to open the contents on WAINBOX

#2. Creating Edublock(Uploading WB)

A range of educational content
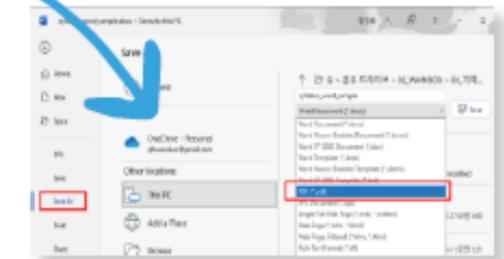**produced by academic experts**
embedded in WAINBOX

① **Open MS Word**

③ **Save As 'html' or 'PDF' from MS Word**

Upload to WAINBOX

② **Create a curriculum index using WAINBOX's internal permalink for hyperlinks(clickable).**

⑤ **View on WAINBOX**

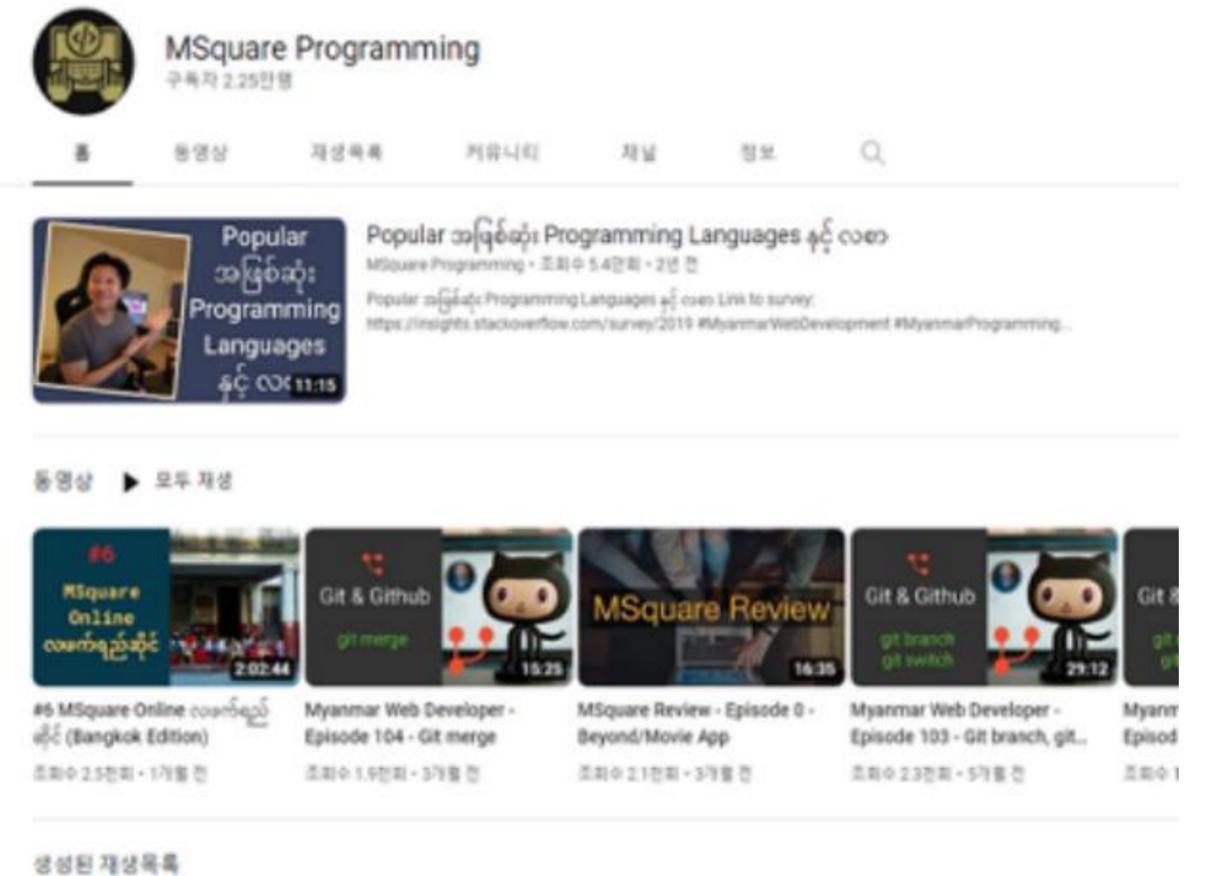Making **a hyperlinked curriculum** index
as **Edublock with MS Word**

Continuous Supply of Multilingual Content

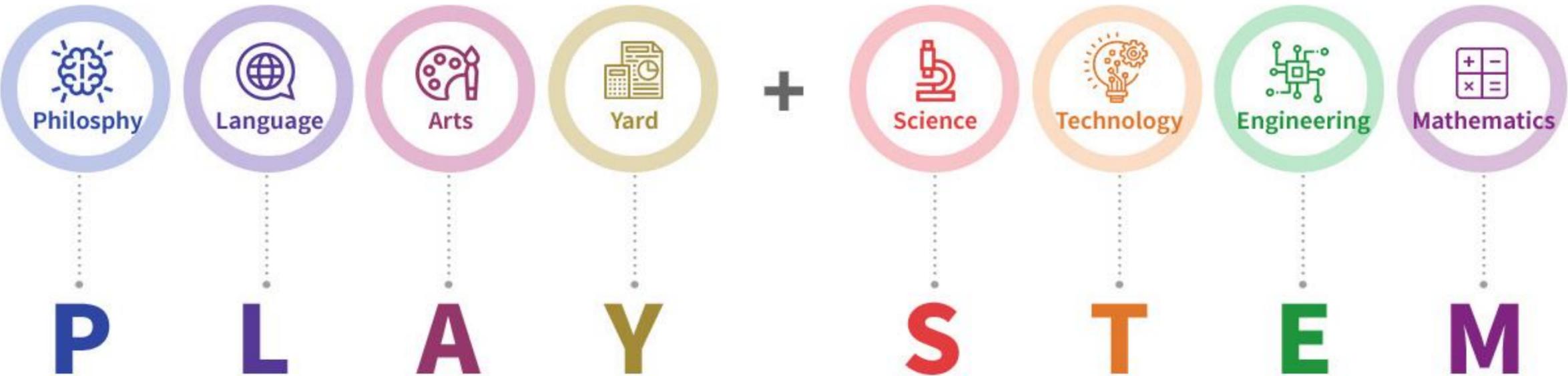**Textbooks** from the Myanmar
Karen Education Department(KED)
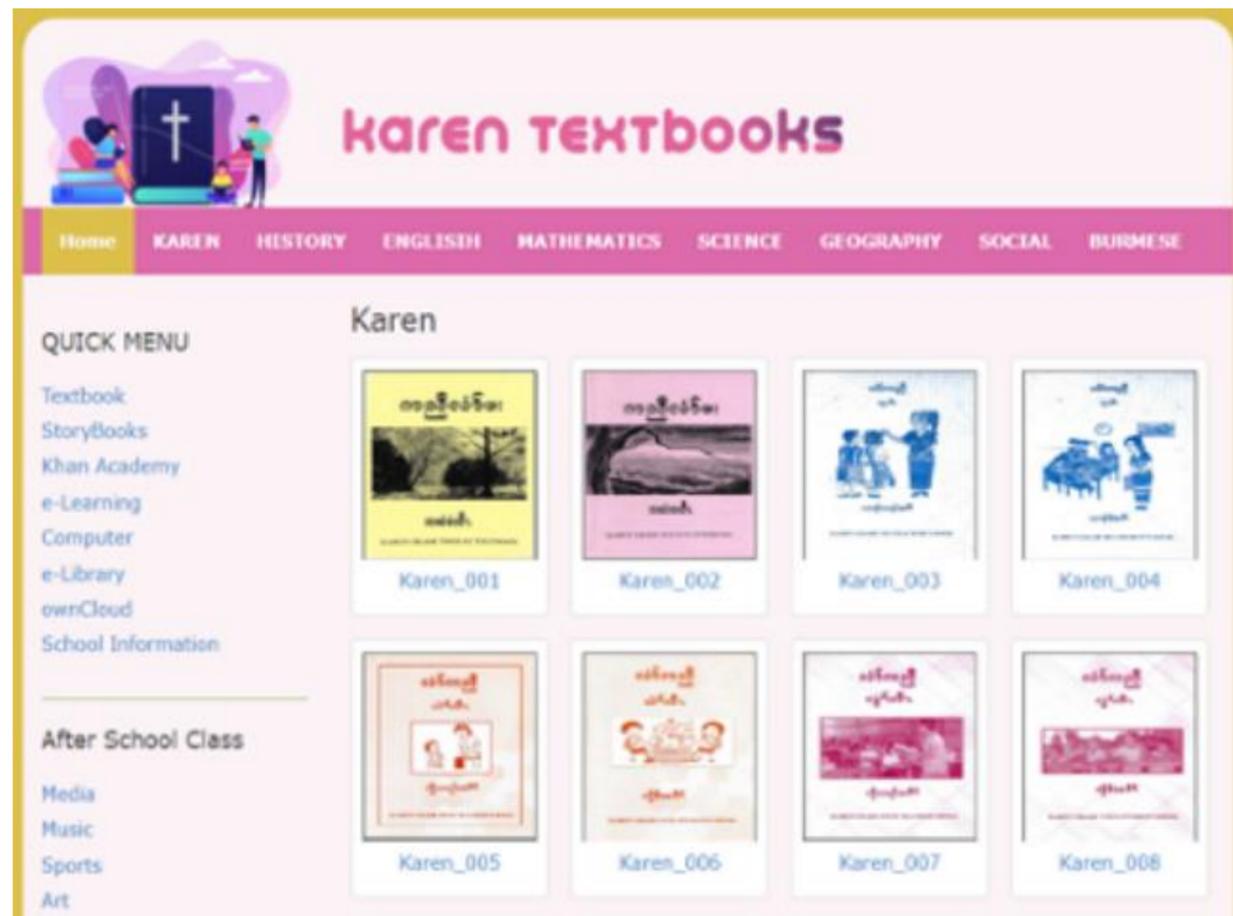
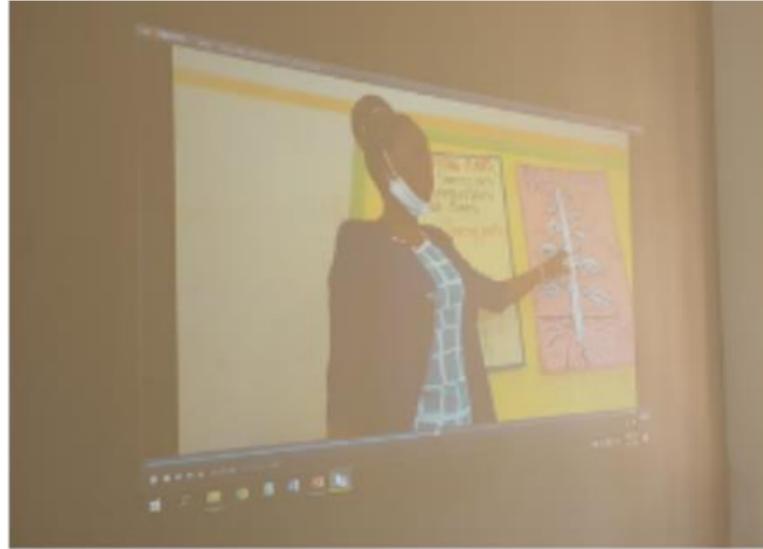**YouTube** contents
by a programmer From Myanmar

Standardizing & Curating Edublocks

for Sharing and Collaboration

Teaching Sessions in Uganda

Cambodia and Laos

Malawi, South Africa, Ethiopia, Egypt, Philippine, etc.(19+ countries)

**Everyone
Everywhere
Any environment
High-speed Network
One eLearning platform**

Thank You

WAINBOX
Worldwide Academy in a Box

l glhwainbox@gmail.com