NIPTICT

Cambodia SchoolNet
Social Trial & Social Proof

Toward Rural Connectivity by School Application & Education Contents

- Education System by Cambodia, to Cambodia, of Cambodia -

20/Feb/2020 Draft Version
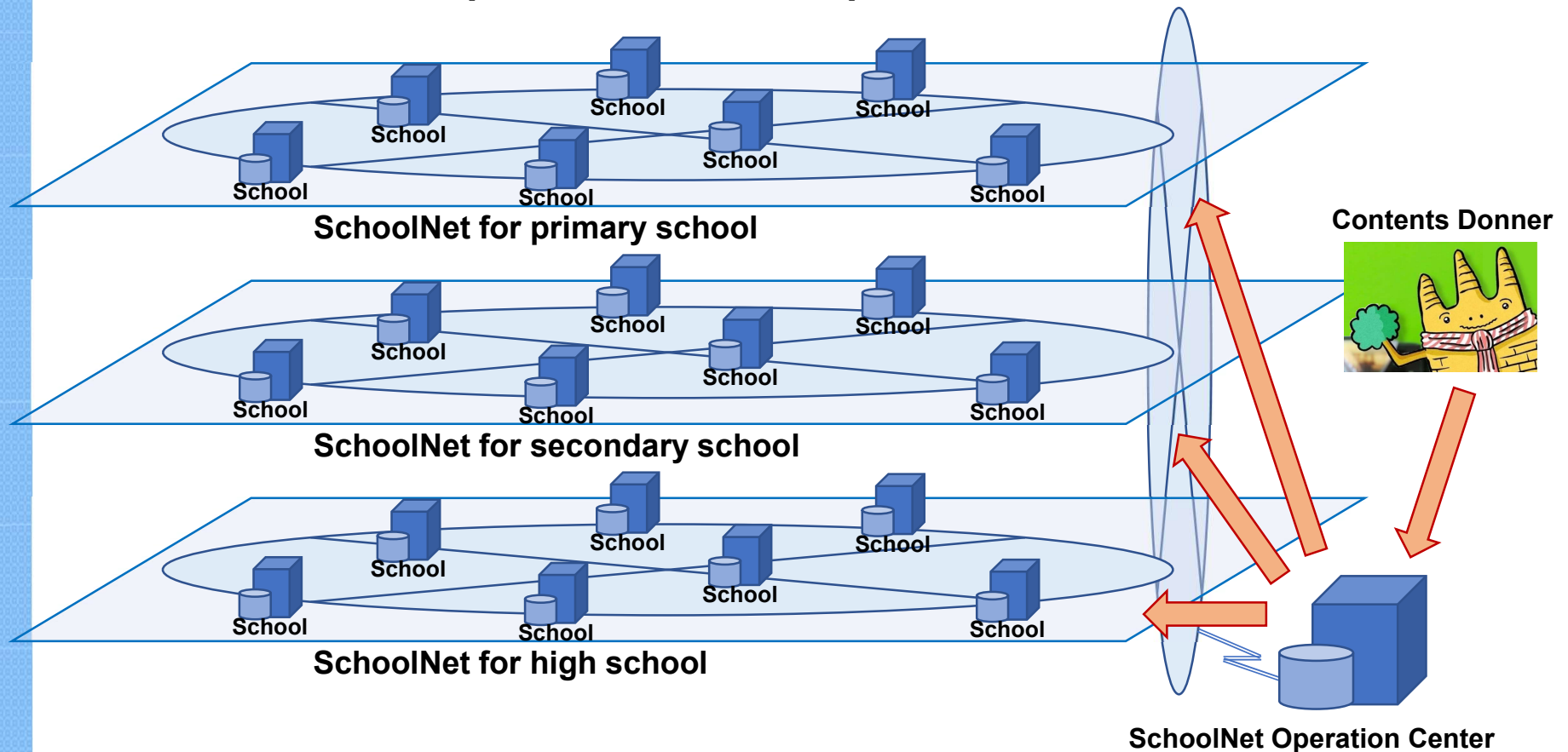
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NIPTICT performed ASEAN IVO Project as the leader for 4 years: Cambodia NerveNet Field Testing (Operation Management and Content Development to Promote Connectedness of Cambodia Rural Area)

And NIPTICT come up to the conclusion to focus to smart Education to rural areas and its concept is named to "SchoolNet".
This is NIPTICT out come from 4 years Social Trial activity.

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SchoolNet Concept:
①　**Connectivity among schools**
　　- Teachers, Students can communicate with other schools.
②　**Connectivity with education contents donners and supporters**
　　- Contents donner can distribute their contents to schools.
③　**Single operation and maintenance**
　　- NIPTICT operate SchoolNet Operation Center with MOEYS

SchoolNet for primary school

SchoolNet for secondary school

SchoolNet for high school

Contents Donner

SchoolNet Operation Center

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List of connected school to School Net

	Primary Schools	Province	NGO/Project	Remark
1	Cheung Prey Primary School	Kanpong Cham	IVO Pj	
2	Samraong Saen Primary School	Kanpong Chhnang	IVO Pj	
3	Plov Touk	Kanpong Chhnang	IVO Pj	
4	Sompoung Primary school	Prey Veng	CEAF	
5	Prey Torb Primary school	Prey Veng	CEAF	

	Secondary Schools	Province	NGO/Project	Remark
1	Dar Secondary School	Kanpong Chhnang	IVO Pj	
2	Cambodia Japan friendship Middle school	Prey Veng	CEAF	
3	Promul Propm Secondary school	Prey Veng	CEAF	
4	Banteay Chakkrei Secondary school	Prey Veng	CEAF	
5	Protheat Secondary school	Prey Veng	CEAF	

	High schools	Province	NGO/Project	Remark
1	Kampunglaeng high school	Kanpong Chhnang	IVO Pj	
2	Cambodia Japan friendship High school	Prey Veng	CEAF	
3	Hun Sen Takok High school	Prey Veng	CEAF	
4	Promul Propm High school	Prey Veng	CEAF	

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Map of connected school to School Net

★2:Kampunglaeng high school
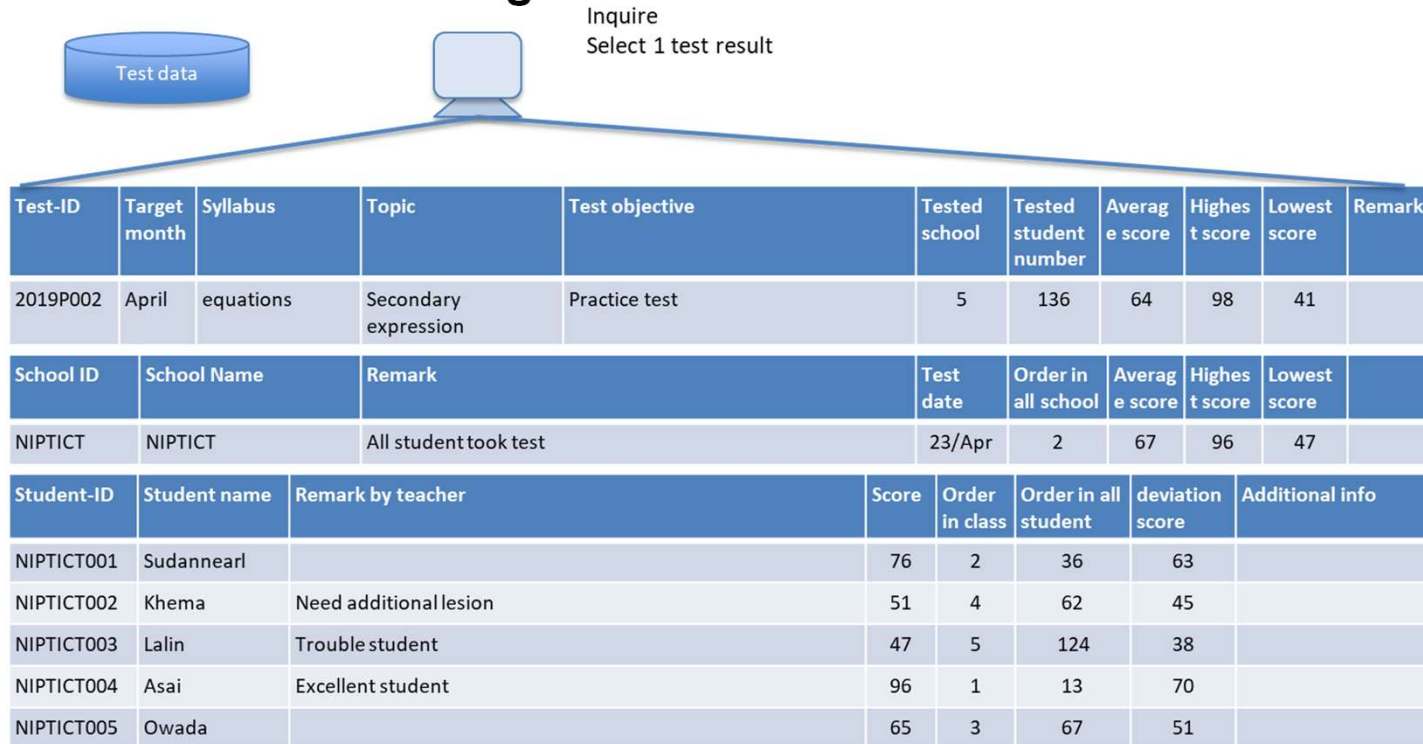★3:Dar Secondary School
★4:Samraong Saen Primary School
★5:Plov Touk

★1:Cheung Prey Primary School

★6:Cambodia Japan friendship
   Middle & High school
★7:Hun Sen Takok High school
★8:Promul Propm Secondary & High school
★9:Banteay Chakkrei Secondary school
★10:Sompoung Primary school
★11:Prey Torb Primary school
★12:Protheat Secondary school

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Application 1 : Test Management Prototype

Function : Register curriculum and register Test to curriculum. When teacher select and test and put test result by student, average, top/low score etc is calculate automatically and show the ranking of school.
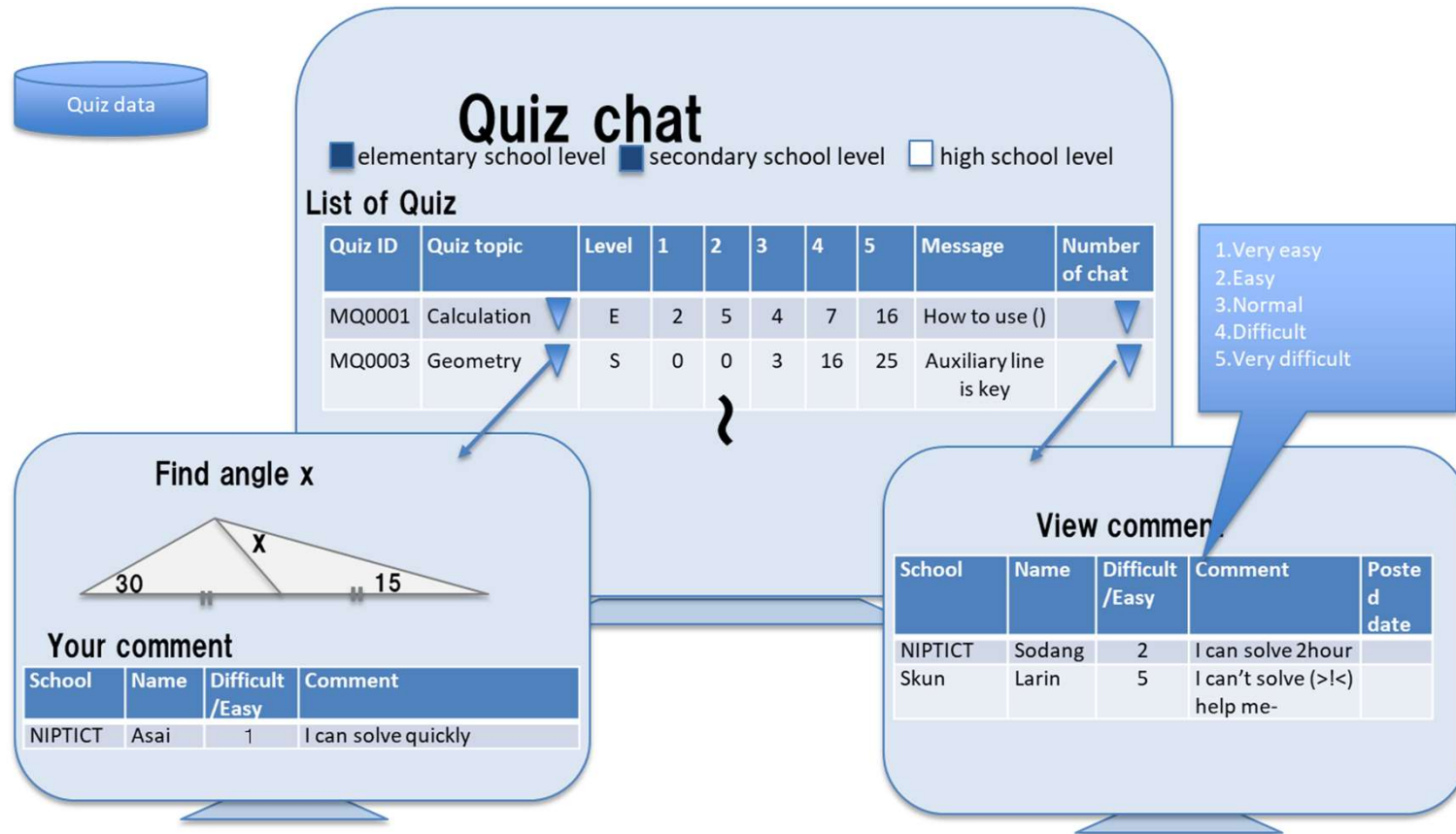
Test data

Inquire
Select 1 test result

Test-ID	Target month	Syllabus	Topic	Test objective	Tested school	Tested student number	Average score	Highest score	Lowest score	Remark
2019P002	April	equations	Secondary expression	Practice test	5	136	64	98	41	

School ID	School Name	Remark		Test date	Order in all school	Average score	Highest score	Lowest score	
NIPTICT	NIPTICT	All student took test		23/Apr	2	67	96	47	

Student-ID	Student name	Remark by teacher	Score	Order in class	Order in all student	deviation score	Additional info
NIPTICT001	Sudannearl		76	2	36	63	
NIPTICT002	Khema	Need additional lesion	51	4	62	45	
NIPTICT003	Lalin	Trouble student	47	5	124	38	
NIPTICT004	Asai	Excellent student	96	1	13	70	
NIPTICT005	Owada		65	3	67	51	

Student individual score is not synchronized by NerveNet and it can refer only from each school. Only score data is shared among school.

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Application 2 : Quiz chat prototype

Function : A bit difficult quiz will be shown, and student will put comment what they are try and think. And exchange or communication with another schools.
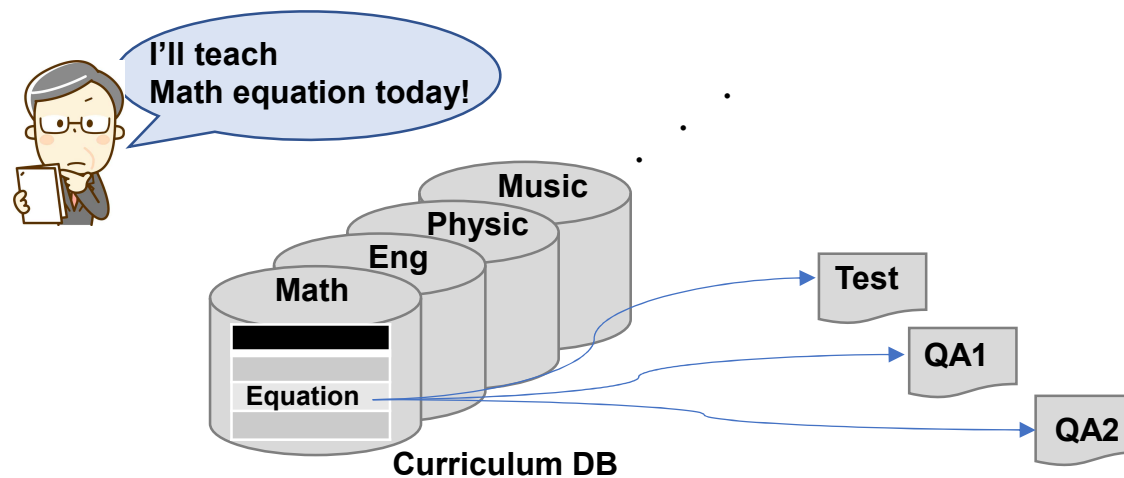
Quiz data

Quiz chat

■ elementary school level　■ secondary school level　□ high school level

List of Quiz

Quiz ID	Quiz topic	Level	1	2	3	4	5	Message	Number of chat
MQ0001	Calculation	E	2	5	4	7	16	How to use ()	
MQ0003	Geometry	S	0	0	3	16	25	Auxiliary line is key	

1.Very easy
2.Easy
3.Normal
4.Difficult
5.Very difficult

Find angle x

x
30　　　15

Your comment

School	Name	Difficult /Easy	Comment
NIPTICT	Asai	1	I can solve quickly

View comment

School	Name	Difficult /Easy	Comment	Posted date
NIPTICT	Sodang	2	I can solve 2hour	
Skun	Larin	5	I can't solve (>!<) help me-	

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Importance is Contents and its management Idea

There are many contents donners and provide education contents.
In order to utilize the contents, it's important :
- Find contents easily what teachers are requiring
- Retrieve contents quickly

I'll teach
Math equation today!

Music
Physic
Eng
Math

Equation

Curriculum DB

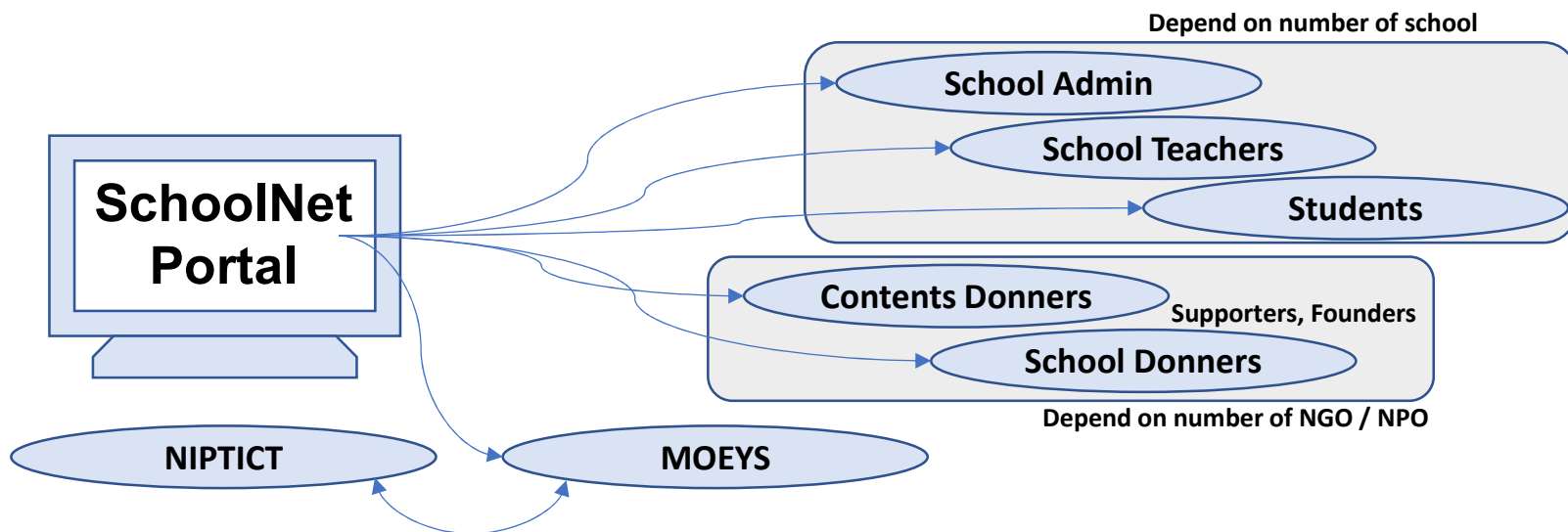Test

QA1

QA2

MOEYS plan and manage the curriculum for the teaching to students.
Education contents should be managed by curriculum.
Then teachers can access to contents easily from curriculm.

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System administration function also important

If 100 schools, 1,000 schools or all of schools (nearly 10,000 schools) will be connect to SchoolNet, it's necessary for sophisticated:
- **school and user management**
- **security and personal data management**
- **reporting and requirement management**
- **trouble and support management**
- **system operation management**
- **system maintenance management (Including change, release notification)**

Depend on number of school

School Admin

School Teachers

Students

SchoolNet Portal

Contents Donners

Supporters, Founders

School Donners

Depend on number of NGO / NPO

NIPTICT

MOEYS

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Next Action Target

Plan for next action will be:

(1) Connect more schools
NIPTICT already talked with some NGOs / NPOs.
Connect their supporting school to SchoolNet.
Then NGO/NPO can support more to their school.

(2) Develop sophisticated management application
NIPTICT developed 2 prototype.
Need to develop real application program for:
- SchoolNet Portal with Operation Management
- Curriculum oriented Education Contents Management

(3) Consolidate more contents
NIPTICT already talked with come NGOs/NPOs.
Gather their contents to Education Contents Manaagement

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(1) Connect more schools

This project was funded by ASEAN IVO as a collaboration project with NICT.
This IVO project ended at the end of March 2020.
The effectiveness was verified as a proof experiment of providing equal quality education opportunities to the rural areas.
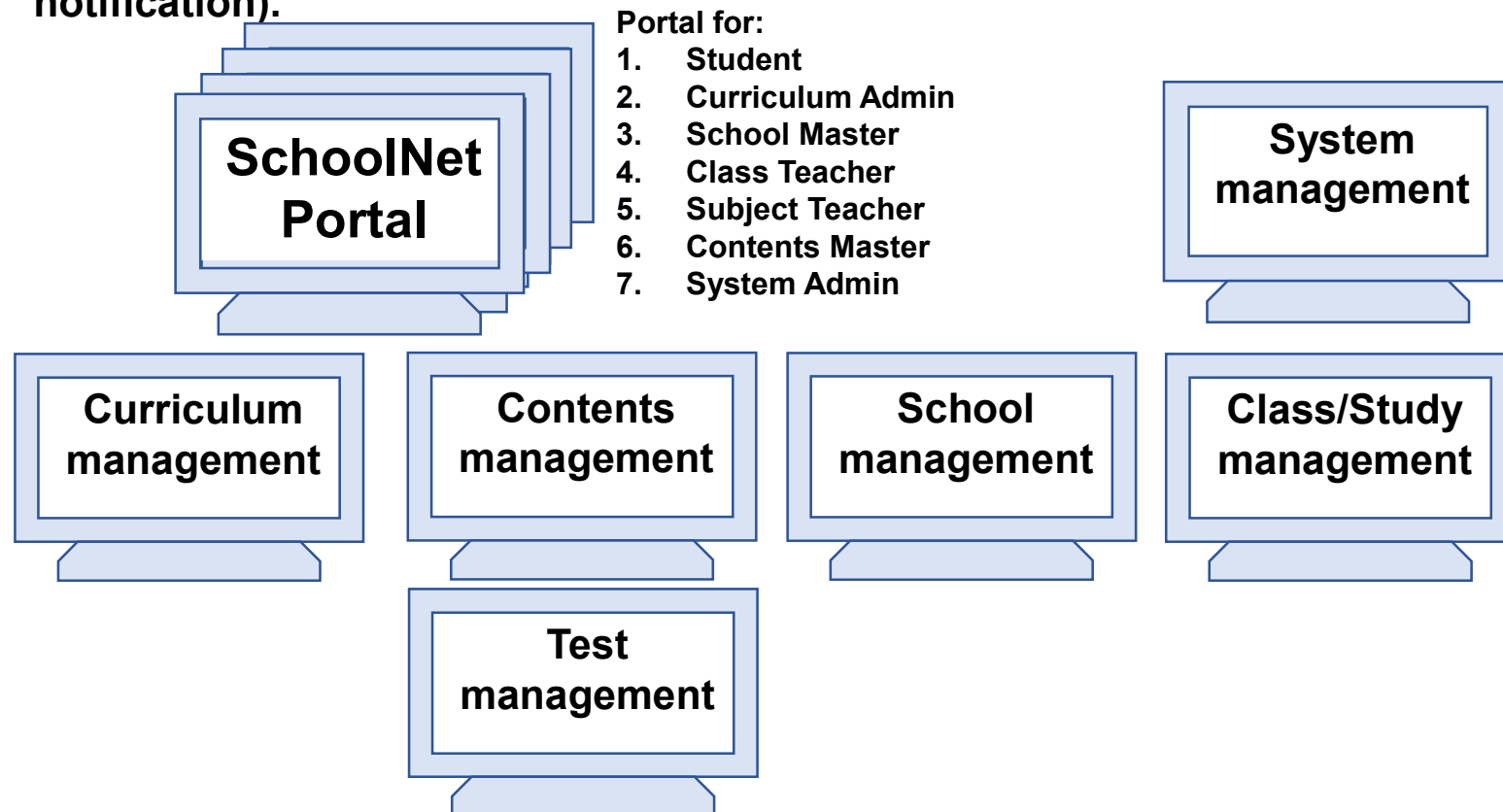In addition, we were able to confirm the cost of deployment and the acquisition of deployment and operation skills using NIPTICT.

It is hoped that the demonstrability will continue in the future by collaborating with various NGOs centering on NIPTICT.

We are waiting for your contact.

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(2) Develop sophisticated management application

The applications we have developed so far are still in the prototype stage. Therefore, continuous development of sophisticated applications is required. Problem solving is required such as school and user management, security and personal data management, management of reports and requests from the field, trouble and support management, system operation management and system maintenance management (including change and release notification).

SchoolNet Portal

Portal for:
1. Student
2. Curriculum Admin
3. School Master
4. Class Teacher
5. Subject Teacher
6. Contents Master
7. System Admin

System management

Curriculum management

Contents management

School management

Class/Study management

Test management

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(3) Consolidate more contents

We have developed a prototype called curriculum management.
The aim is to be able to find the necessary content from the curriculum.

Various contents such as English, mathematics and science are developed by various NGOs. We look forward to the cooperation of such NGOs to register their content on the platform for this demonstration experiment.

We are waiting for your contact.

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The configuration model to set up at one school

Rasberry Pi
NerveNet

Internet

Monitor

**E-Learning contents on Ras-Pi
Use monitor for classroom lesson**

Mobile Router

Switch

Option

Tablet

**Use tablet
for student individual lesson**

**If mobile signal is poor,
use wireless transvers to connect to internet GW**

Solar System

UPS

If electricity is problem, use Solar system

If electricity is not stable, use UPS