INTERNATIONAL JOINT MEETING ON STUDENT STUDIES

Joint Online Meeting

10 February, 2022
15:00-18:30

ZOOM
Meeting ID: 812 0029 1352
Pass cord: 999

Time	Title	Presenter
15:00-15:10	Opening remarks	Masami Yoshida
15:10-15:30	Development of Jigsaw method and effects on university courses. Literature review on student assessment in problem-based learning	Cheng Lijun
15:30-16:00	Telepharmacy platform and model in Thailand	Petcharat Kornanansiri
16:00-16:30	The feasibility of distance learning in primary education for ensuring inclusion and equity	Mizuki Nakajima
16:30-17:00	Telehealth system for home isolation during the COVID-19 pandemic in Thailand	Natthasit Srithongin and Nantanat Wilawanjit
17:00-17:30	A reliable method for innovative lesson improvement	Tomomi Kubota
17:30-18:00	A study on a new dataset shortage problem in medical image recognition	Dai Wenxi
18:00-18:25	Exploring the implementation of National Strategic Plan on antimicrobial resistance in the appropriate use of antimicrobials	Shinnawat Saengungsumalee
18:25-18:30	Concluding remarks	Anuchai Theeraroungchaisri

Anuchai Lab. @ Chulalongkorn University
&
Yoshida Lab. @ Chiba University

Session Chair
Ms Cheng Lijun
Ms Mizuki Nakajima

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Opening remarks

It is our great pleasure to welcome you to the international joint meeting on student studies, the Faculty of Education, Chiba University. This event will provide a unique opportunity for students who are working in the field of education and information technology, as well as international understandings to get together and share their latest research activities and results. The meeting is co-organized by Prof. Anuchai Theeraroungchaisri, the faculty of Pharmaceutics Sciences, Chulalongkorn university. It offers a chance for students in both universities to communicate through online and discuss new developments and hot topics in the related fields. We're confident that over this day you'll get the theoretical grounding, practical knowledge, and personal contacts that will help you build long-term, disciplinary and sustainable communication among students working in a wide variety of areas. On behalf of this meeting, we would like to thank all the presenters for your contribution as well as the students who supported preparation and operation of this meeting. Their high competence, enthusiasm, valuable time and expertise knowledge, enabled us to prepare the high-quality presentation and helped to make the meeting become a successful event. We truly hope this meeting will provide each one of you with not only a good platform for networking opportunities and interactions with other delegates from both universities, but also a memorable experience of your participation in the online communication. At last, we appreciate your participation and support.

10th February, 2022

Prof. Masami Yoshida
The Faculty of Education, Chiba University


DNAL JOINT MEETING
N STUDENT STUDIES
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Interim report

CHENG, Lijun

First-year graduate student, The Faculty of Education,
Chiba University

CHIBA UNIVERSITY

“

Development of Jigsaw method and effects on university courses

---literature review on student assessment in Problem-based Learning

Outline

01. Introduction

Some concepts

02. What

Student assessment

03. How

Specific use examples in the literature

04. why

Reason for choosing this topic

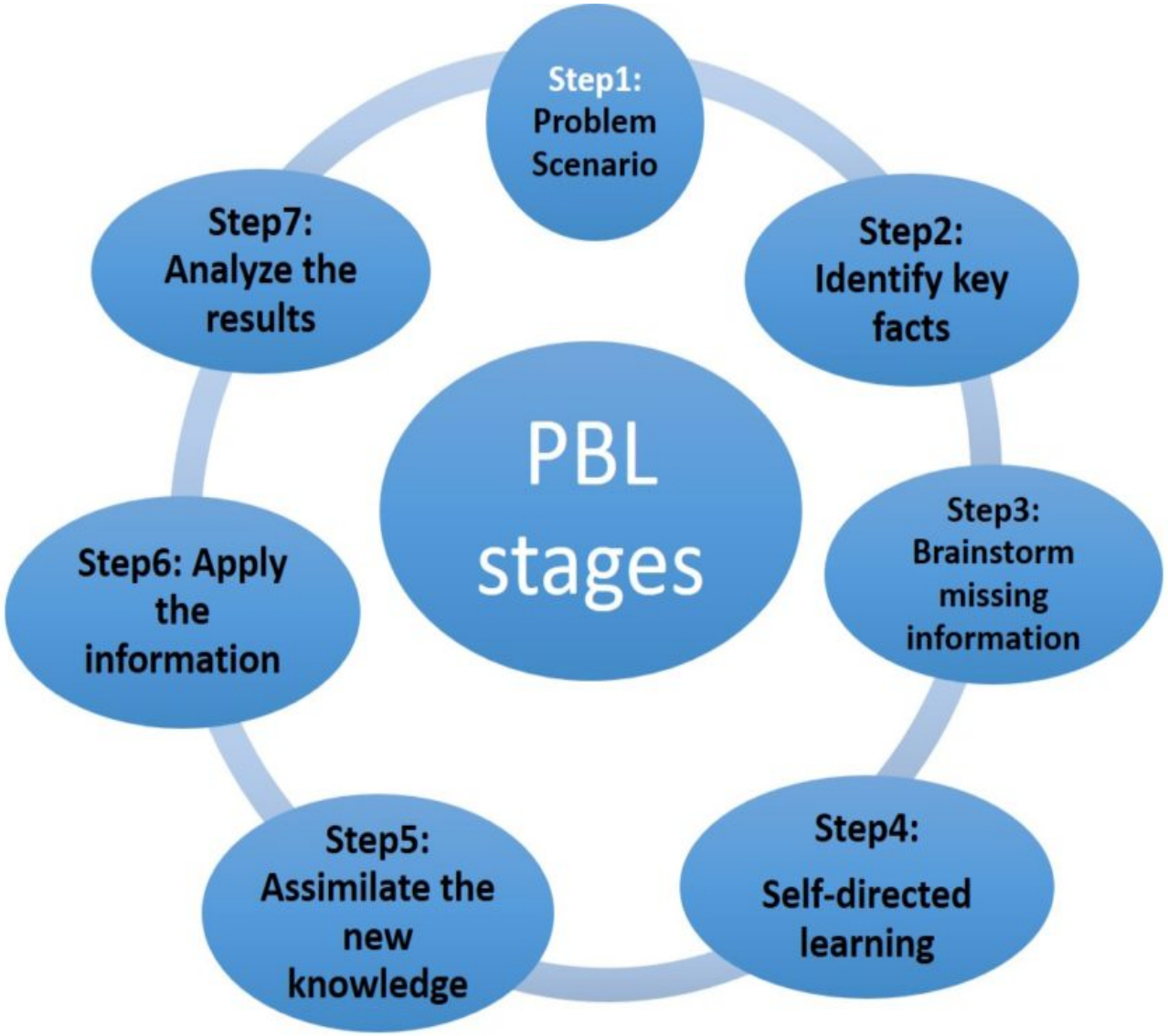
05. Conclusion

Content review

Introduction

Definition

Stages



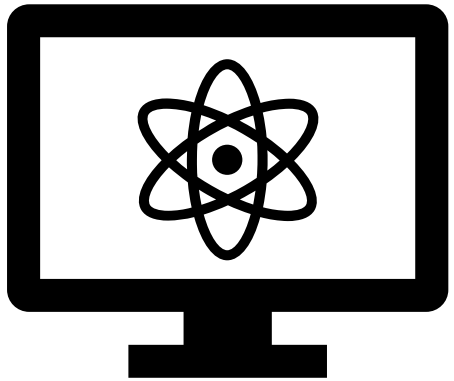

what

Student assessment

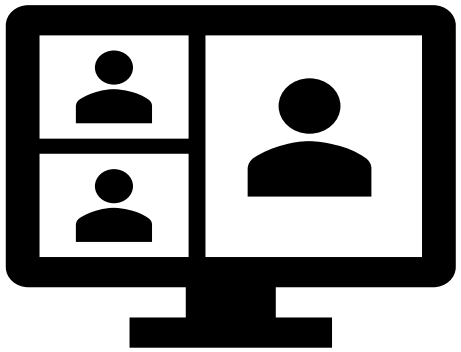
---Methods of student assessment in the literature

Different forms

Web-based problem solving

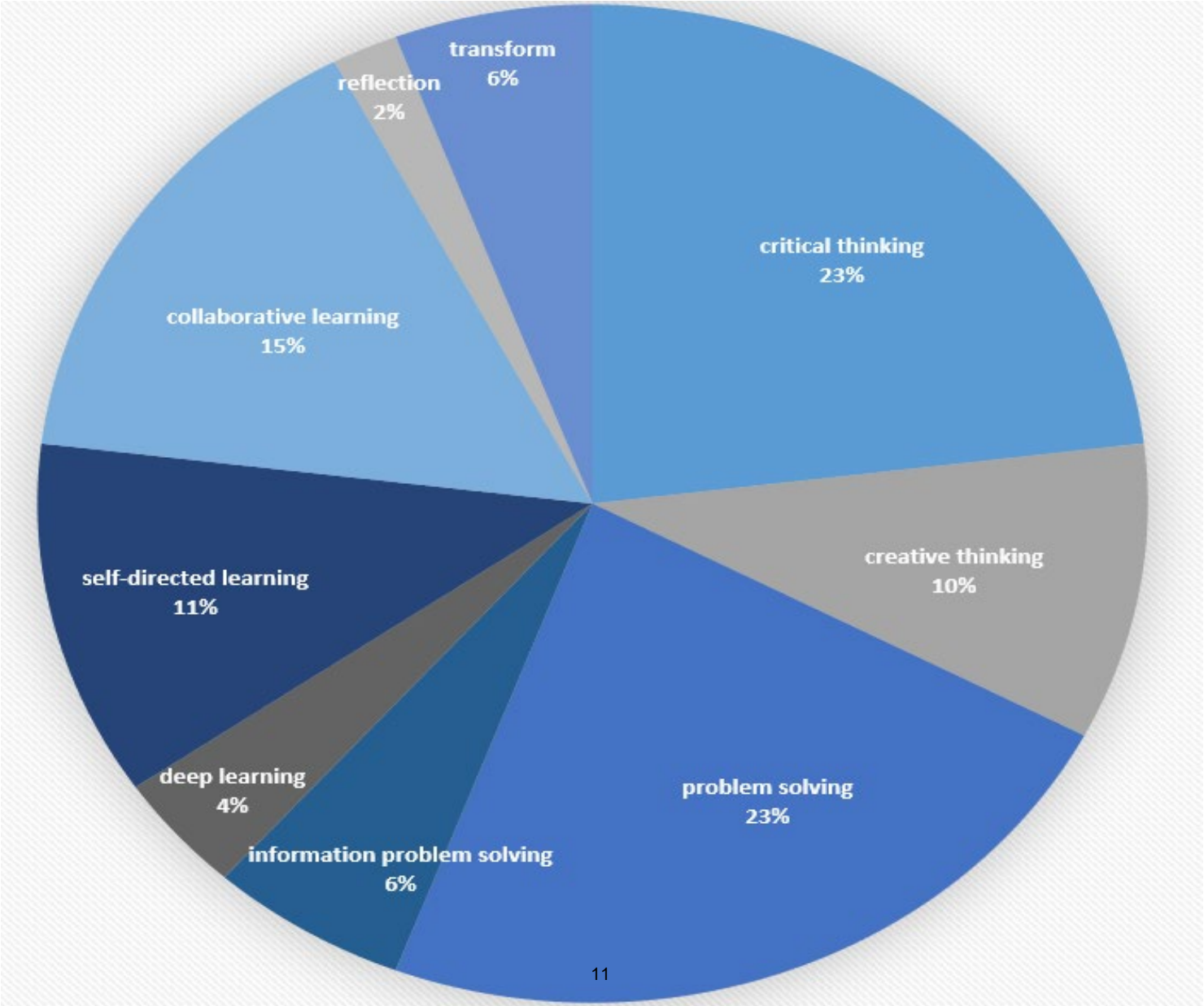


online-based problem solving

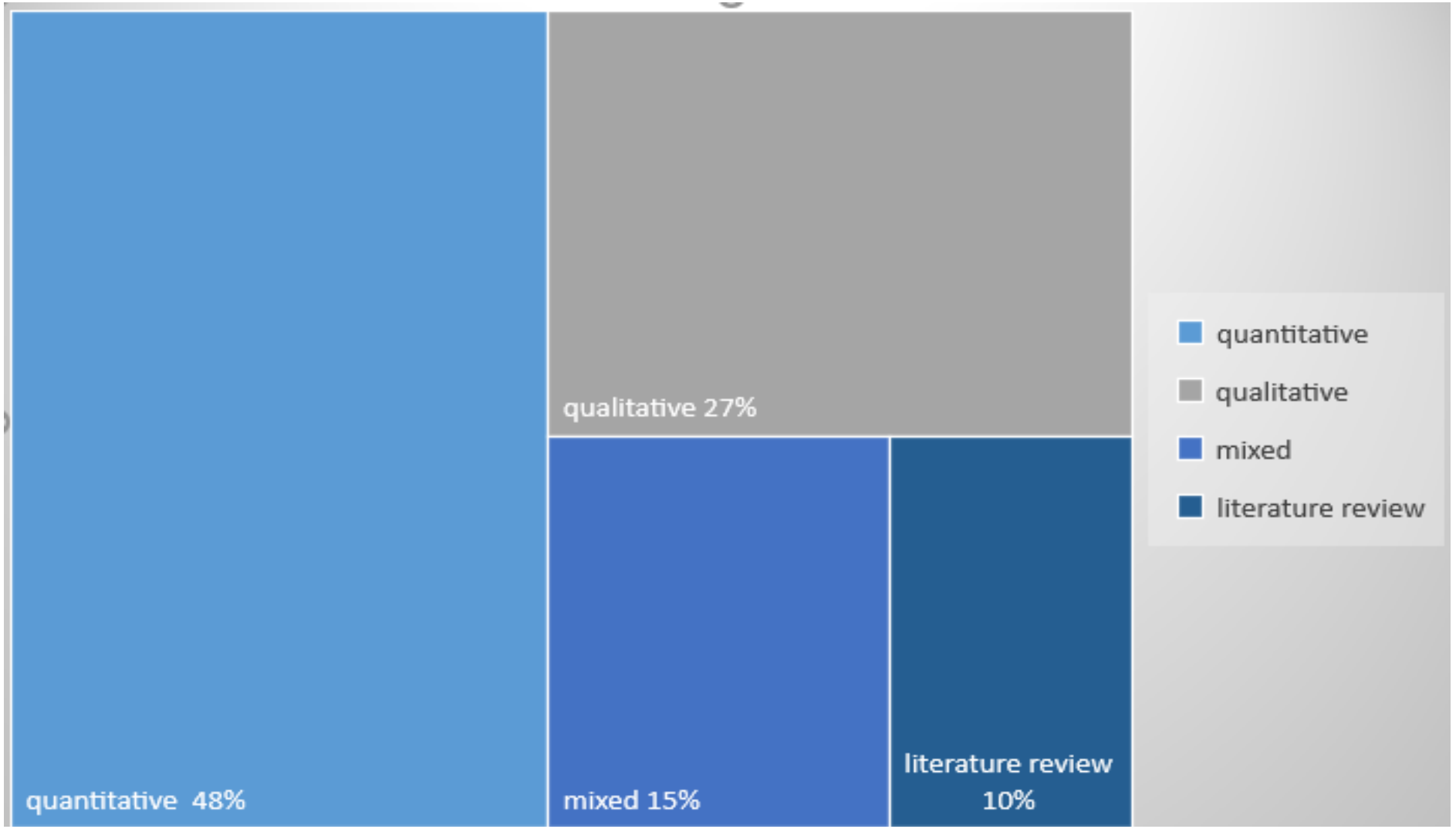


Information problem solving

Competencies in PBL

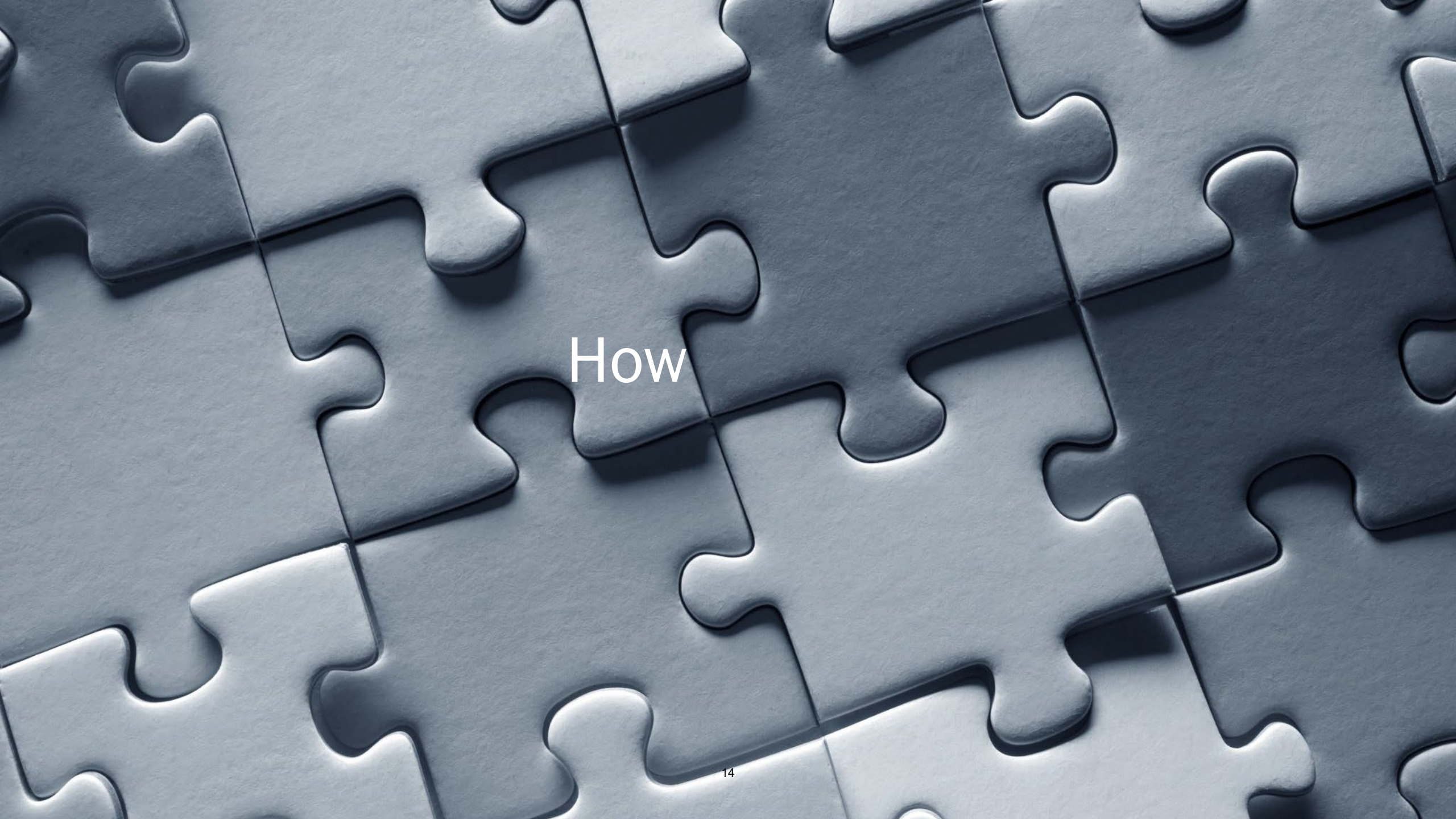


Methods in the literature

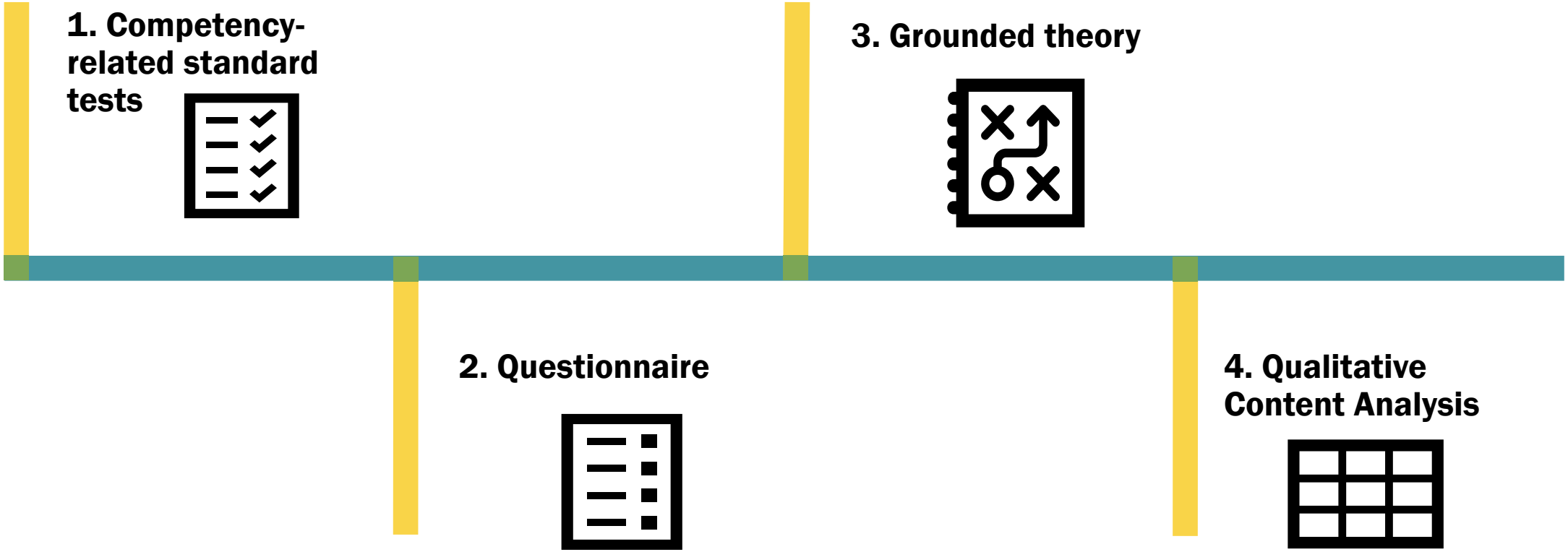


Methods in the literature

Method	Use in the literature		
Quantitative	Pre-test/post-test	competency-related standard tests	questionnaire
Qualitative	Qualitative Content Analysis	Grounded theory	thematic analysis
Mixed	Triangulation-questionnaire,interview,oberservation		
Literature Review			


How

Some examples



Cases

Competency-related standard tests

- The Torrance Test of Creative Thinking (TTCT)
- The California Critical Thinking Disposition Inventory (CCTDI)

Questionnaire

Indicators
Student-centred learning
Small group
Problem as stimulus
Real-world problems
Teacher as facilitator
Self-directed learning

Cases

Grounded theory

- A grounded-theory methodology guided the development of a two stage approach utilizing a primary question and subsequent focus group interviews.
- This research led to the construction of an explanatory model describing integration of theory and clinical experience in a PBL framework utilizing elaboration. O'Neill et al. (2002) suggested elaboration, a process whereby the student interprets new experiences by expanding on existing knowledge, was the key to integrating theory and practice during PBL tutorials and clinical practice. The researchers also identified coordination of the clinical experience to curriculum content as pivotal for students to make successful links between theory and practice.

Qualitative Content Analysis

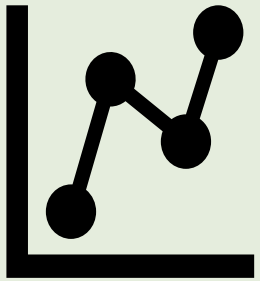
Table 2. Definitions of strategies identified in the transcripts.

Code	Category Sub-category	Definition
	Organisation	
PBL	Language from the PBL cycle	Reference to keywords from the PBL cycle (see Figure 1) as given to the students in their introductory lecture and in the feedback forms which they submit. This includes words such as problem, issue, brainstorm, learning outcome and learning objective
PD	Progressing discussion	Reference to 'getting back on track' or changing the conversation back to the case at hand. Explicit attempt to prompt the group to move on
R	Roles	Reference to the allocation of designated roles; leader and notetaker, as expected from the tutor
ER	Effort regulation	Reference to simplicity or delegating/minimising workload
	Resources	
CM	Case material	Use of the words or phrases as seen in the new case material
T	Tutor	Use of the tutors as a resource, through mention of the written feedback or prior conversations
APK	Academic previous knowledge	Reference to other modules within the same degree programme that students have either completed or are completing

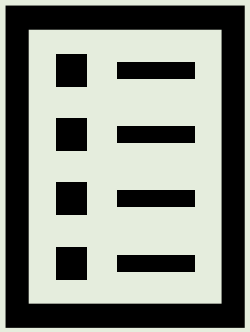

why

Materials

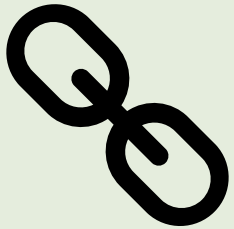
Answer sheet



Data or others graph



Text description



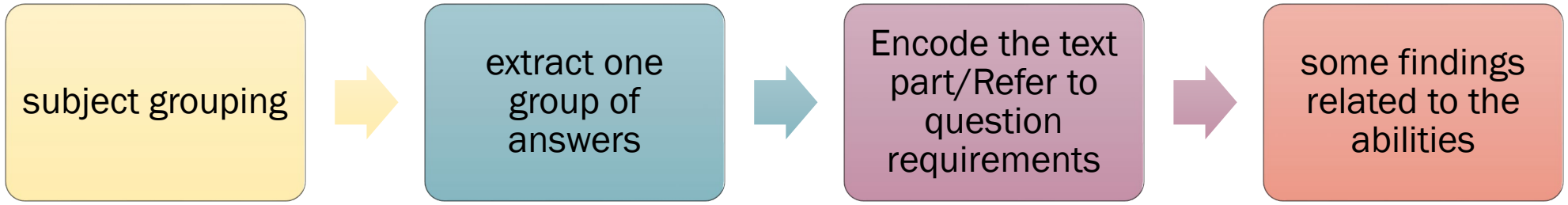
Reference link

What to discover from coded experiment

If critical thinking is viewed as an analysis process, can deduction and induction in students' answers be evidence for assessing this ability?

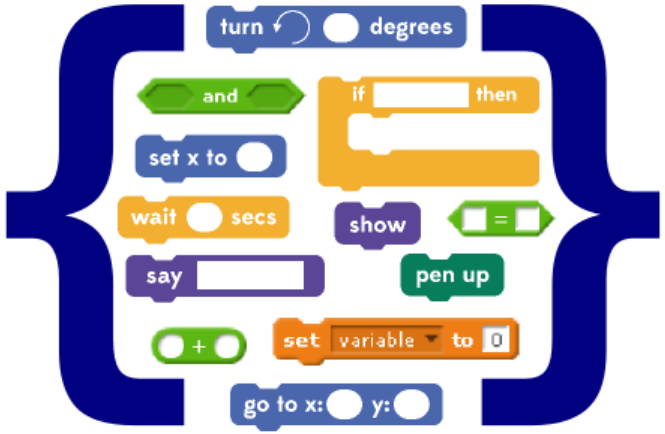
Assuming grades are not used as a reference for assessment, whether the free combination of information as their answer that students will see is consistent with the originality of creative thinking?

The set of answers I picked found that students visit websites other than the links provided by the subject. Is this part relevant to self-study?



What should I do next?

Primary categorical coding of all data



Identify the data characteristics and classify them according to the competency assessment criteria.

Identify research methods that can link data and theory

Summary

what

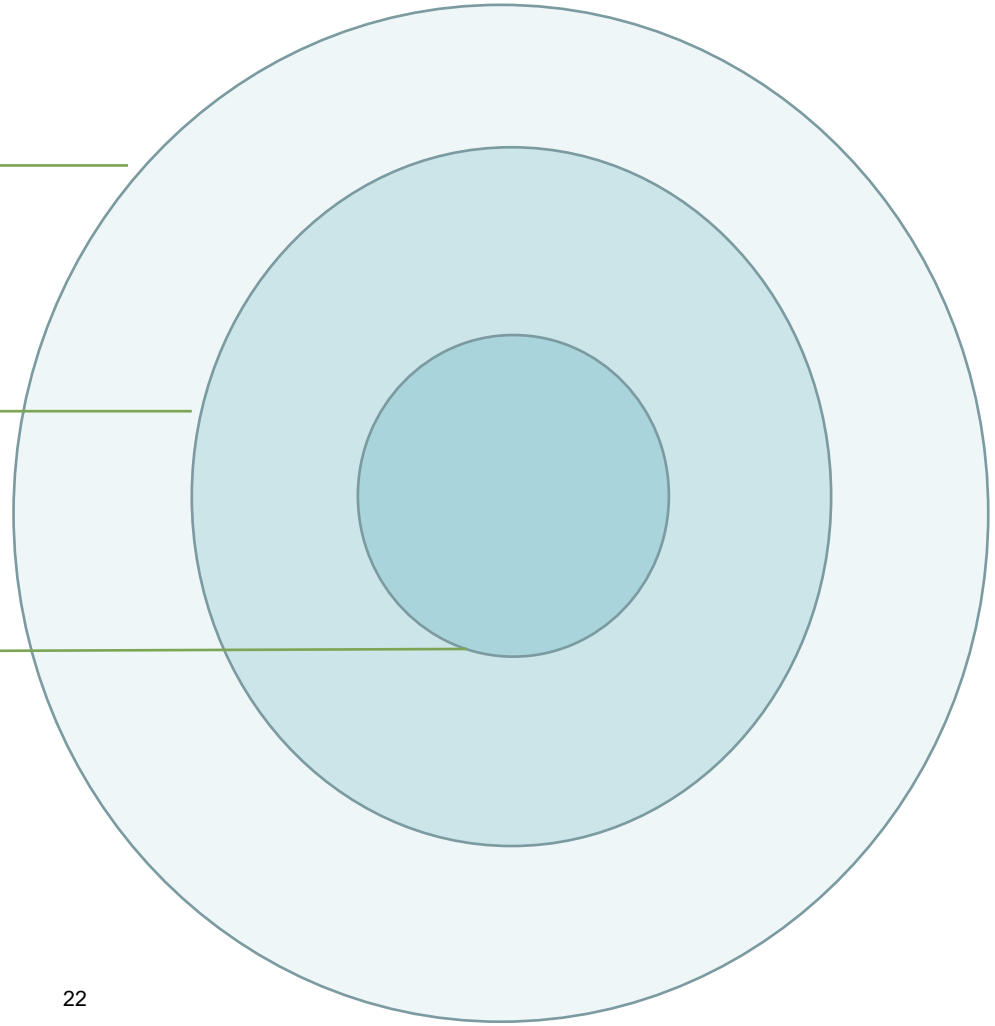
About PBL

How

Cases in the literature

Why

Reason for the topic



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Thank you

Thank you


DNAL JOINT MEETING
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Meeting ID: 812 0029 1352
Pass cord: 999

Telepharmacy Platform and Business Model in Thailand

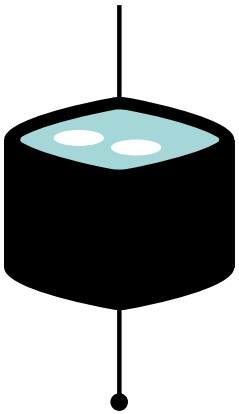
Ms. Petcharat Kornanansiri

Ph.D Candidate

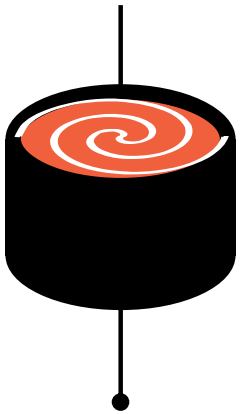
Updated on 04 02 2022

Scope

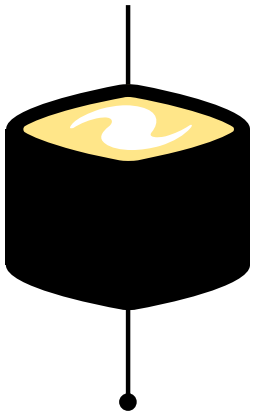
Definition



Platform



Business Model



Telehealth

3

1.Telemedicine

- Physician
- Clinical Services

2.Telepharmacy

- Pharmacist
- Pharmaceutical Care

3. Other Health Professionals

Non-clinical Services

Ref:
https://www.who.int/goe/publications/goe_telemedicine_2010.pdf
https://www.healthit.gov/faq/what-telehealth-how-telehealth-different-telemedicine

Definition of Telepharmacy

The Pharmacy Council of Thailand

"Pharmaceutical care and related services to patients or service recipients, where by pharmacists communicate with patients or service recipients by means of telecommunication; including delivery of medicine in accordance with the standard announced by the Pharmacy Council of Thailand."

*Translated from Thai version of the Announcement No. 56/2563 on the 2nd of June 2020

Telehealth Platform Provider
Originated By

Hospital

Insurance Company

Drugstore

Government Office

Updated on 04 02 2022

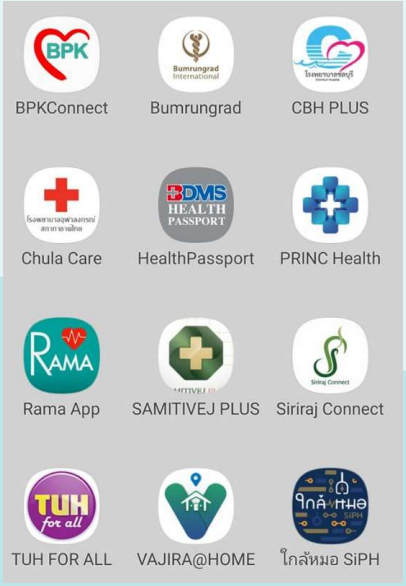
Telehealth Platform in Thailand 6

and more

Updated on 04 02 2022

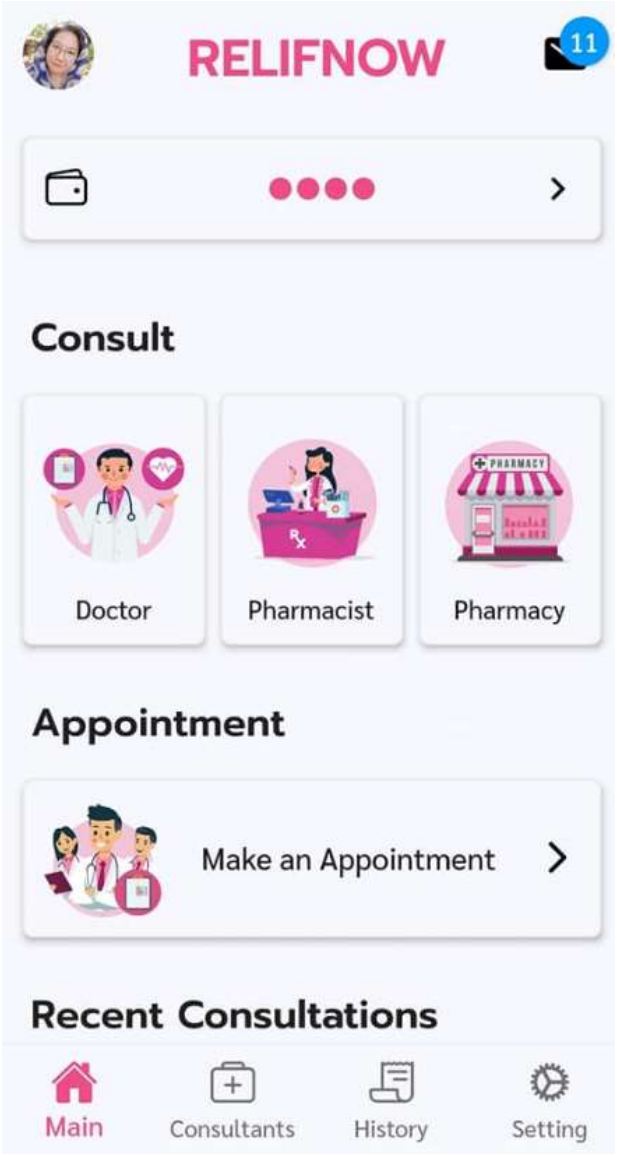
How to access the platform

7



Native Application

Relifnow



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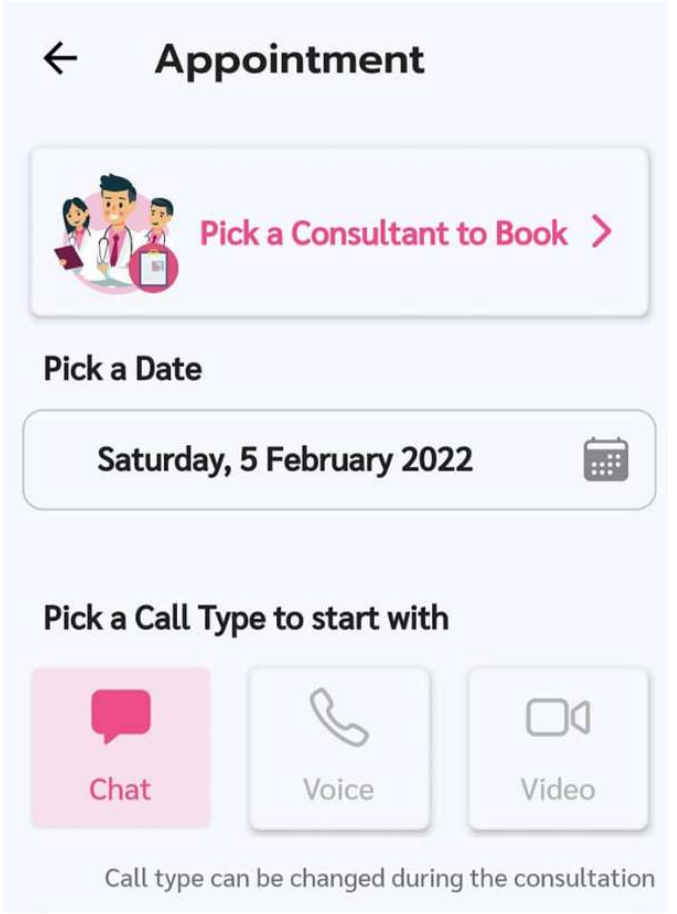
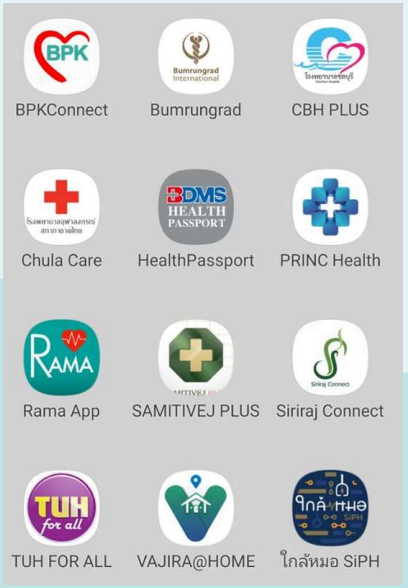


Updated on 04 02 2022

How to access the platform

9

Web Application



Native Application

TeleHealthRegion7

Service Recipient/

Patient

Health Professionals

ผู้รับบริการ / ผู้ป่วย

ใช้บริการ

ผู้ให้บริการสุขภาพ

ให้บริการ

Manual

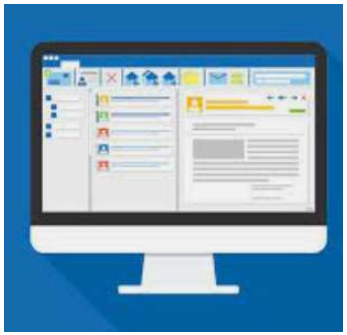
คู่มือการใช้งาน

Contact us

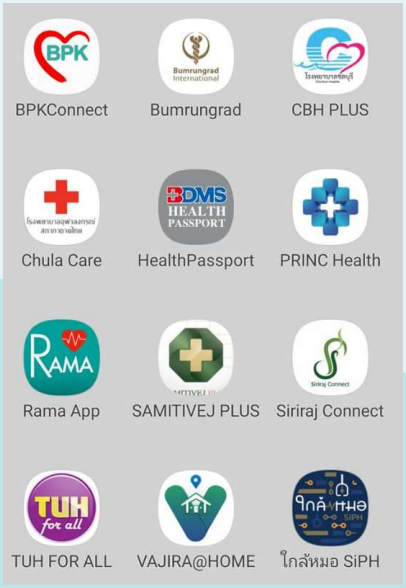
คิดต่อเรา

How to access the platform

11



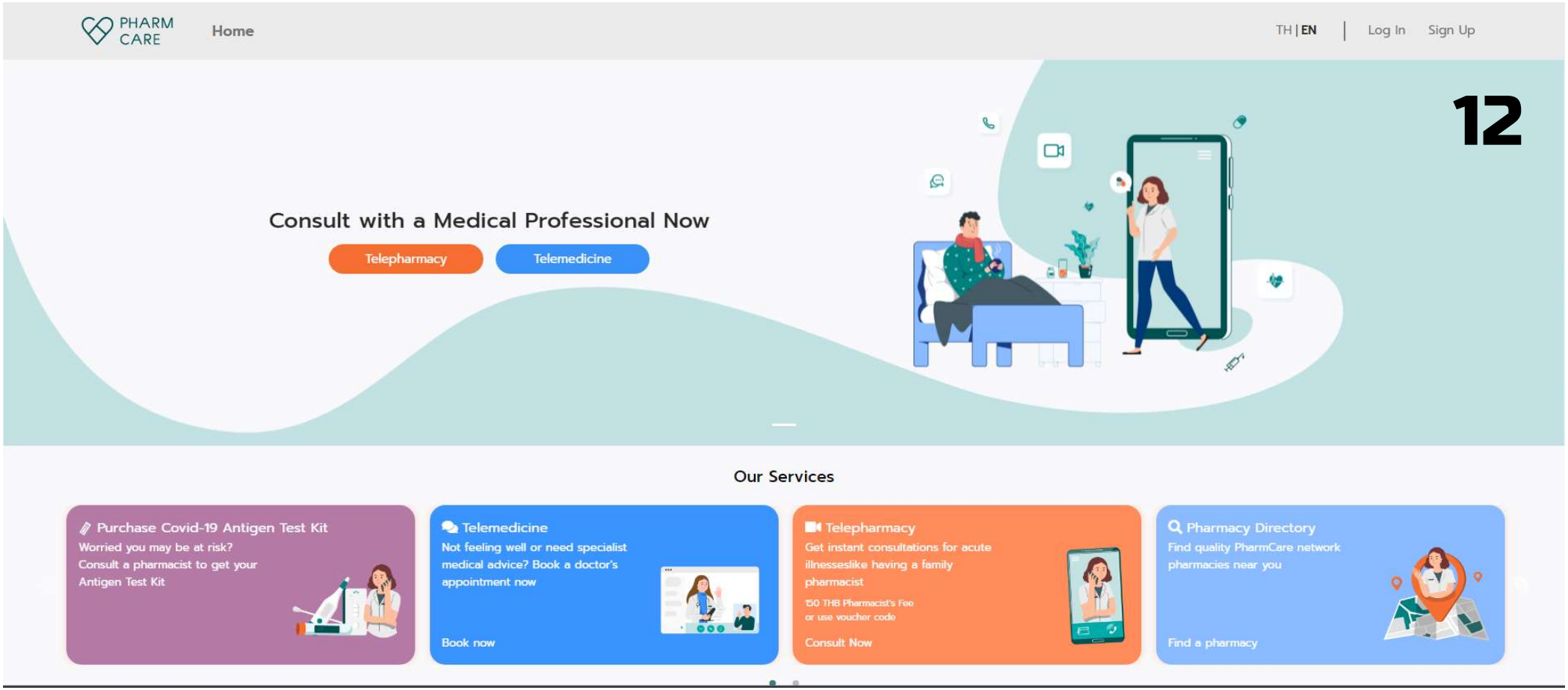
Web Application



Native Application

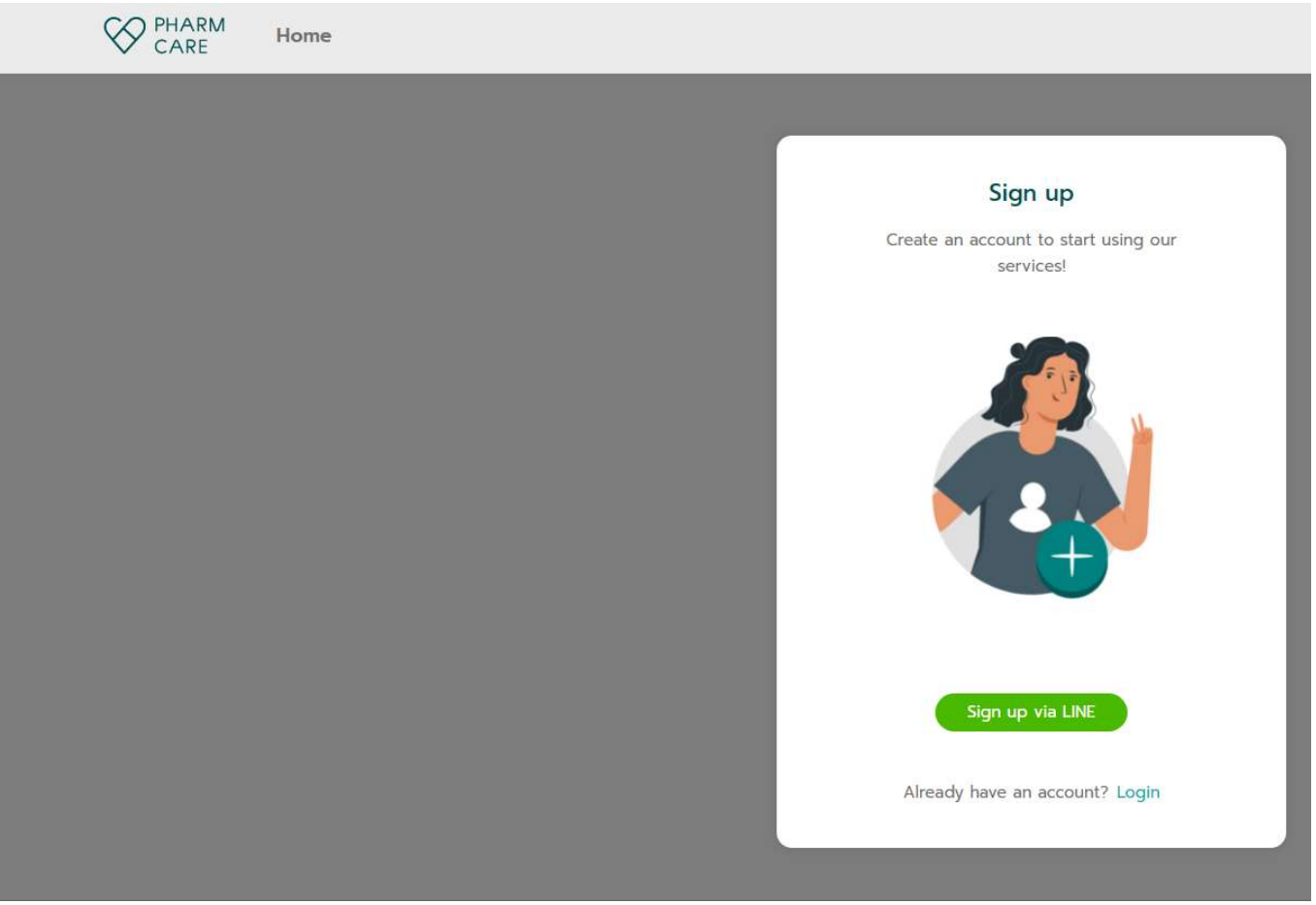
LINE Official Account

Messenger Application:



Updated on 04 02 2022

13



Updated on 04 02 2022

Drug Categories

Table 1 Current Legal Drug Categories and Their Regulatory Details in Thailand[11,12]

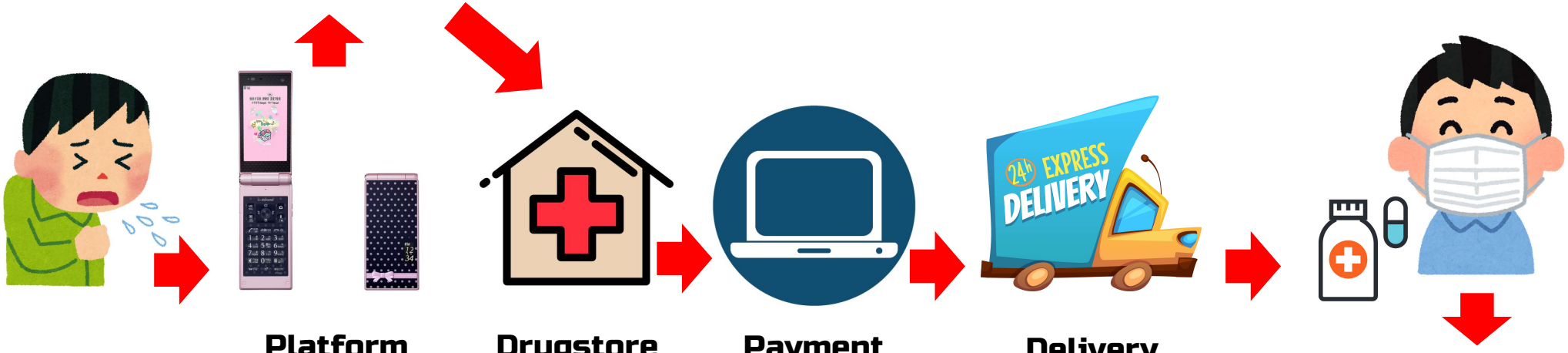
Drug Categories	Gate Keeper	Prescription Requirement	Distribution Channel			Advertising	
			Hospital	Pharmacy	Non-Pharmacy Retailer	Health Professional	Direct-to-Consumer
Specially controlled drugs	Physician	Yes	Yes	Yes	No	Yes	No
Dangerous drugs	Pharmacist	No	Yes	Yes	No	Yes	No
Non-dangerous drugs	None	No	Yes	Yes	No	Yes	Yes
Household remedies	None	No	Yes	Yes	Yes	Yes	Yes

77.4% of drugs in Thailand

Ref: Leelavanich, D., Adjimatera, N., Van Groenou, L. B., & Anantachoti, P. (2020). Prescription and non-prescription drug classification systems across countries: Lessons learned for thailand. *Risk management and healthcare policy, 13*, 2753.

Telepharmacy Service Flow 1

Doctor



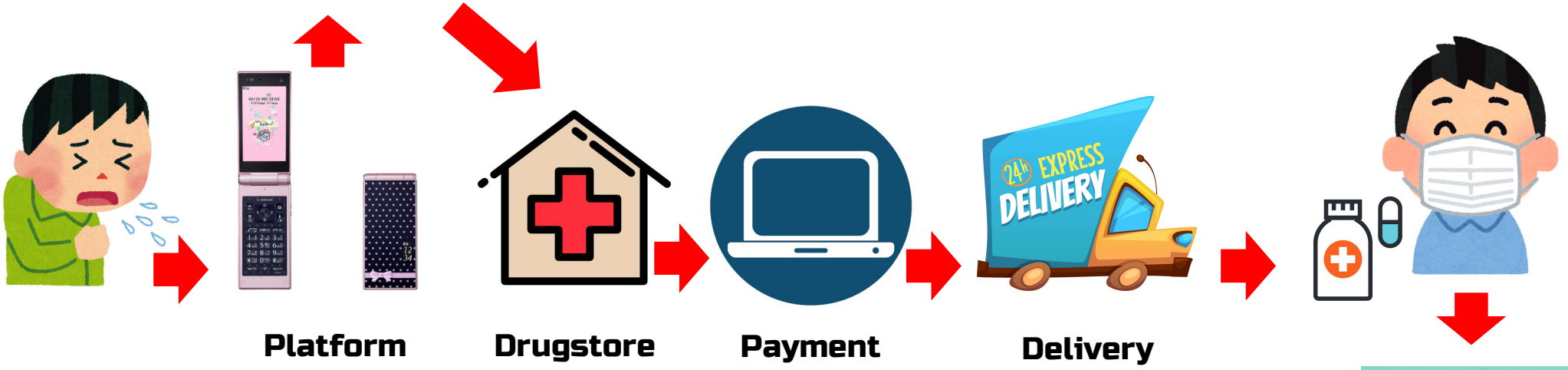
Platform Drugstore Payment Delivery

Pharmacist

15

Telepharmacy Service Flow 2

Pharmacist



Platform Drugstore Payment Delivery

Pharmacist

16

Fee

1.Pay per use

2.Membership

3.Free of charge

Medicine Cost + Delivery Cost + Clinical Services Cost + Administrative Cost

Telepharmacy Business Model

Hospital

Insurance Company

Drugstore

Alliances

Platform

Internet Banking : Payment

Internet Provider

Promotion

Government Office

Database, Research, Budget

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THANK You ☺

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ONAL JOINT MEETING
N STUDENT STUDIES
Joint Online Meeting
10 February, 2022
15:00-18:30
ZOOM
Meeting ID: 812 0029 1352
Pass cord: 999

DISTANCE LEARNING IN PRIMARY EDUCATION

International Joint Meeting

10 February 2022

Department of Education

Mizuki Nakajima

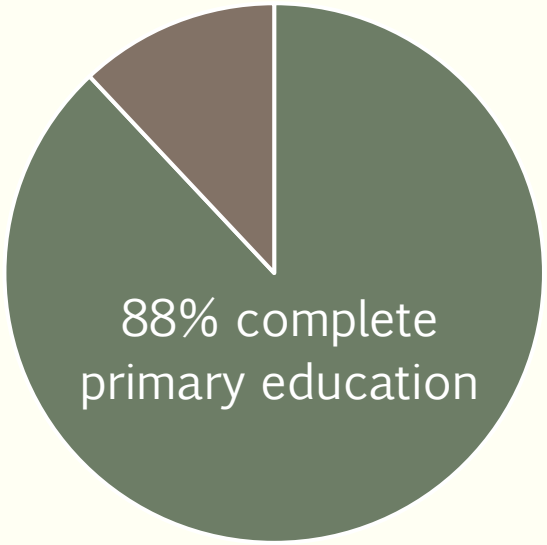
Agenda

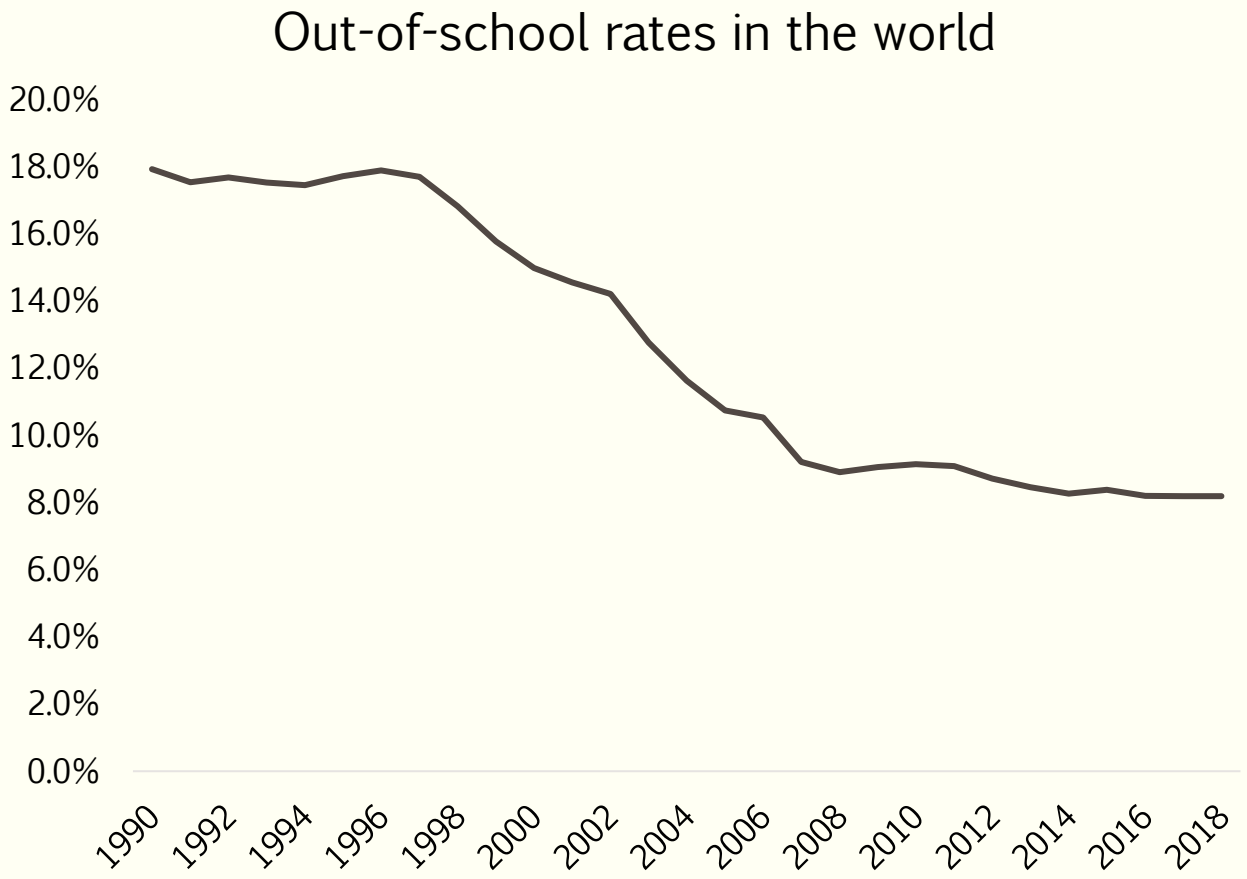
- ✓ Current Penetration of SDG4 and Distance Education
- ✓ RQs, Aims, and Objectives
- ✓ Results
- ✓ Discussion and Perspective
- ✓ Conclusion

CURRENT PENETRATION OF SDG4 AND DISTANCE EDUCATION

Reviewing progress/remaining challenges of SDG4 and Grasping the role/effort of DE in compulsory education

1. Access to Education

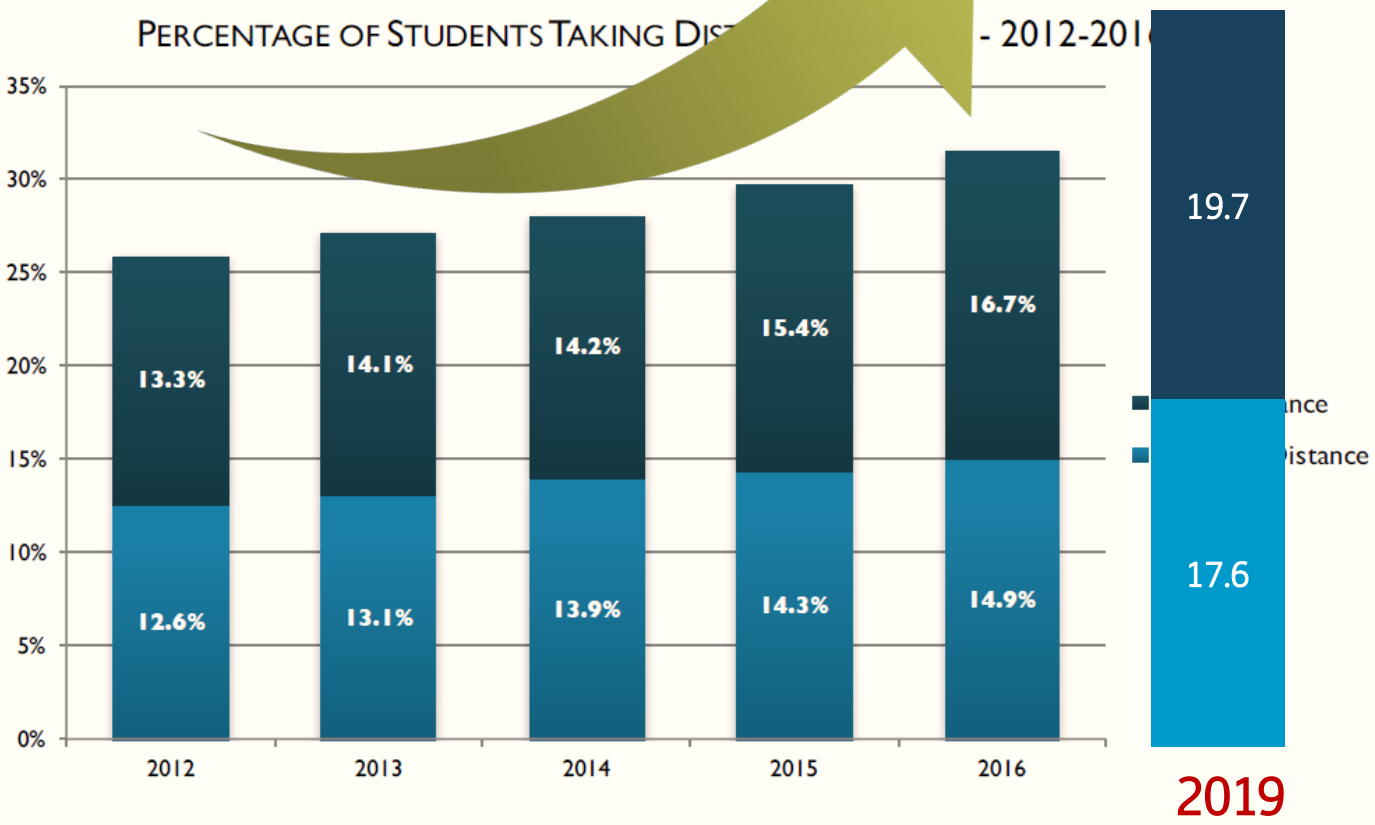




Source: Scoping Progress in Education (SCOPE) https://www.education-progress.org/

1. Access to Education

University



K-12

Combination of Distance

21% (Public)

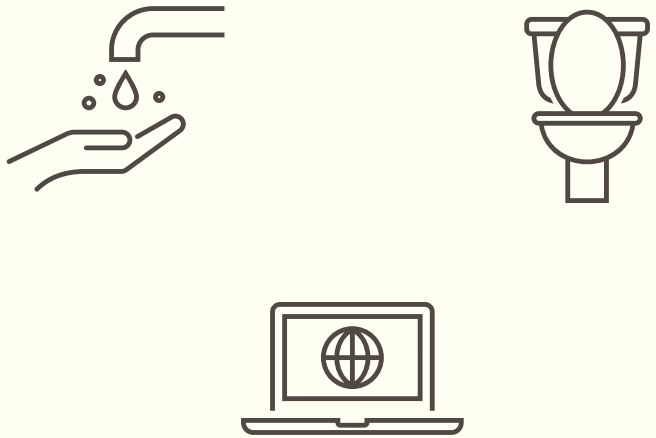
13% (Private)

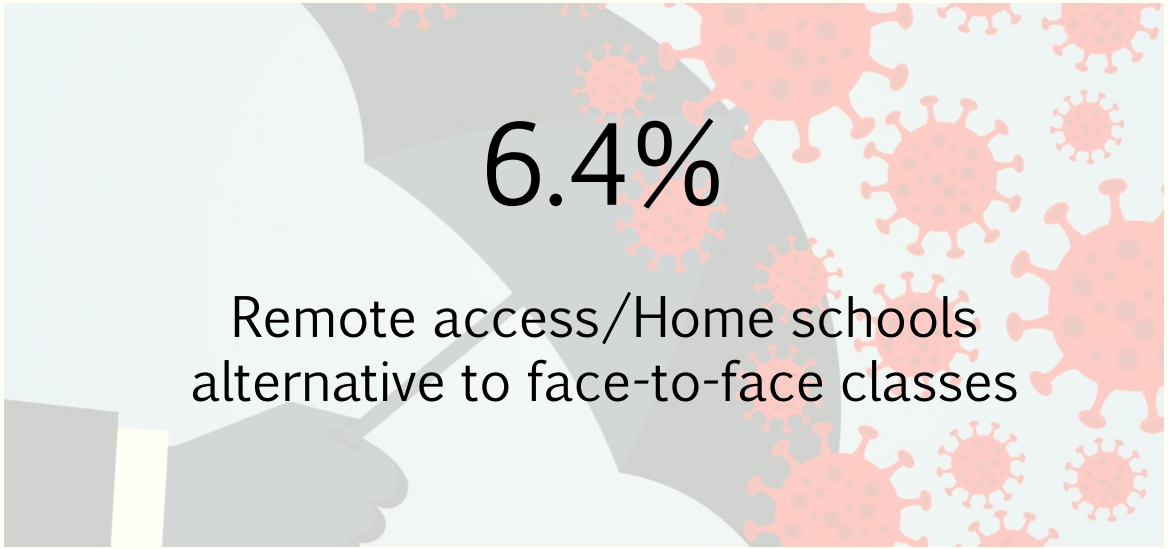
All Distance

4.8%

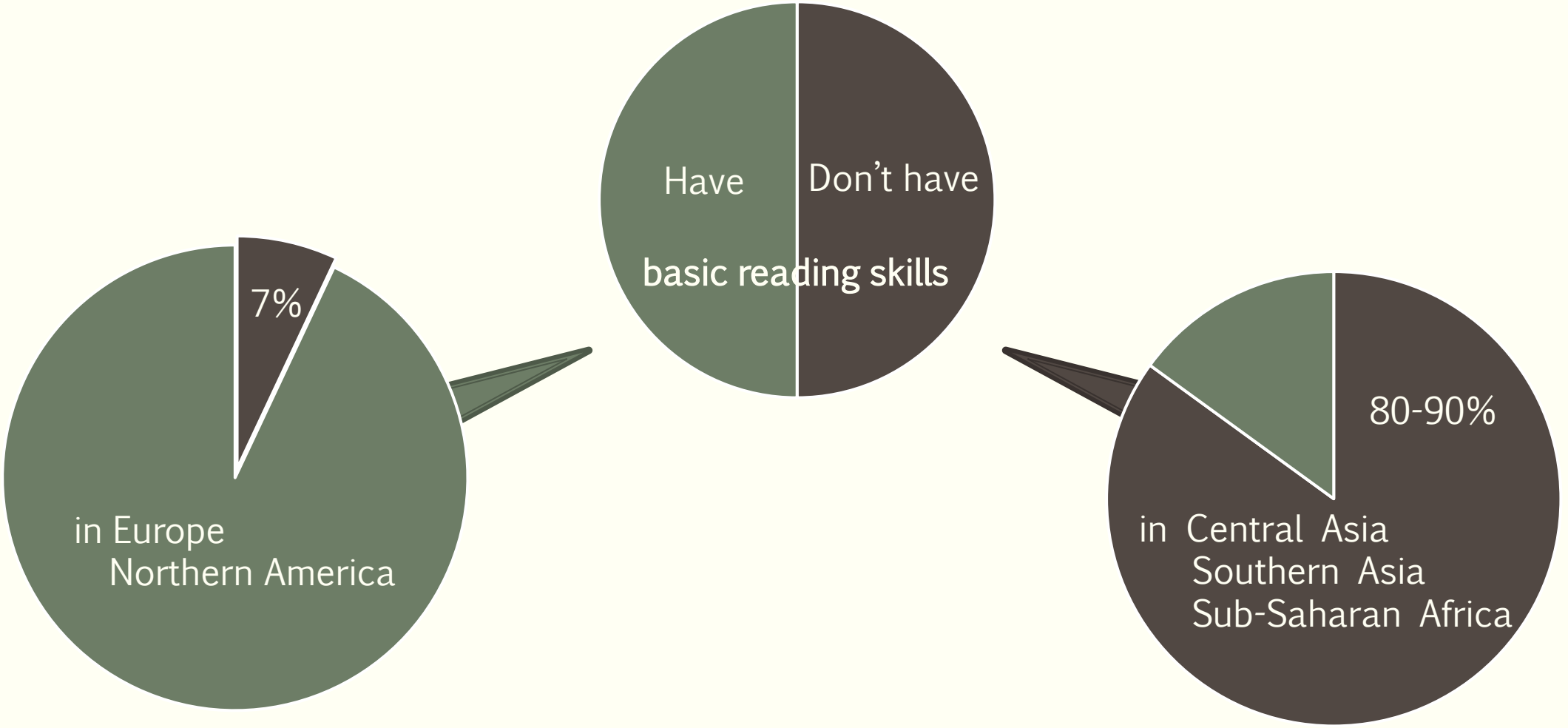
Source: Seaman, J. E., et al., (2018) https://files.eric.ed.gov/fulltext/ED580852.pdf

2. Quality of Education and Equity



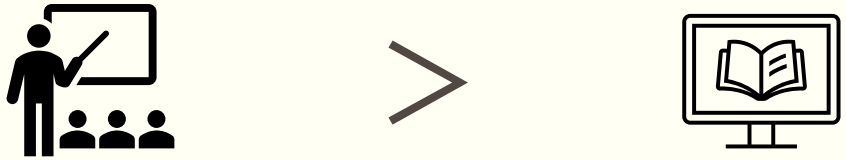


3. Learning Proficiencies (Literacy)



3. Learning Proficiencies (F2F vs DE)

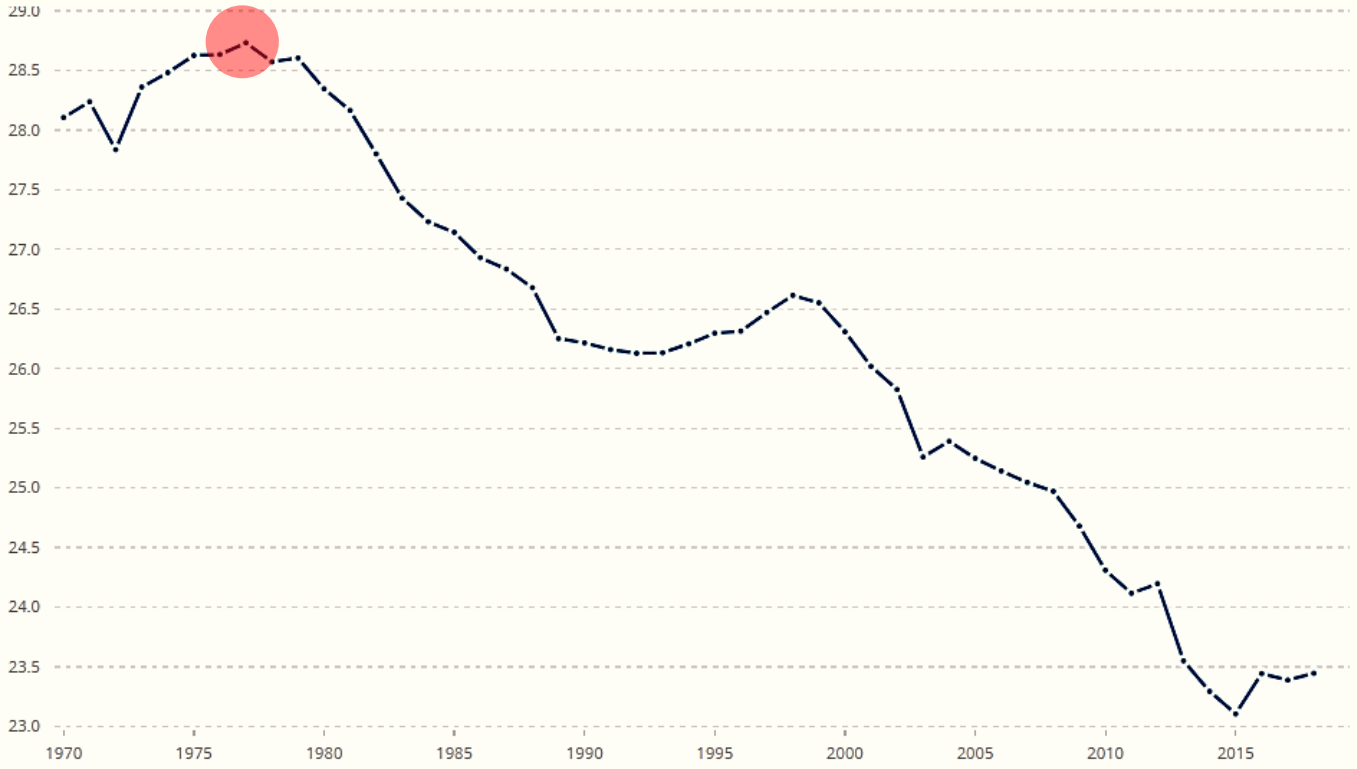
Completion Rate



Levels of Academic Success

3. Learning Proficiencies (Class size)

The State of Tennessee's Student/Teacher Achievement Ratio **(STAR)** Project



Source: World Bank Open Data (https://data.worldbank.org/indicator/SE.PRM.ENRL.TC.ZS).

4. Finance

Aid expenditures by doners

Cost Covered by the government

Households complemented

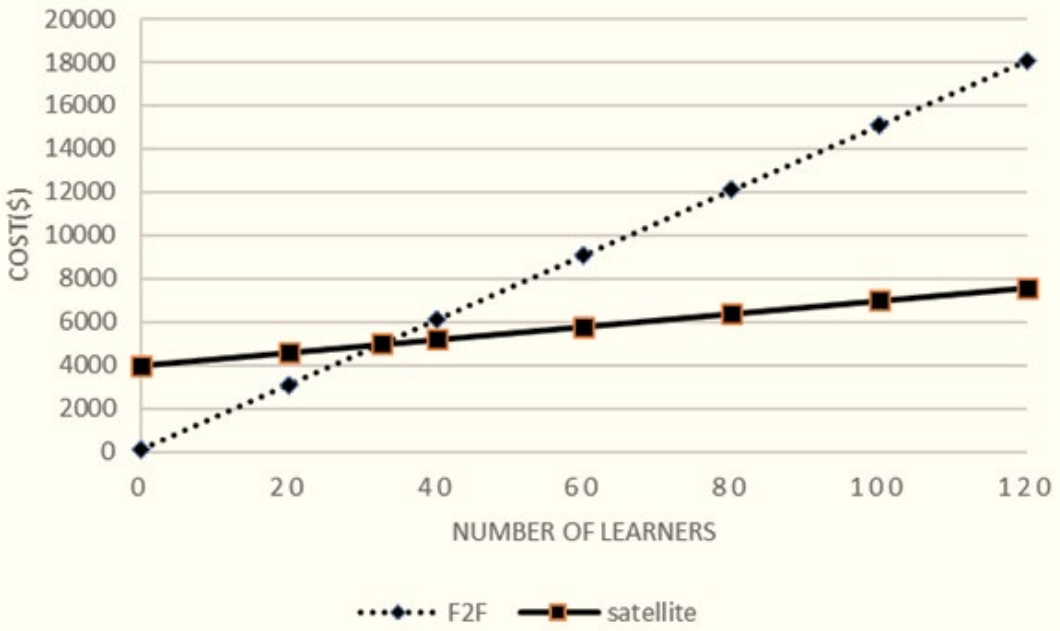
¼- ½

of all education spending

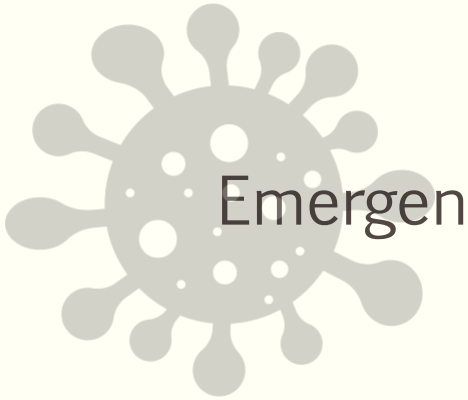
4. Finance

- Learning Style
- Type of Media
- Student Population

Break-Even-Point



5. Treatment of Distance Education in a Post-Covid World



Emergency Remote Teaching

Agency

Responsibility

Flexibility

Choice

Online Distance Education

Definition of Distance Education

Distance education is teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization.

(Moore and Kearsley, 2011)

RESEARCH QUESTIONS, AIMS, AND OBJECTIVES

What/ Why/ For Whom do we want to examine?

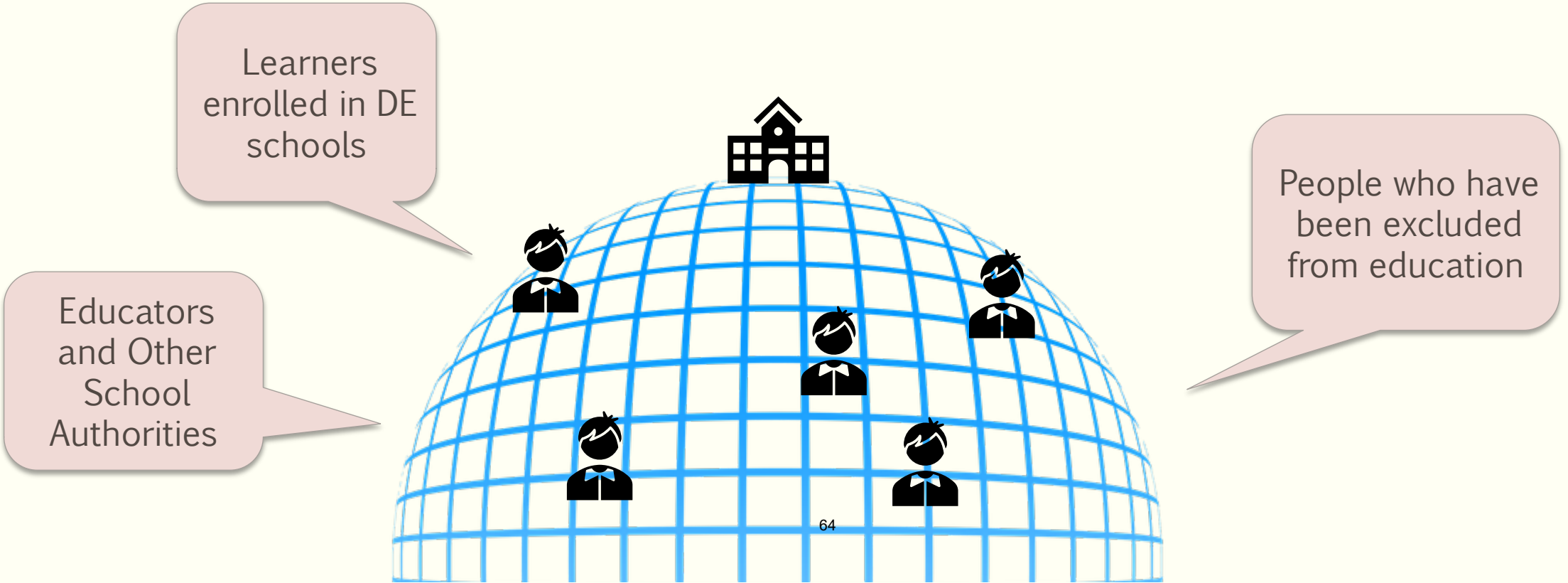
Research Questions

1. How can distance education at the primary level promote EFA?
   How has this learning form contributed to SDG4?

2. What types of difficulties have online primary schools faced?
   Do these schools have the potential to overcome the remaining global educational problems?

Aims/ Objectives

DE in Basic Education → SDG4 Targets → Remaining Challenges → Better DE Provision



School Information

C school (Namibia)
Number of Students: 140
Year Founded: 2020

National data
Population: 2.4 million
Area: 824,000square/km
GNI per capita: US $5,250

T school (South Africa)
Number of Students: 9000
Year Founded: 2017

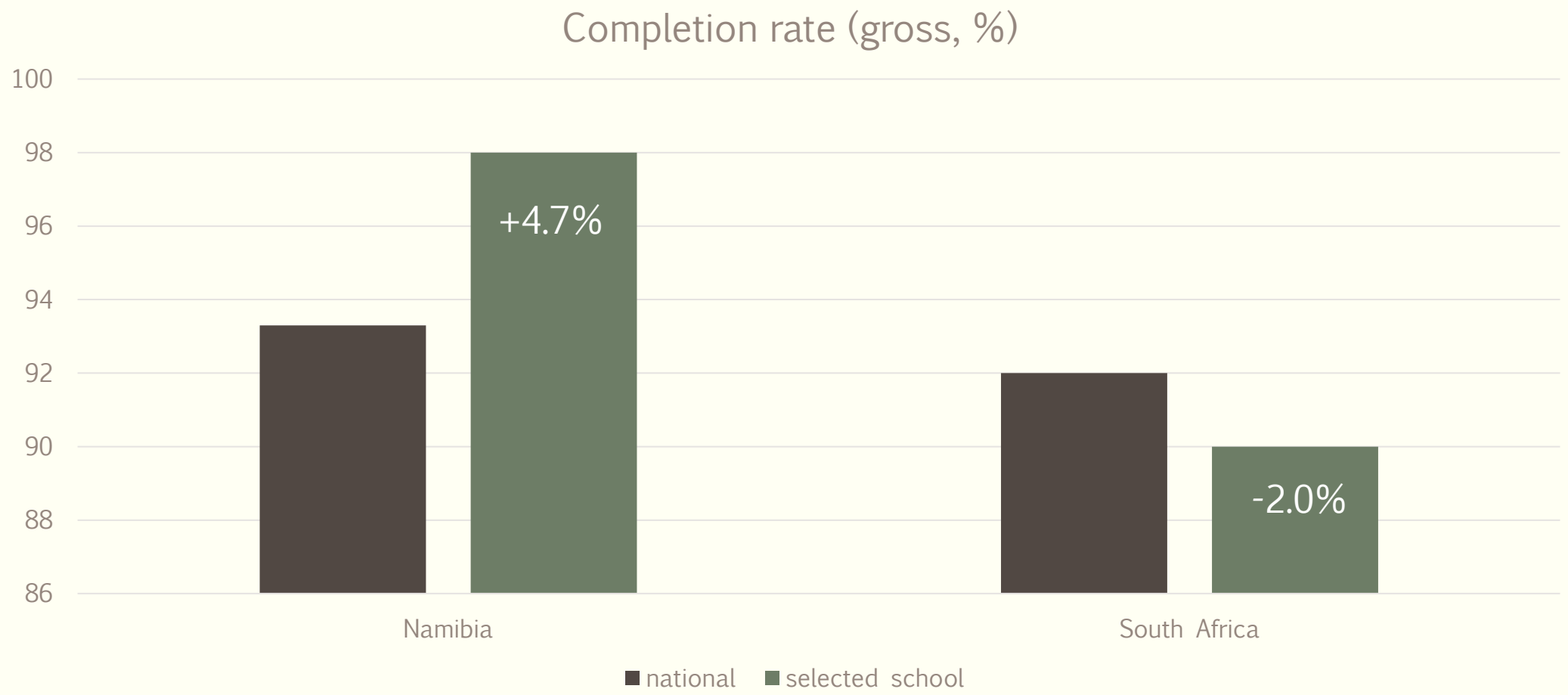
National data
Population: 57.8 million
Area: 1,220,000square/km
GNI Per capita: US $5,720

Source: Ministry of Foreign Affairs of Japan
https://www.mofa.go.jp/mofaj/area/namibia/data.html https://www.mofa.go.jp/mofaj/area/s_africa/data.html

RESULTS

Contributions and Challenges

DE schools Support Learners until their Graduation



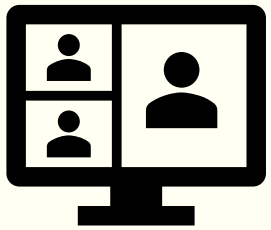
DE schools as the Learner's First Choice of Education

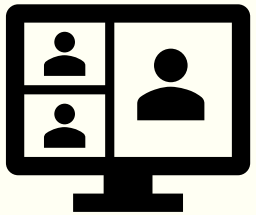
(K-7)

(K-12)

Over-aged attendance	25.1%	7.5%
National starting age	7	7
DE Average age of 1st grade entrants	earlier than the official primary starting age	overlapped with the official primary starting age
Enrolment–Completion	30.9%	6.4%

DE schools Provide Lectures with Small Classroom Size





25 students/teacher

28 students/teacher

(+3)

30 students/teacher

19 students/teacher

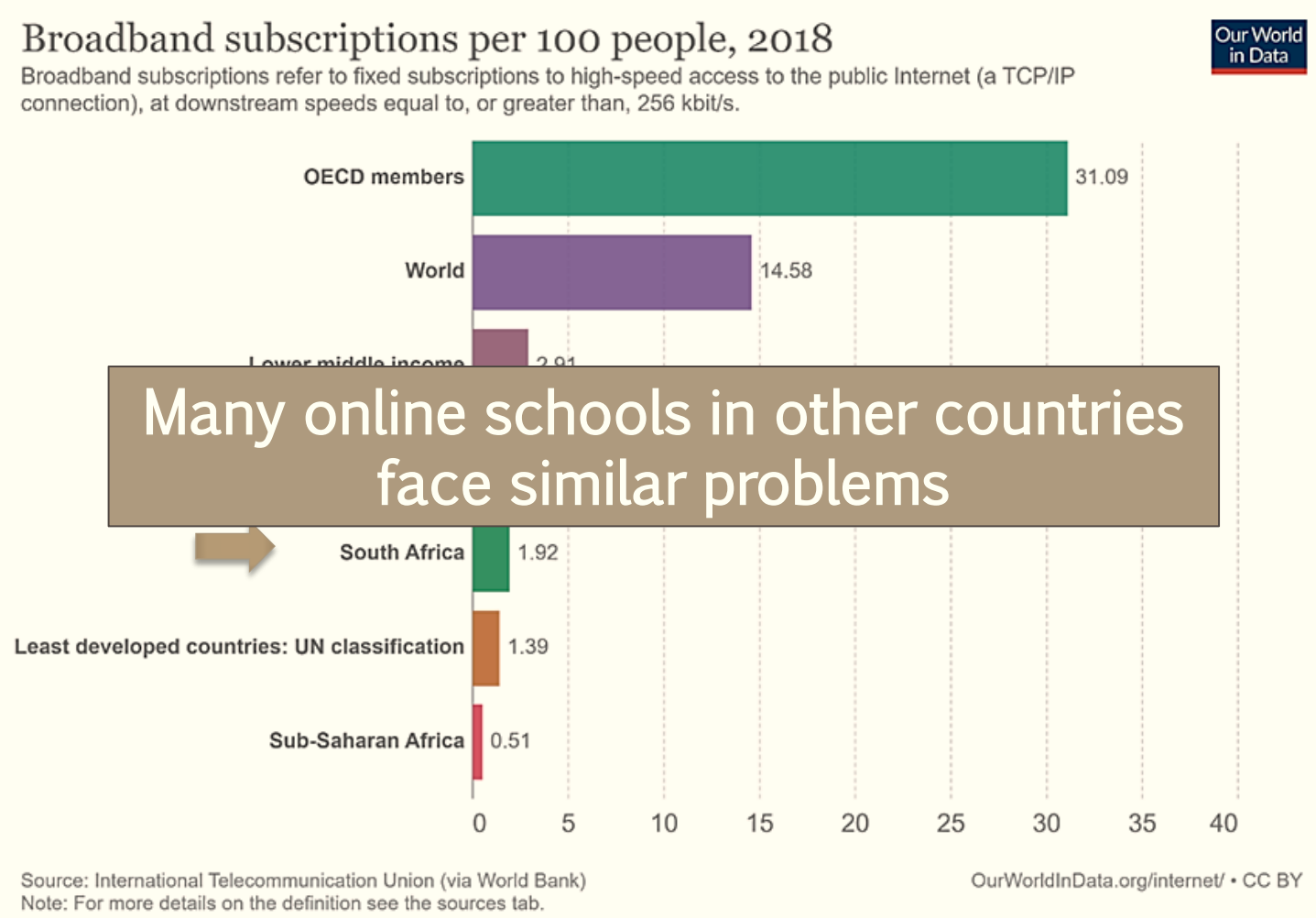
(-11)

DE schools Offer Quality Education under Limited ICT

Q: Please tell us about any difficulties/challenges in your school.

C School (in Namibia)	T School (in South Africa)
Our biggest challenge is that **equipment and internet connectivity is not readily available**. Neither students, nor parents are computer literate and online education is a foreign concept in this country.	Our biggest challenge is **internet connection of the learners**. Our model is dependent on the learners having access to the web, this is for classes, examinations, tasks etc. When there is a problem with connectivity, it sets the learners back. Also, data is very expensive in South Africa, so it poses a problem for those who do not have access to fibre connections. Lastly, electronic equipment is also essential for the online module and many parents do not realise the importance when enrolling learners into an online school. There is a general ignorance when it comes to technology in the older generation (parents) who believe a 10 year old device will suffice for today's software. This effects lower income families as the equipment is expensive.

DE schools Offer Quality Education under Limited ICT



Importance of Attitudes towards Online Learning

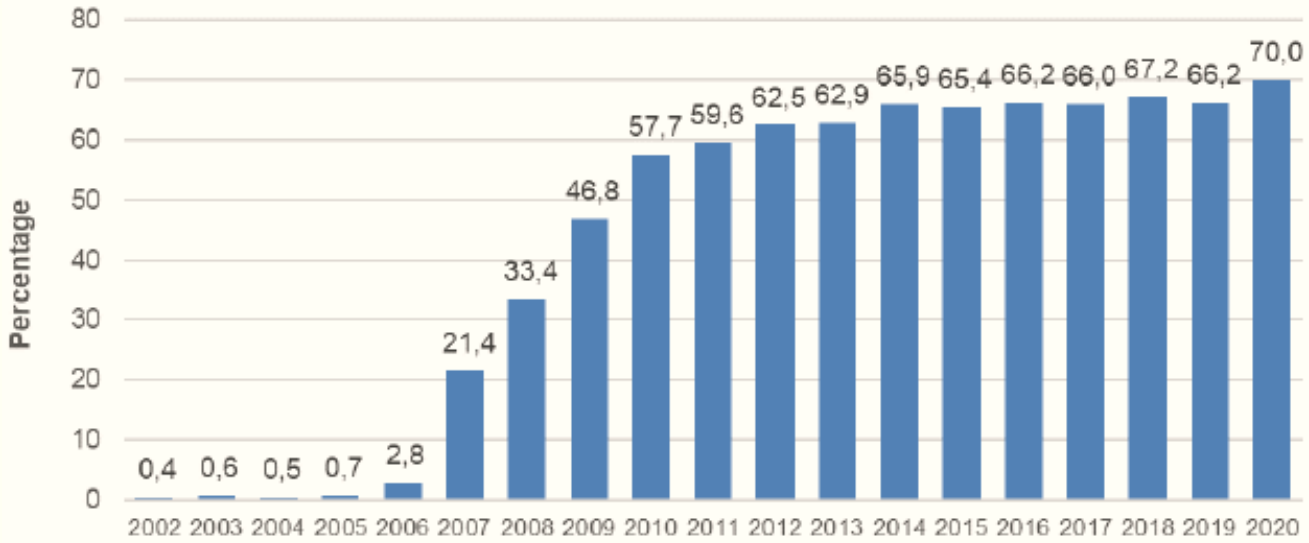
improving technology itself

using technology to improve
course design and course delivery

Effect of Student Population and Limited Government Subsidies

- 140 learners
- $366/annual

- 9,000 learners
- $122/annual



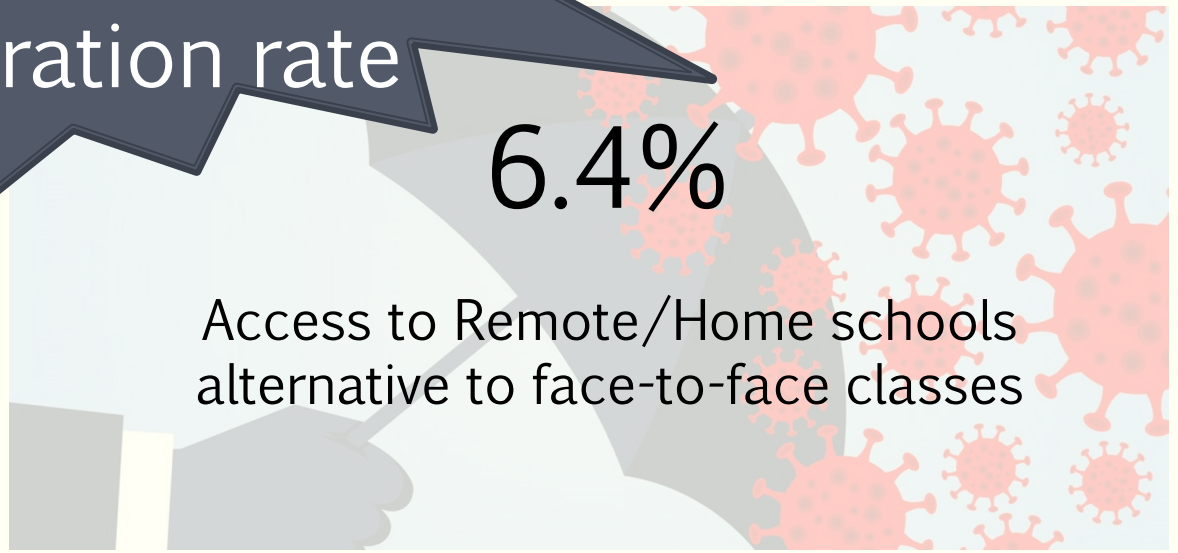
Percentage of individuals aged 5 and older who did not pay tuition fees, 2002–2020

Source: Statistic South Africa (2021)

DISCUSSION AND PROSPECTS

2. Quality of Education and Equity

in spite of
68% internet
penetration rate



6.4%

Access to Remote/Home schools
alternative to face-to-face classes

Assistance for Decreasing Educational Gaps

Digital inequalities are associated with…

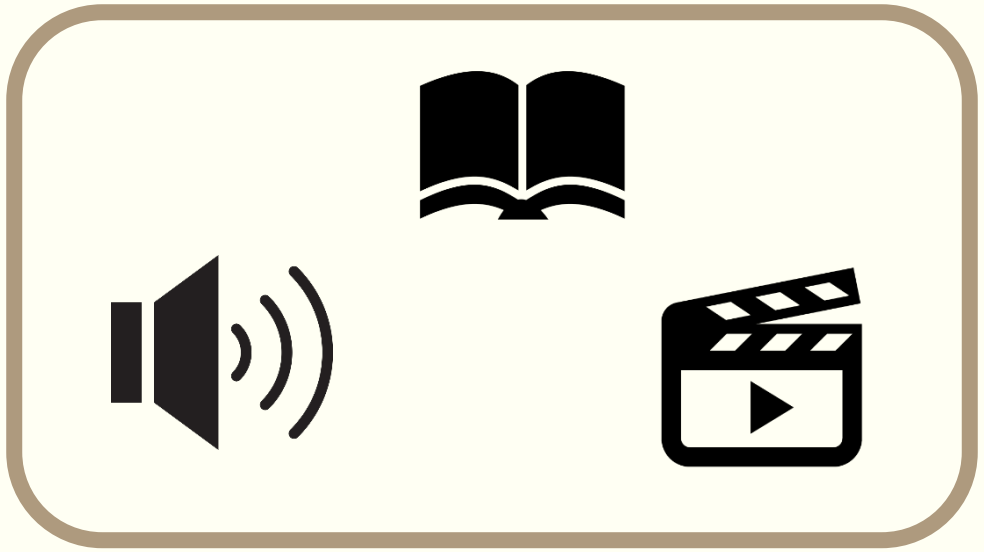
- Technology access
- Internet infrastructure
- Digital literacy
- Digital freedom
- Gender
- Technical support

Do instructors and technicians meet before the initial class and effectively cooperate in lessons?

Is enough time is given to mechanical instruction for students at the beginning of classes?

Do administrators focus more on cultivating attitude than introducing cutting-edge technologies?

Assistance for Decreasing Educational Gaps



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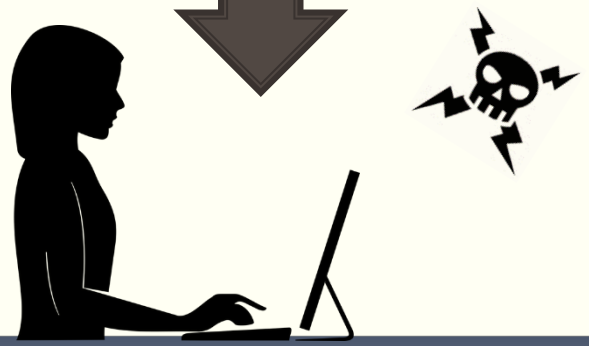
Suggestions for the Digitally Advanced Countries

Encouraging people to implement education software
to download applications to individual devices



Enable learners to continue studying offline

Suggestions for Countries where Digital Devices haven't Penetrated

Classrooms
Community Centres
Local Libraries
Cooperation of the DE institutions and the Local universities

Provide learners with opportunities to learn through Printed Materials, Radio Broadcasting, Television or the Public Internet.

CONCLUSION

Conclusion

Promoting equitable access

Delivering quality instruction to learners

Using technology properly

Considering financial management

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THANK YOU FOR YOUR TIME


ONAL JOINT MEETING
N STUDENT STUDIES
Joint Online Meeting
10 February, 2022
15:00-18:30
ZOOM
Meeting ID: 812 0029 1352
Pass cord: 999

Telehealth system for home isolation during the COVID-19 pandemic in Thailand

SPEAKERS

Nantanat Wilawanjit

Undergraduate student,
Faculty of Pharmaceutical
Sciences, Chulalongkorn University

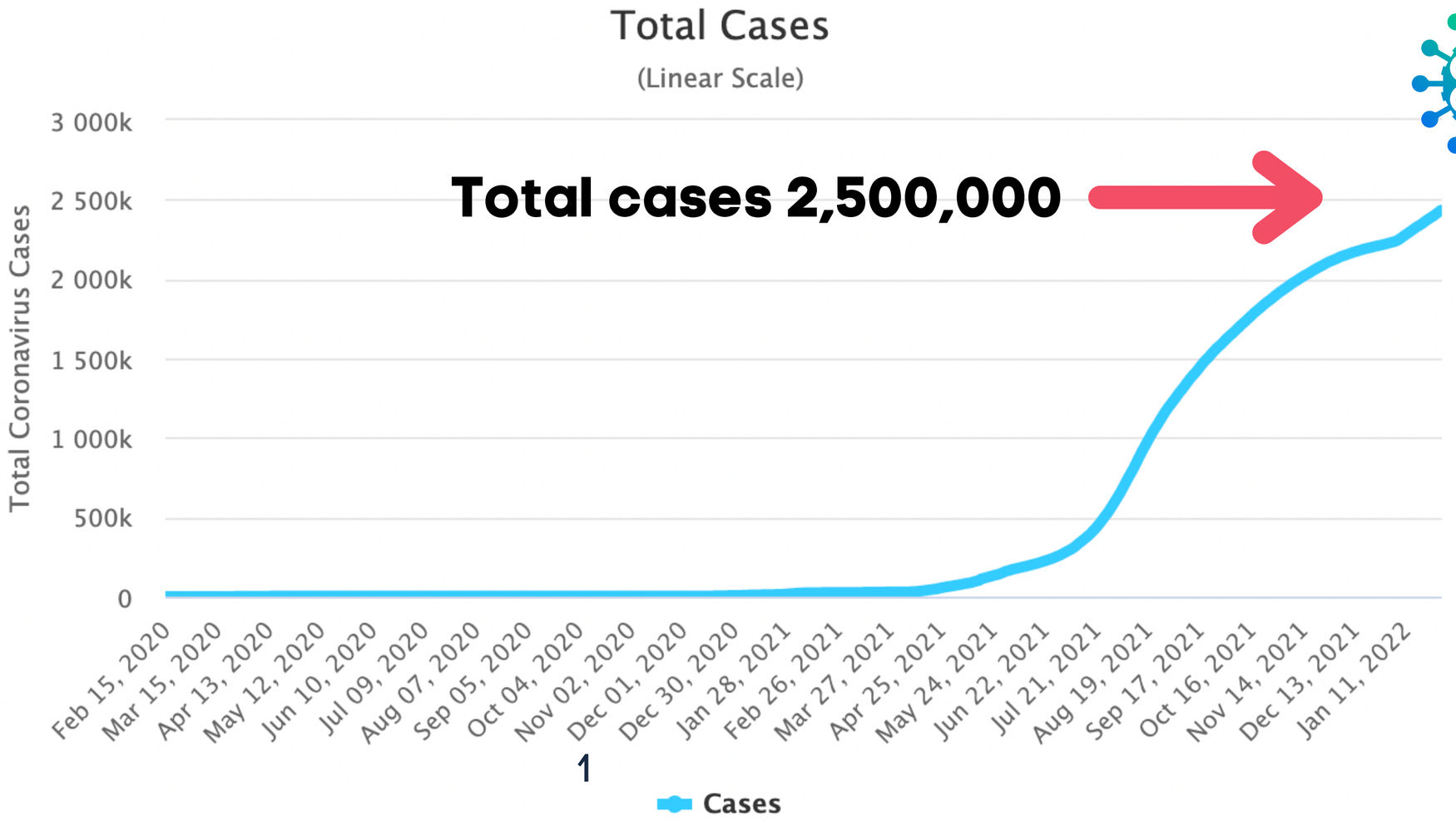
Natthasit Srithongin

Undergraduate student,
Faculty ofPharmaceutical Sciences,
Chulalongkorn University

Outline

COVID-19 SITUATION IN

Total Coronavirus cases

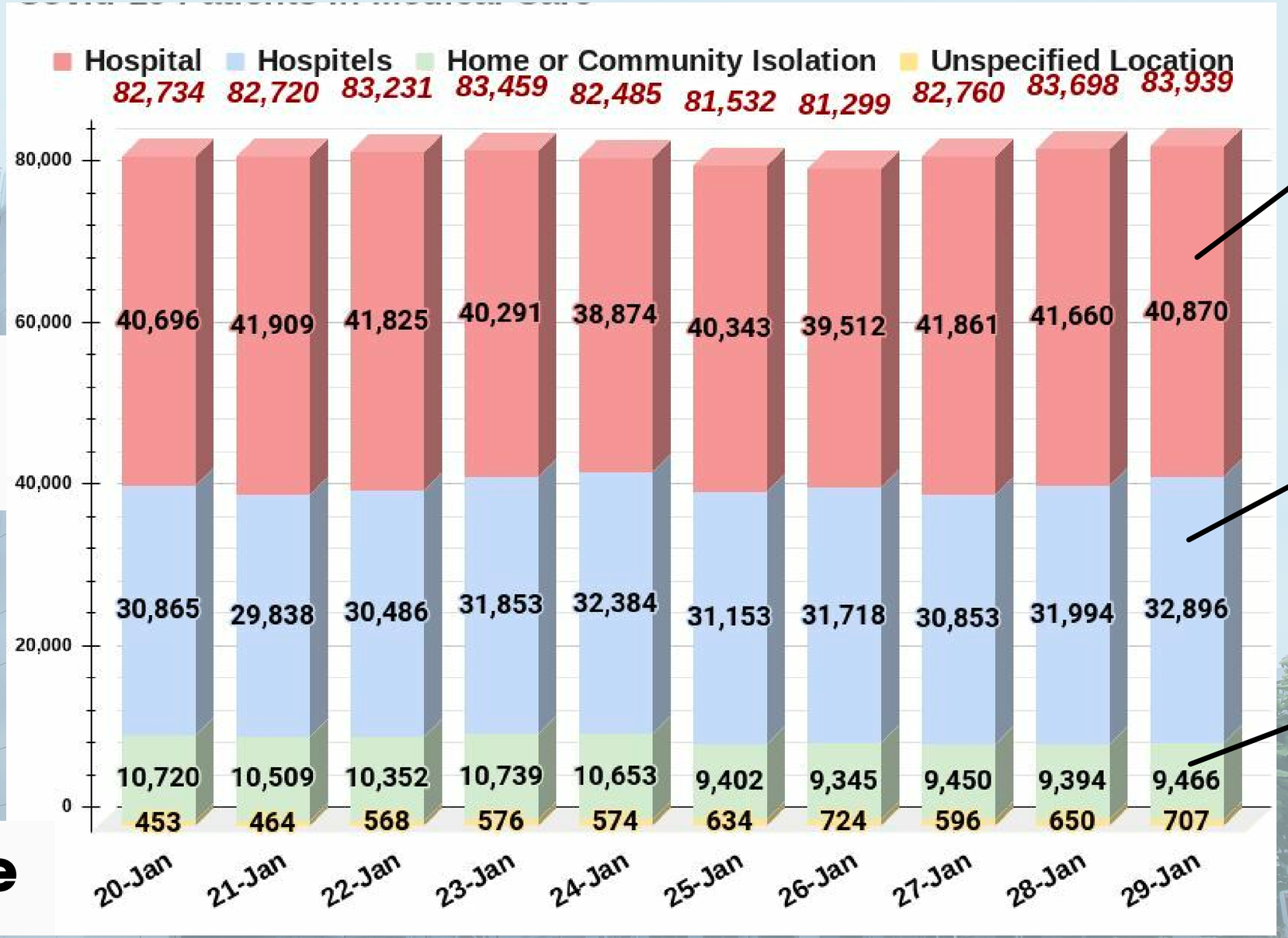


Total cases 2,500,000

Data on: 29 January 2022

Graph via:The Centre for COVID-19 Situation Administration of Thailand, 2022

Covid patient in medical care in Thailand

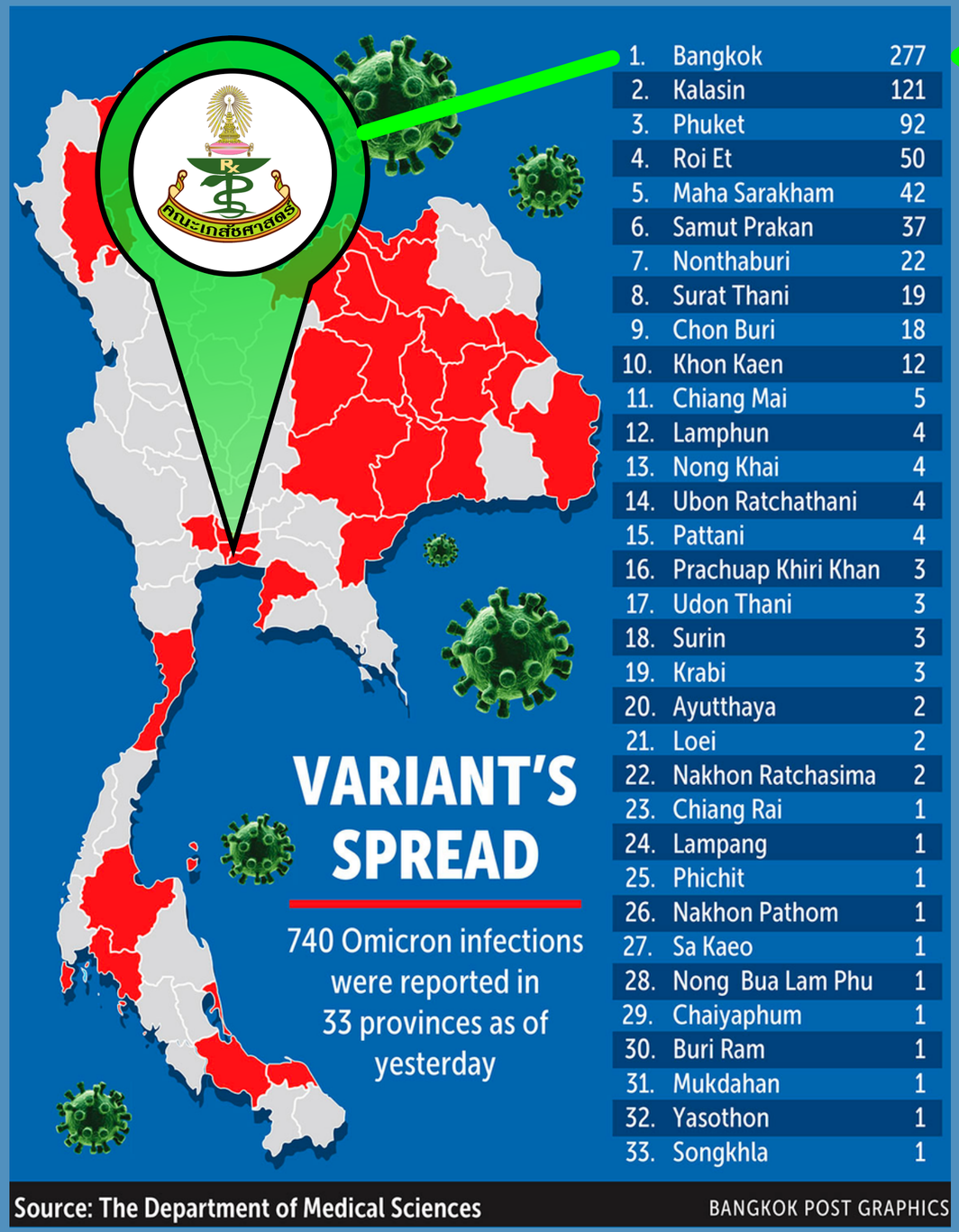


48% in hospitals

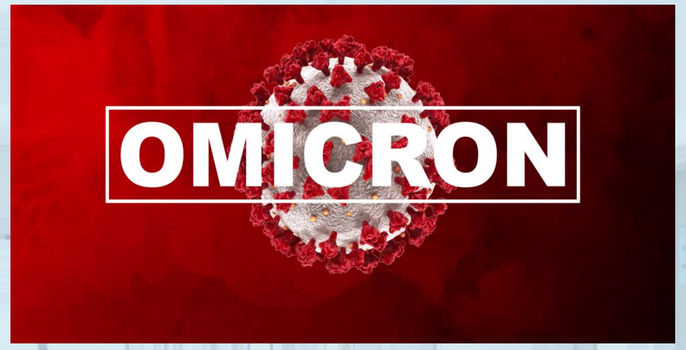
39% in hospitals

11.3% in hospitals

Graph via:The[89] Centre for COVID-19 Situation Administration of Thailand, 2022



OMICRON VARIANT



- Omicron is expected to cause a mild sickness with less serious symptoms as in most of people.

(The U.K. Health Security Agency,2021)

- Vaccinated people can become infected with Omicron. So, they are less likely to become critically sick.
- Some patients developed a mild lung infection but improved after three days of getting Favipiravir anti-viral therapy.

(Said Director-general of Department of Medical service, 2021)

OMICRON

- mild symptoms
- improve well after get Favipiravir

- Too many patients taking up beds in hospitals
- Due to their serious medical condition, some people require hospital beds.

HOME ISOLATION

AVAILABLE BED

WORK LOAD of Professional health care

EXPOSURE

DMS Telemedicine

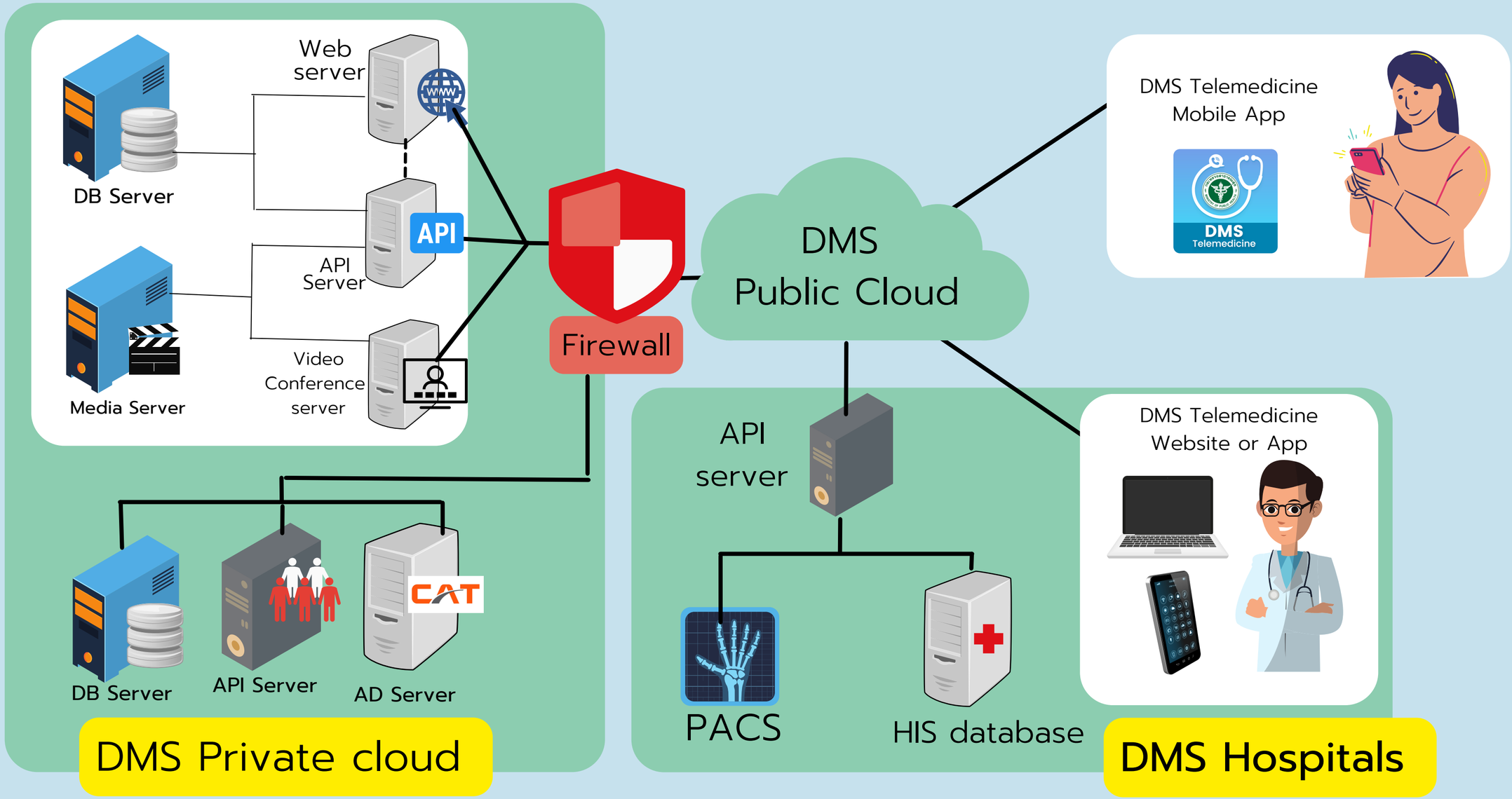
Hospiatl based medicine

Home based medicine

DMS Telemedicine

- Identity Verification system
- E-Consent before register
- VDO call recording whileusing

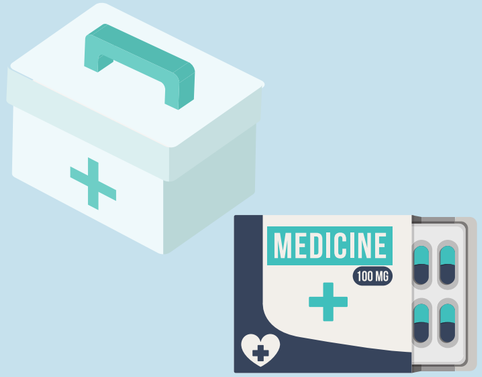
DMS TELE-MEDICINE SYSTEM ARCHITECTURE

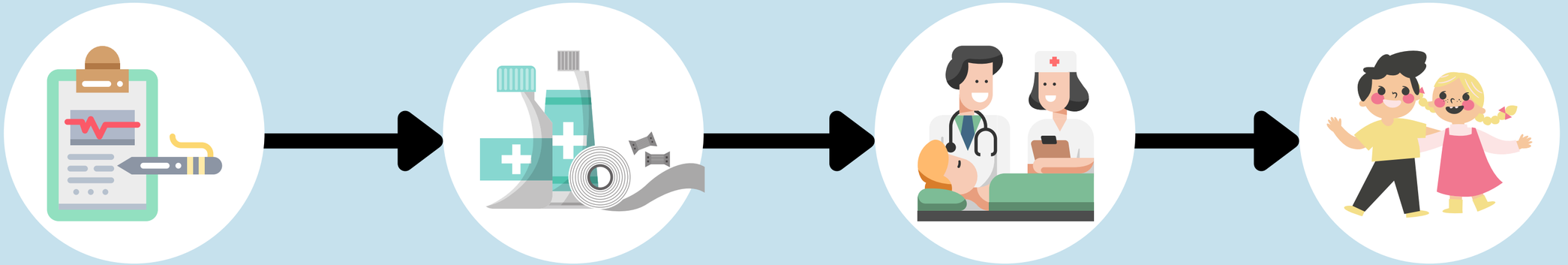


Data from: Dr.Pattarawin Attasara, Digital center of Department of Medical Service, 2021

กระทรวงสาธารณสุข
MINISTRY OF PUBLIC HEALTH
กรมการแพทย์
DEPARTMENT OF MEDICAL SERVICES

Home isolation management system





Patient Screening

Covid care set Delivery

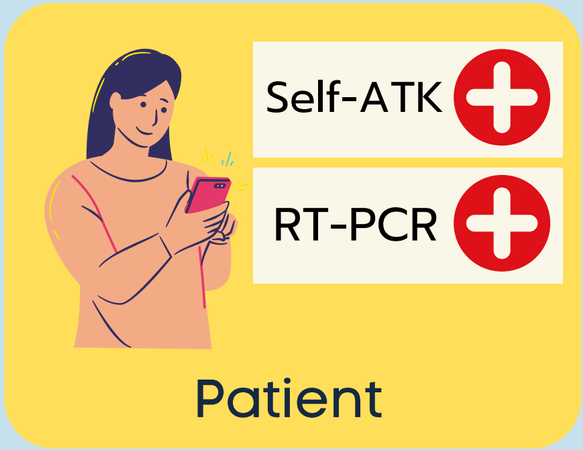
Monitor & Assessment

Discharge

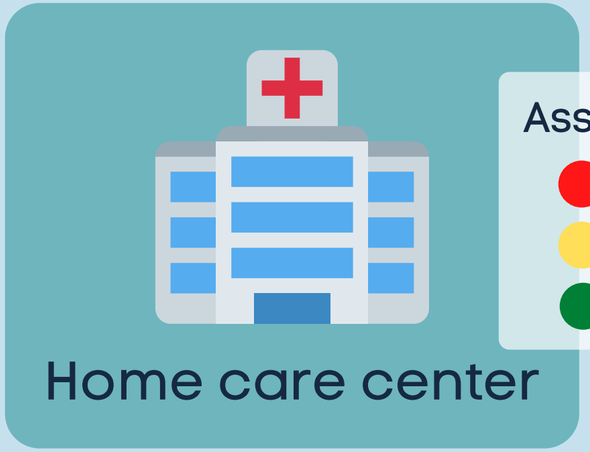
Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

1 Patient Screening

AMED Telehealth System



NHSO
CO-LINK



Assessment Unit

- Severe
- Moderate
- Mild

- Mild/No symptom

or

- Waiting for a hospital bed

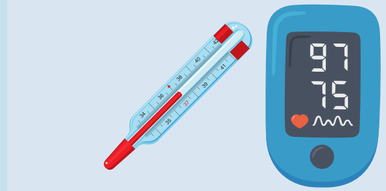
Patient admit to IT system

LINE

DMS Telemedicine

Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

2 Covid care set Delivery



Equipment

Consent form

Food

x 14 d

Favipiravir

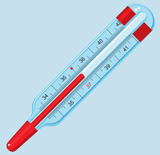
Home care center

Patient's Home

Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

3 Monitor & Assessment

Patient



Body Temp

Vital signs
SpO2

x 2
per day

Home care center

LINE

DMS
Telemedicine

Recovery

- Body Temp
- Vital signs
- SpO2

Dashboard

x 1
per day

Emergency call

Multidisciplinary
Team

4 Discharge

Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

Result:

- Time period: **3 month**
- COVID-19 patients who enrolled in Rajwiti's home isolation: **2,814**

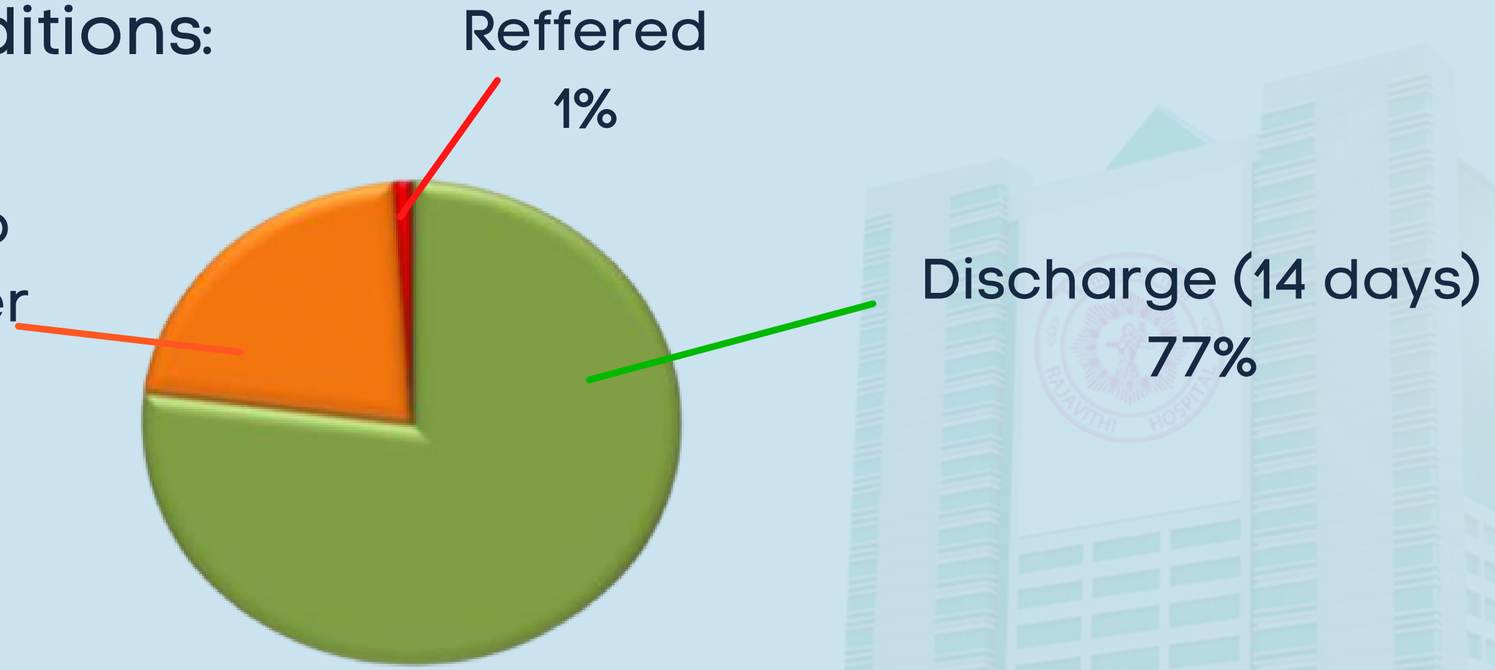
Accumulated patients enrolled HI	Recover	Refer	Death
2,814	2,714	99	1

- Average Home isolation stay: **9.35 Days**
- Unit cost/patient: **5,925.73฿/person (not include Favipiravir cost)**
- Averagesatisfaction percentage: **93%**

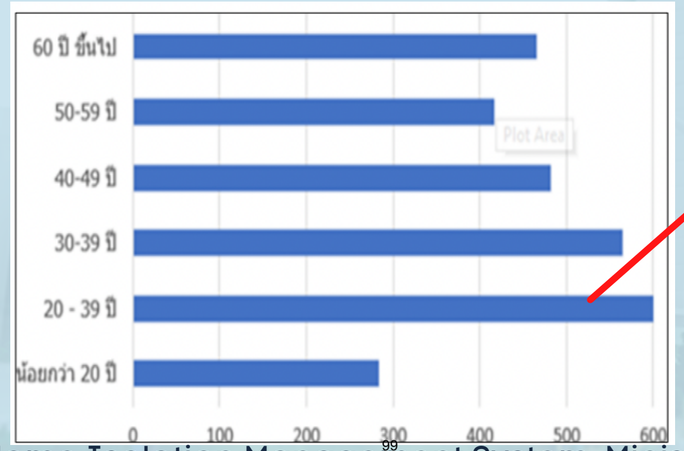
98 Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

Result:

- Patients conditions:



- Age Characteristic:



The majority of patients are between the ages of 20 and 39.

Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

Result:

- **Critical Success factors:**
  - Health care providers' collaboration
  - Technology and Communication tools
  - Adherence from patients

100 Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

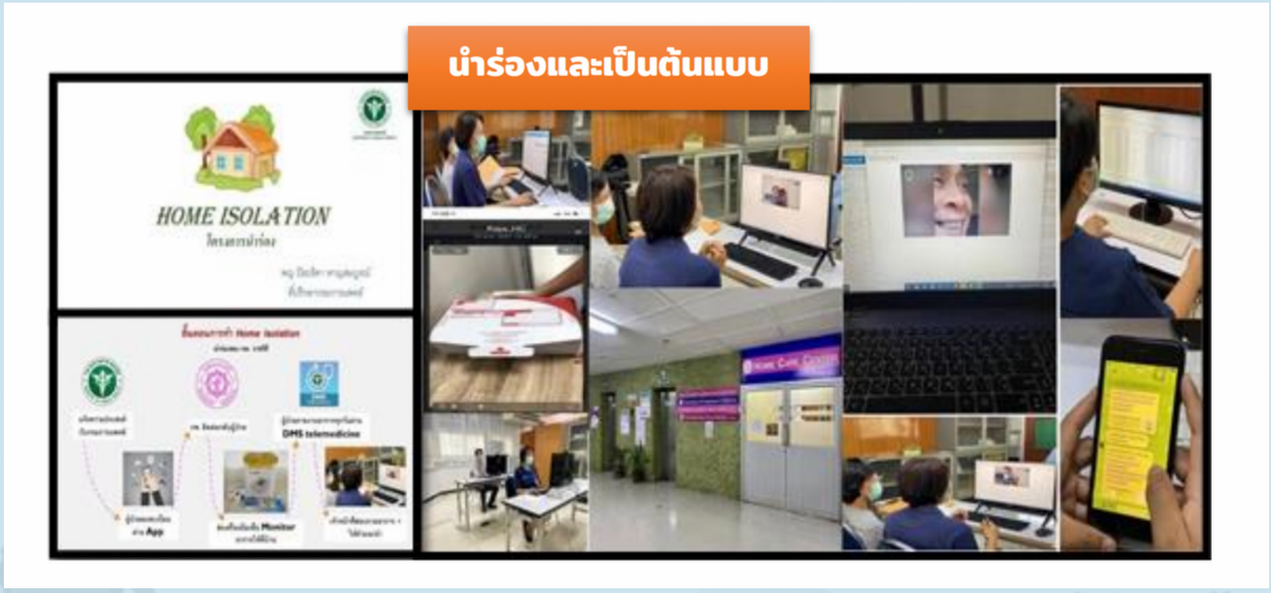
Result:

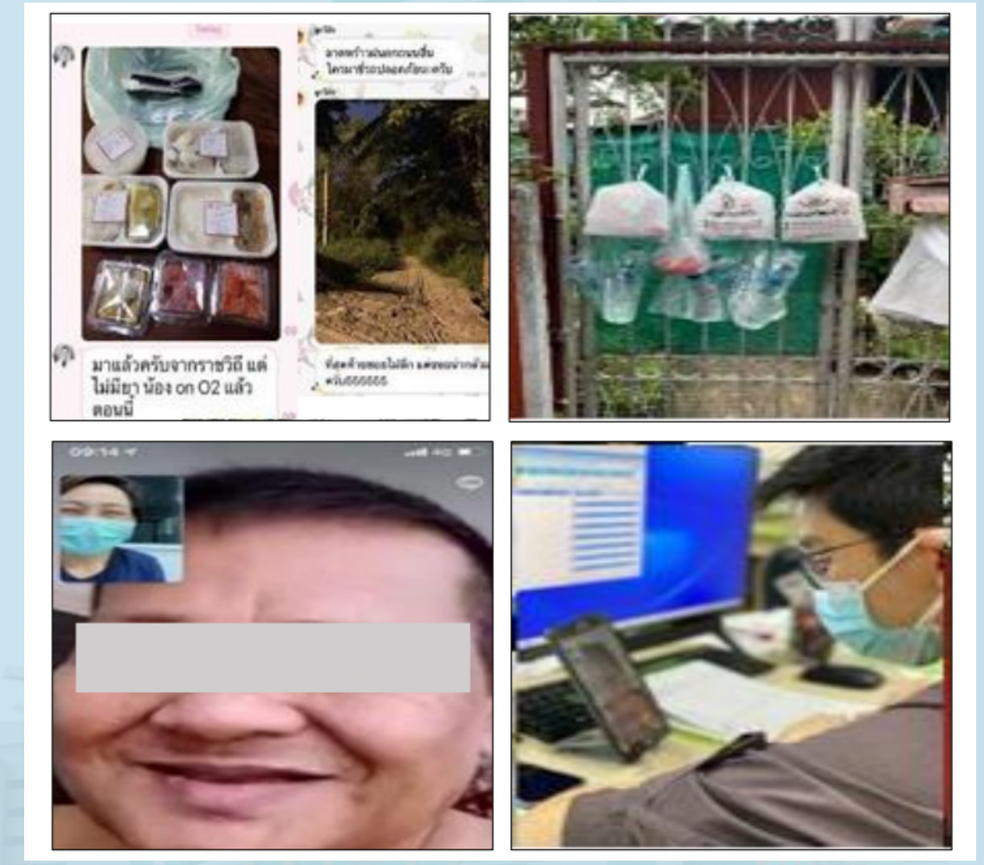
- **Problems and Solves:**
  - Location/Equipment
    - There is just a little area to operate this project through, and the equipment is insufficient for the growing number of patients.
    - **Solution**: Solution: Obtain some equipment from another hospital department.
  - Staff
    - The number of staff is insufficient to care for the patients.
    - **Solution**: Putting the appropriate individual in the right role to operate efficiently with a limited number of staff.
  - Patients
    - Some patients were unable to use DMS telemedicine technology.
    - **Solution**: monitoring by calling through telephone

101 Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

What we learn:

Opportunity for improvement:

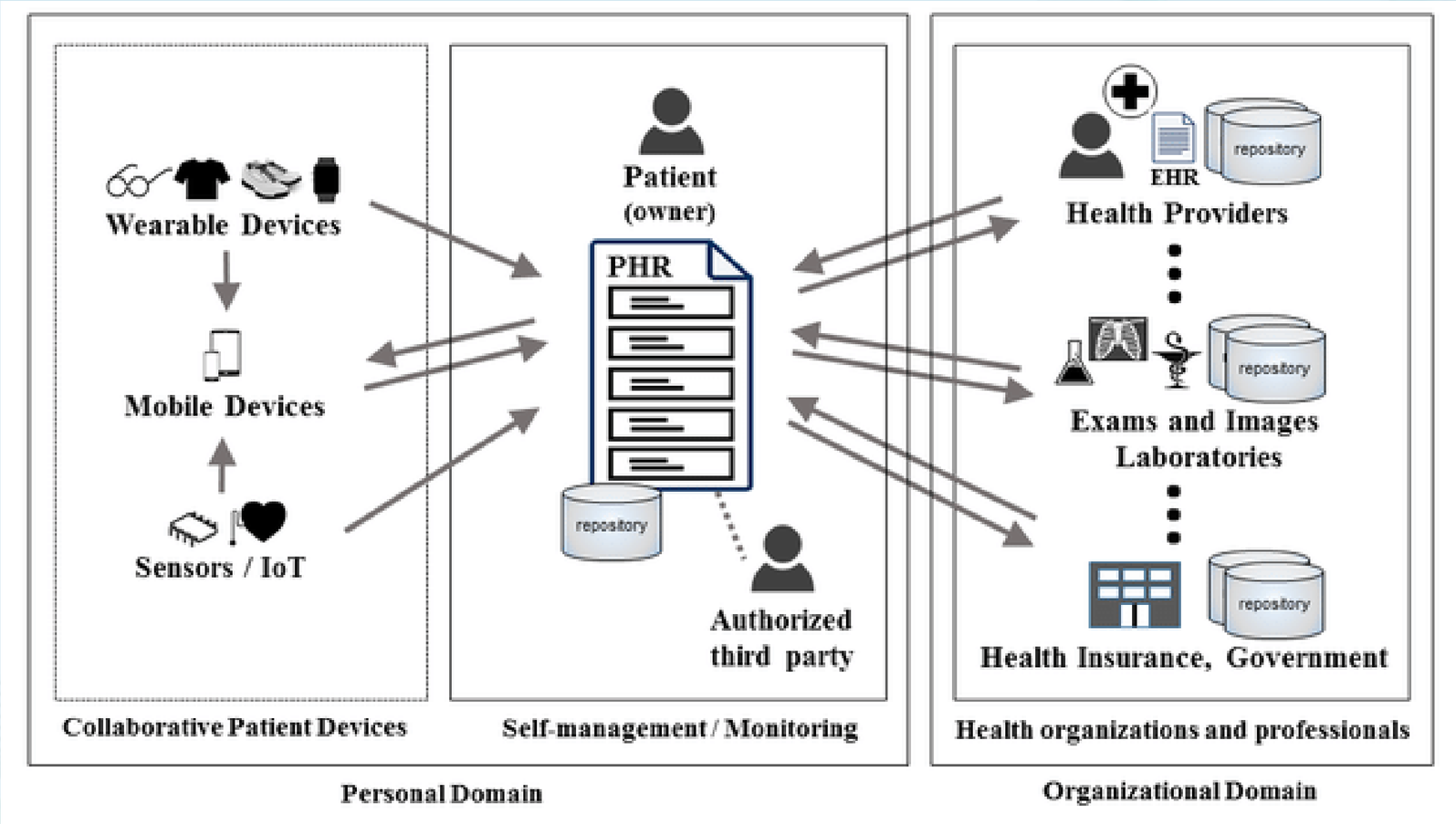




Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

What we learn:

Opportunity for improvement:



Personal Health Records: A Systematic Literature Review. 2017

Thank you for your attention
ขอบคุณครับ/ค่ะ

Telehealth system for home isolation during the COVID-19 pandemic in Thailand.

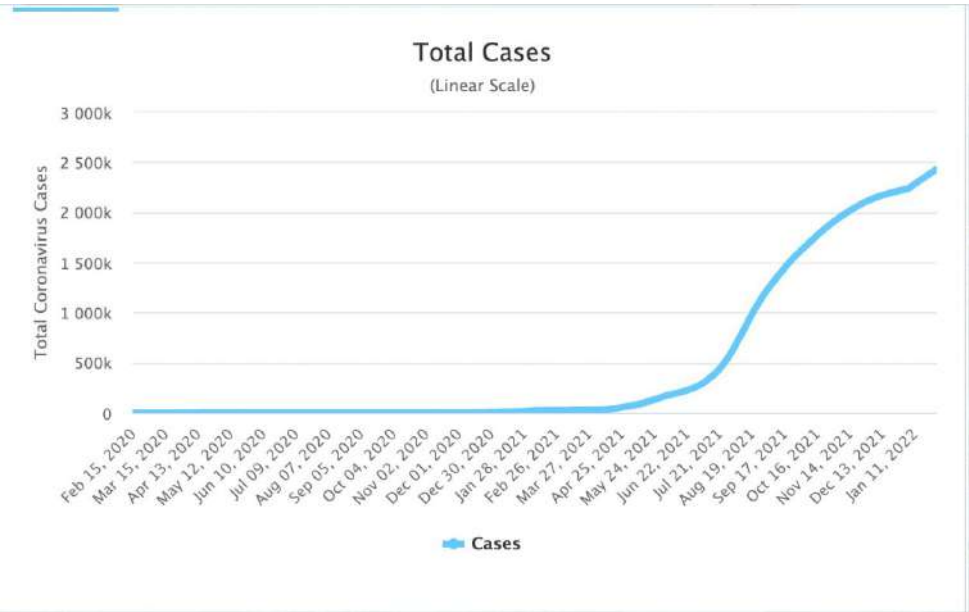
Nantanat Wilawanjit[1], Natthasit Srithongin[1]

[1] Pharmaceutical care, Faculty of Pharmaceutical Sciences, Chulalongkorn University

1. Covid-19 situation[1, 2, 3]

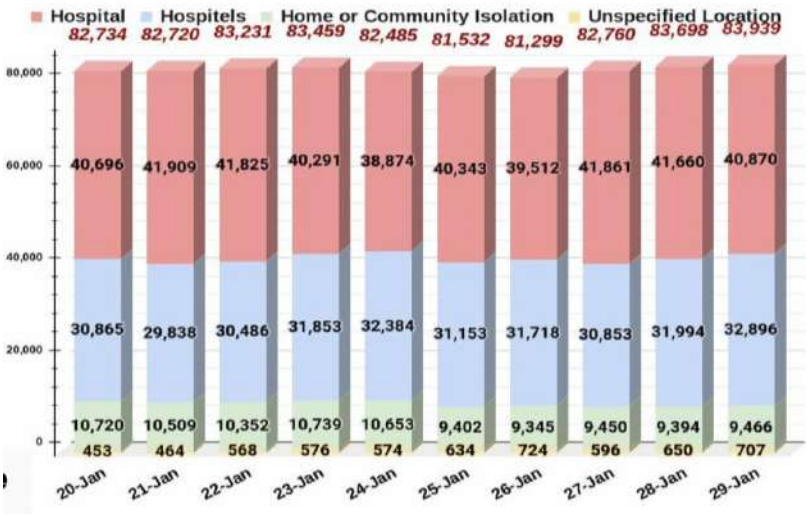
The COVID-19 outbreak has currently brought the whole planet to a stop. Also, in Thailand, the number of infected patients is rising. Numerous methods are being employed to address the issue, including telehealth systems growing increasingly popular.

As a result, several techniques may be used in Thailand to combat this epidemic and assist those affected.



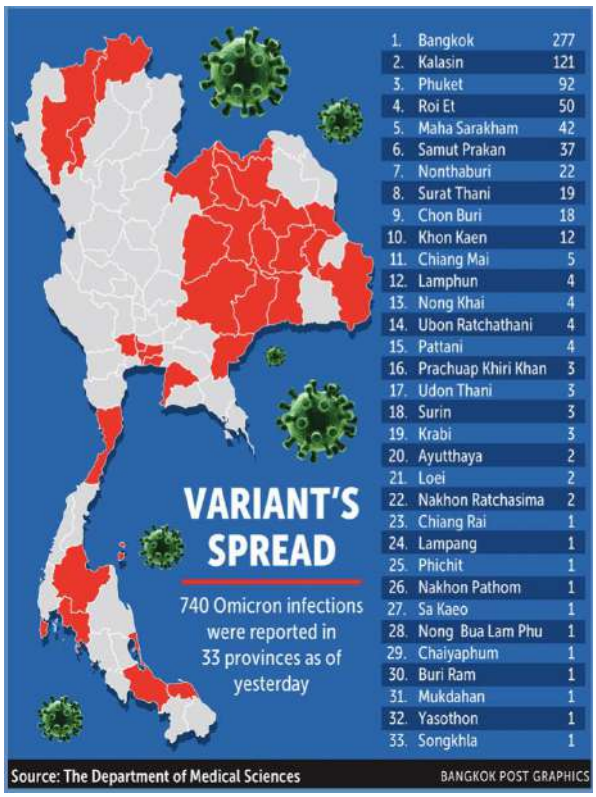
The Centre for COVID-19 Situation Administration of Thailand, 2022.

The Centre for Covid-19 Situation Administration (CCSA) in Thailand created a graphic depicting COVID-19 new infections on January 29, 2022. The graph reveals that the number of infected patients is rising and has now reached 2,500,000, with no signs of slowing down.[1]



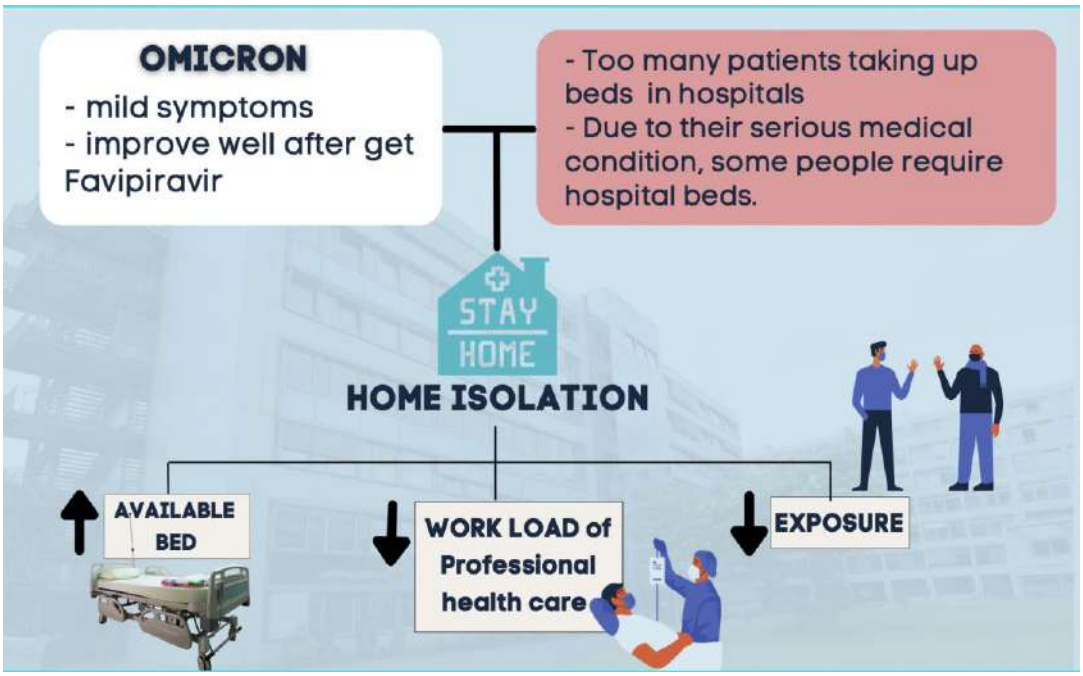
The Centre for COVID-19 Situation Administration of Thailand, 2022.

The outcomes are shown in the graph. The proportions of the places where covid-19 patients receive medical care are available. A significant number of covid-19 patients (48%) are hospitalized. Only 11.3 percent of patients receive medical care through a home or community isolation. According to the statistics, the hospitals are pretty crowded, and there are only a limited number of beds accessible for other patients who require hospitalization.[1]



Department of Medical Services, 2022.

Thailand has a high prevalence of Omicron. And indeed, Bangkok has the most Omicron-infected patients. According to the UK health service, those infected with Omicron are less likely to get critically sick.[2] Along with data from 100 documented omicron cases in Thailand, 48 patients have no symptoms, 41 have some symptoms, but none are on ventilators, and there have been no fatalities. Furthermore, they respond swiftly to Favipiravir, which is an antiviral medication.[3]

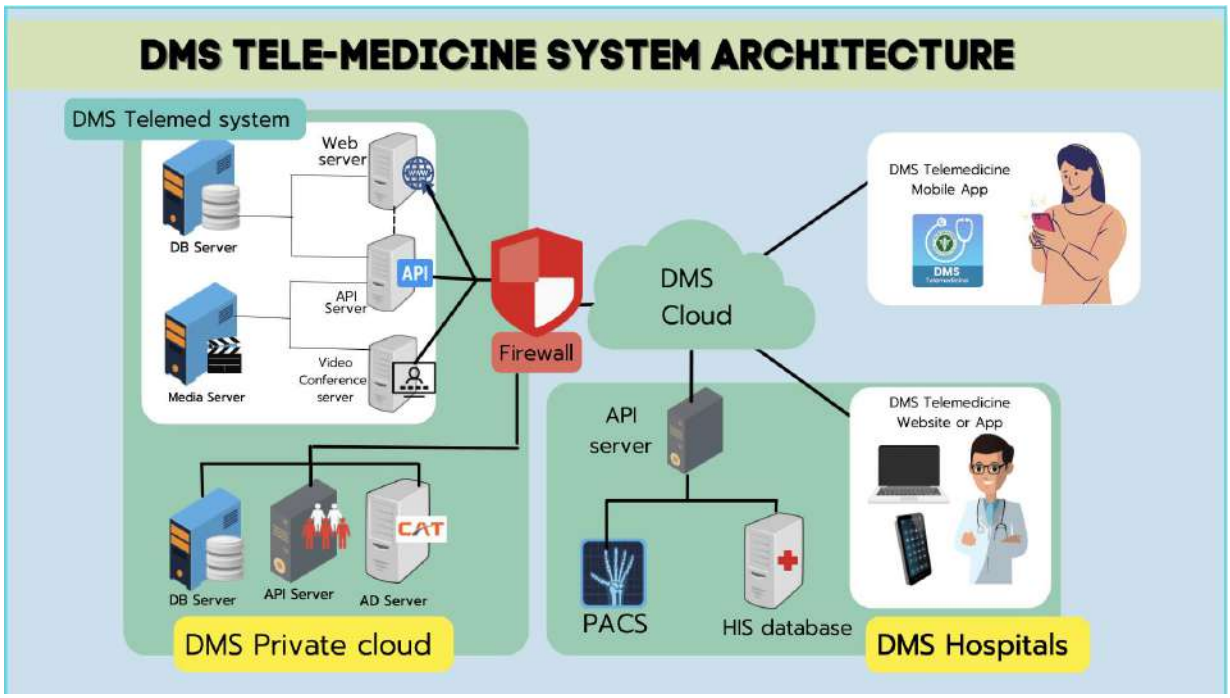


Therefore, in this case, home isolation may be utilized to free up hospital beds for people who need them. As a result, professional health workers have less work to do caring for patients who stay in hospital beds, and the risk of infection between health providers and infected patients is reduced

2. IT in-home isolation setting

2.1) DMS telemedicine[4]

"DMS telemedicine," a solution from the Ministry of Public Health's Department of Medical Services. To relieve the Omicron crisis, they transition from hospital to home-based care. DMS telemedicine can be accessed using many devices, such as a smartphone or a personal computer. Identity verification, VDO call recording, and E-consent before registration are all useful Telemedicine functions provided by DMS.



Dr Pattarawin Attasara, Digital centre of Department of Medical Services, 2021

The architecture of the DMS Telehealth system. According to the illustration, when patients enrol using their mobile phones, their data is kept in the cloud and delivered across the firewall to the DMS Private cloud. In the DMS private cloud, several servers are linked via the domain network, each with its function. First, An AD server, also known as an Active Directory server, serves as a domain controller. It verifies the identity of all network users. The API server, also known as the Application Programming Interface server, is used to get access to data, server software, or applications. A database server, often known as a database, is where an organized collection of structured information is stored.

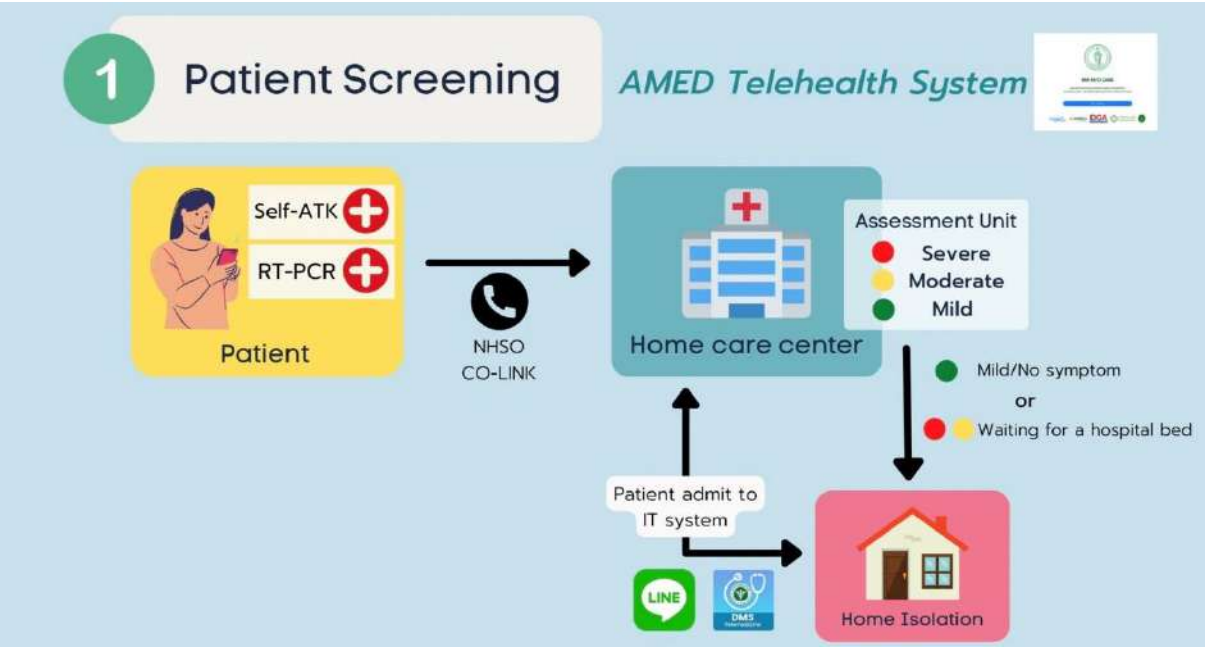
Some servers hold things like web, video conference recording, and media inside the white section. This is known as the DMS Telemedicine system.

PACS, or picture archiving and communication systems, are used in hospitals to run internal data that can sync with the cloud. HIS, or Hospital Information Systems, are internal systems used in hospitals to run internal data that can sync with the cloud. Doctors, nurses, and pharmacists may also use their devices to access this information in the cloud.

2.2) Home isolation management system[5]

Ministry of Public Health, Department of medical services comes up with the 'Home Isolation Management System' that meets the Telemedicine standard of Thailand, with the hope to successfully undergo the crisis.

Many affiliated hospitals such as Rajavithi hospital, National cancer institute, Lerdsin hospital, and more than 10 other hospitals applied this system to manage the patient doing self-isolation at home. The system consists of 4 simple steps as follows:



Step 1: Patient Screening

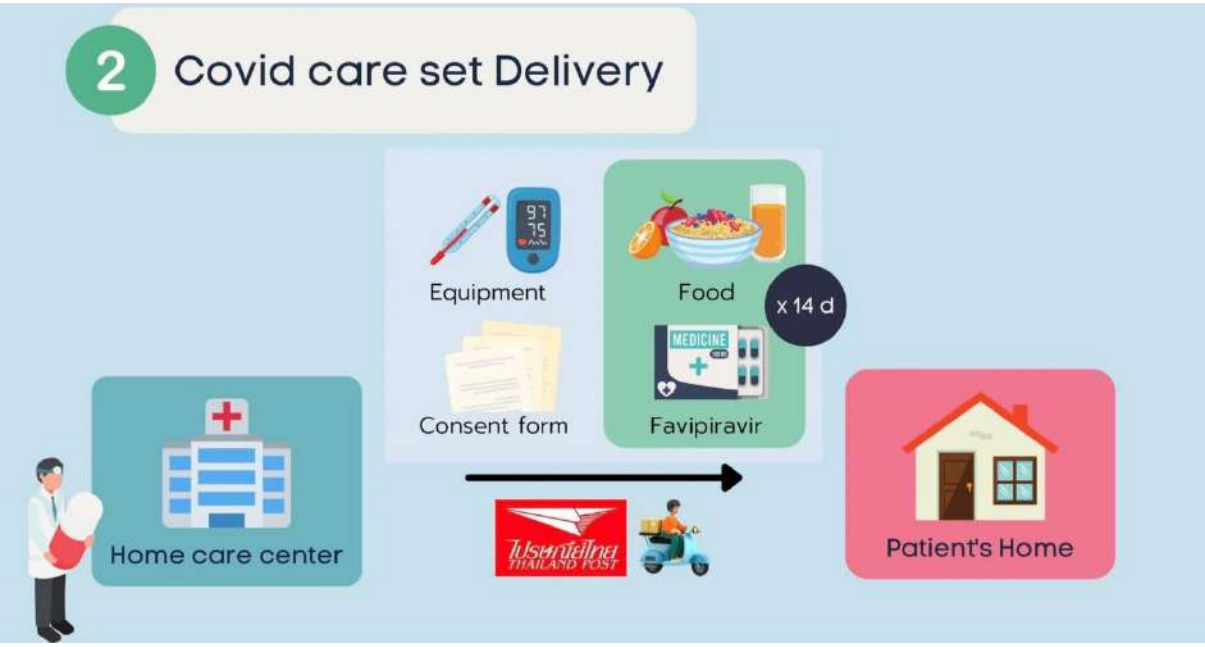
Individuals who are "persons under investigation" (PUI) with a "positive" result on the antigen test kit or "positive" impact on Reverse transcription polymerase chain reaction (RT-PCR) contact the National Health Security Office (NHSO) CO-LINK number 1330 or via LINE at @nhso. The patient's health information will be sent to the Home care centre of the affiliated hospital, and the symptom level was assessed to mild, moderate or severe.

Individuals with no symptoms to mild symptoms or Individuals with moderate to severe but waiting for a hospital bed can enrol to home isolation treatment. Officials will

constantly monitor, inquire, and look out for the symptoms and provide medicine and other necessities until they recover.

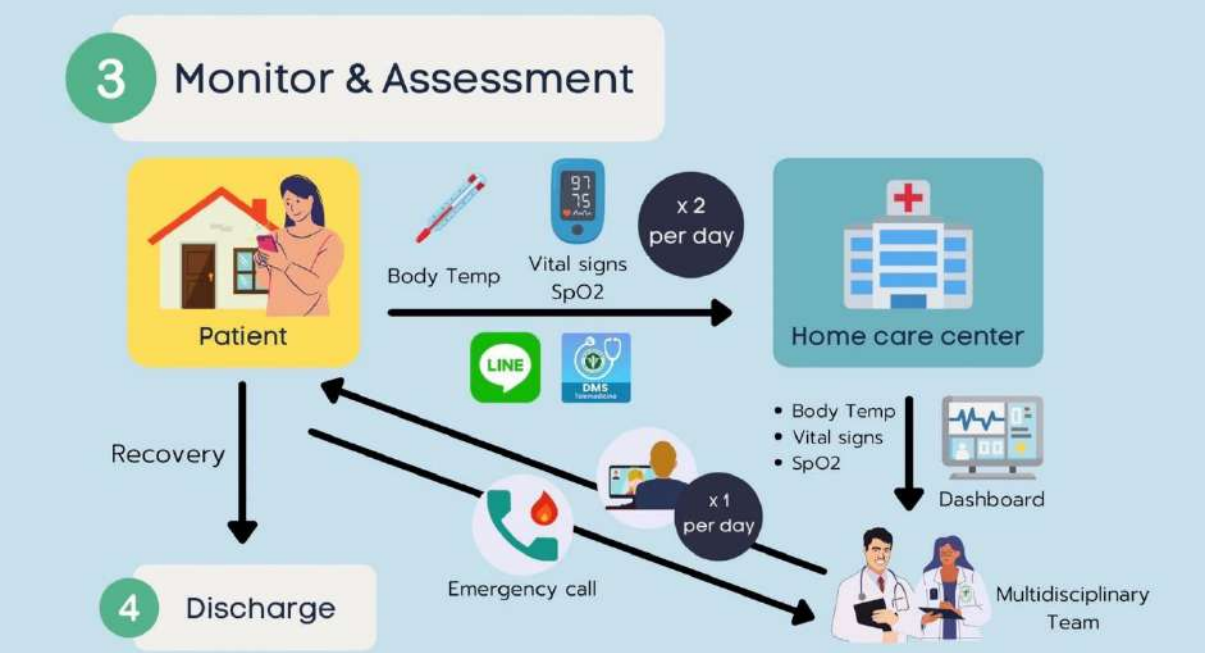
After that, Individuals with criteria will be connected and recorded the information onto to AMED Telehealth system of the hospital.

Finally, the patient adds LINE official account of the hospital and DMS-Telehealth mobile application. To log in, the patient must first register. The system will detect the patient's location and address and identify the patient for LINE ID by using the citizen number and the number on the back of the ID card to connect to the citizen database.



Step 2: Covid care set Delivery

Home care center will provide the covid care set including medical equipment such as pulse oximeter to measure oxygen and heart rate, a thermometer for temperature checking so that patient can send the data to the doctor, the consent form for home isolation treatment, with food and favipiravir antiviral drug for 14 days. This set will be sent to the patient's home through a Thailand post shipping company within 12 hours.



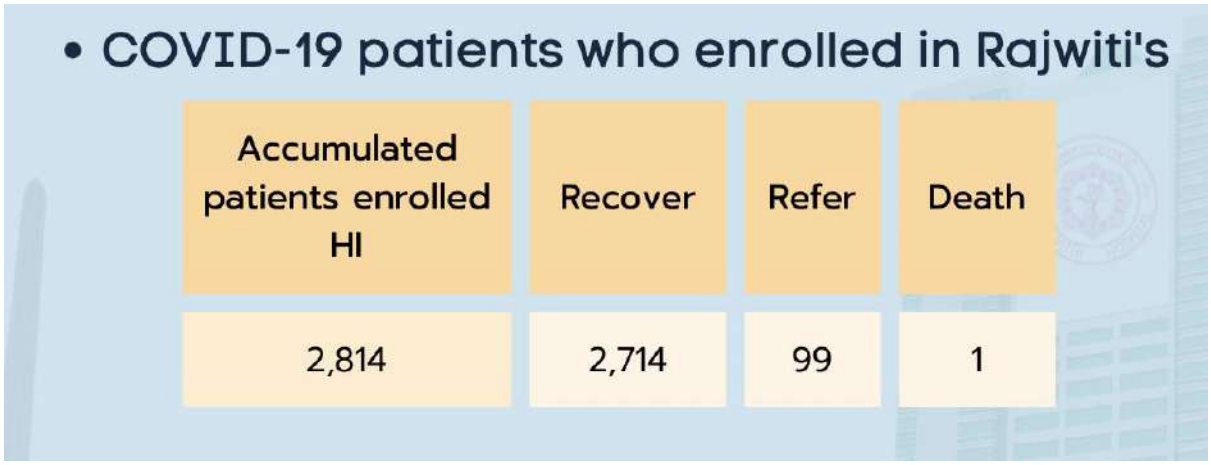
Step 3: Monitor & Assessment

The patient will send information related to vital signs, including oxygen, temperature, heart rates, through the LINE official account or DMS-Telehealth mobile application twice a day. This health record will be evaluated and presented in the dashboard to the multidisciplinary team containing physicians, nurses, and pharmacists. The team will monitor and assess the patient's symptoms through a dashboard and video conference every day. The patient can contact a physician directly by a hotline call centre in an emergency.

Step 4: Discharge

After patients recover, they can be discharged from the home isolation system.

2.3) Result[5]



Home Isolation Management System. Ministry of public health, Department of medical services. 2022.

The average length of stay in home isolation is 9.35 days. As a result, 2,814 patients participated in this throughout three months. 2,714 individuals recovered from infection.

The cost for each patient is 5,925.73 baht (not include favipiravir because it is about the policy due to the government). Furthermore, there is a 93 percent patient satisfaction rate.

Critical success factors in the healthcare system include interdisciplinary teamwork, technology, and tools that support their operations or activities. And good patient behaviour, such as following instructions, can help ease their symptoms.

There are particular challenges, such as limited operating space, insufficient equipment, and some patients who cannot utilize DMS telemedicine. The following are the solutions: Solicit materials from another hospital department. Putting the appropriate person in the right job to manage the project efficiently, observing via telephone calls

3. What did we learn?

The conclusion is that telemedicine is being used to help resolve many current healthcare issues, including the COVID-19 outbreak. DMS telemedicine is a beautiful example of how technology may improve healthcare services such as home isolation by allowing patients to get healthcare and consult doctors without attending hospitals. It enhances convenience by saving time and lowering the danger of exposure. However, some groups of people in Thailand do not have access to this platform and the staff and equipment required to care for their patients.

PHR, or personal health record, maybe the next step in the future(D). Because of the architectural structure, patients' data and recording data are stored on the cloud and in a database. Furthermore, the hospital information system can connect to the cloud. As a result, it may appear more accessible in the future to store data on the cloud and seek data from the cloud. It significantly improves access to patient information in emergencies, the management of information from numerous providers, and patient-provider communication.

References

1. Center for COVID-19 Situation Administration. Daily COVID-19 Reports [Internet]. 2022, [Cited January 29]. Available from: https://www.moicovid.com.

2. Emily Crane. Omicron is milder than Delta, leaked UK government study finds [Internet]. 2021, [Cited December 22]. Available from: https://nypost.com/2021/12/22/omicron-is-milder-than-delta-uk-study-finds/

3. Thai PBS world. Thailand unveils plans to cope with Omicron COVID variant outbreak [Internet]. 2021, [Cited December 27]. Available from: https://www.thaipbsworld.com/thailand-unveils-plans-to-cope-with-omicron-covid-variant-outbreak/

4. Pattarawin Attasara. DMS Virtual hospital DMS Telemedicine (A way to personal -based medicine) [internet]. 2021, [Cited December 27]. Available from: https://ict.dmh.go.th/events/events/files/Telemed%20%E0%B8%81%E0%B8%A3%E0%B8%A1%E0%B8%88%E0%B8%B4%E0%B8%95_%E0%B8%9C%E0%B8%AD.%E0%B8%A0%E0%B8%B1%E0%B8%97%E0%B8%A3%E0%B8%A7%E0%B8%B4%E0%B8%99%E0%B8%91%E0%B9%8C.pdf

5. Department of Medical Services. Home Isolation Management [Internet]. 2022, [Cited January 29]. Available from: https://covid19.dms.go.th/backend/Content/Content_File/Covid_Health/Attach/25650105180407PM_80%E0%B8%9B%E0%B8%B5HomeIso.pdf


DNAL JOINT MEETING
N STUDENT STUDIES
Joint Online Meeting
10 February, 2022
15:00-18:30
ZOOM
Meeting ID: 812 0029 1352
Pass cord: 999

Bachelor of Education Thesis

A Reliable Method for Innovative Lesson Improvement

Chiba University

Tomomi Kubota

Abstract

Lesson improvement

Action Research

Groupthink

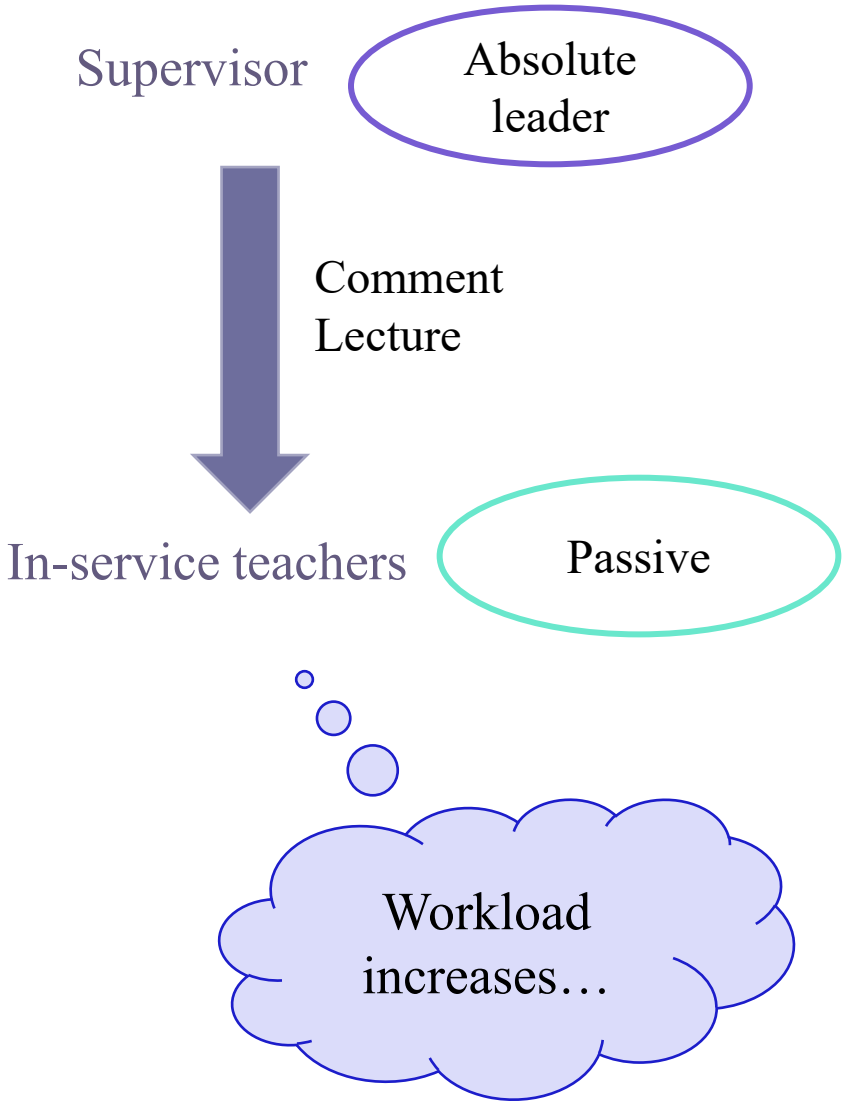
Collaborative Action Research

Simulation

Analytic Hierarchy Process

Introduction

General lesson improvement training in Japan



Two issues

1. Perspective is limited to teachers in school

⇒ Perspectives of various experts

2. There are an absolute leader

⇒ Suited the characteristics of the class

Action research(AR)

Collaborative action research(CAR)

Analytical hierarchy process (AHP)

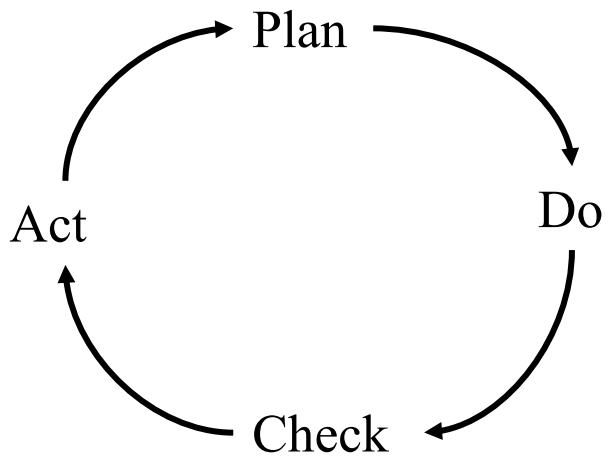
Contents

1 Theoretical background

1.1 Action Research(AR)

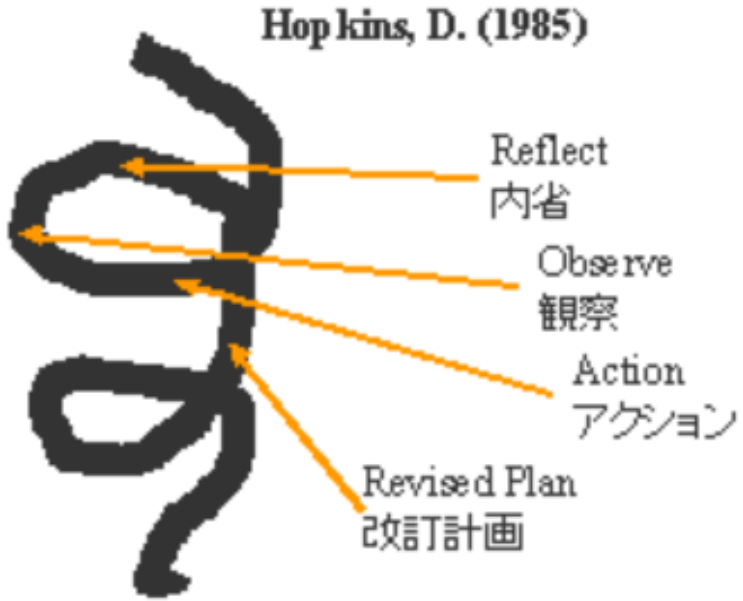
PDCA

One cycle



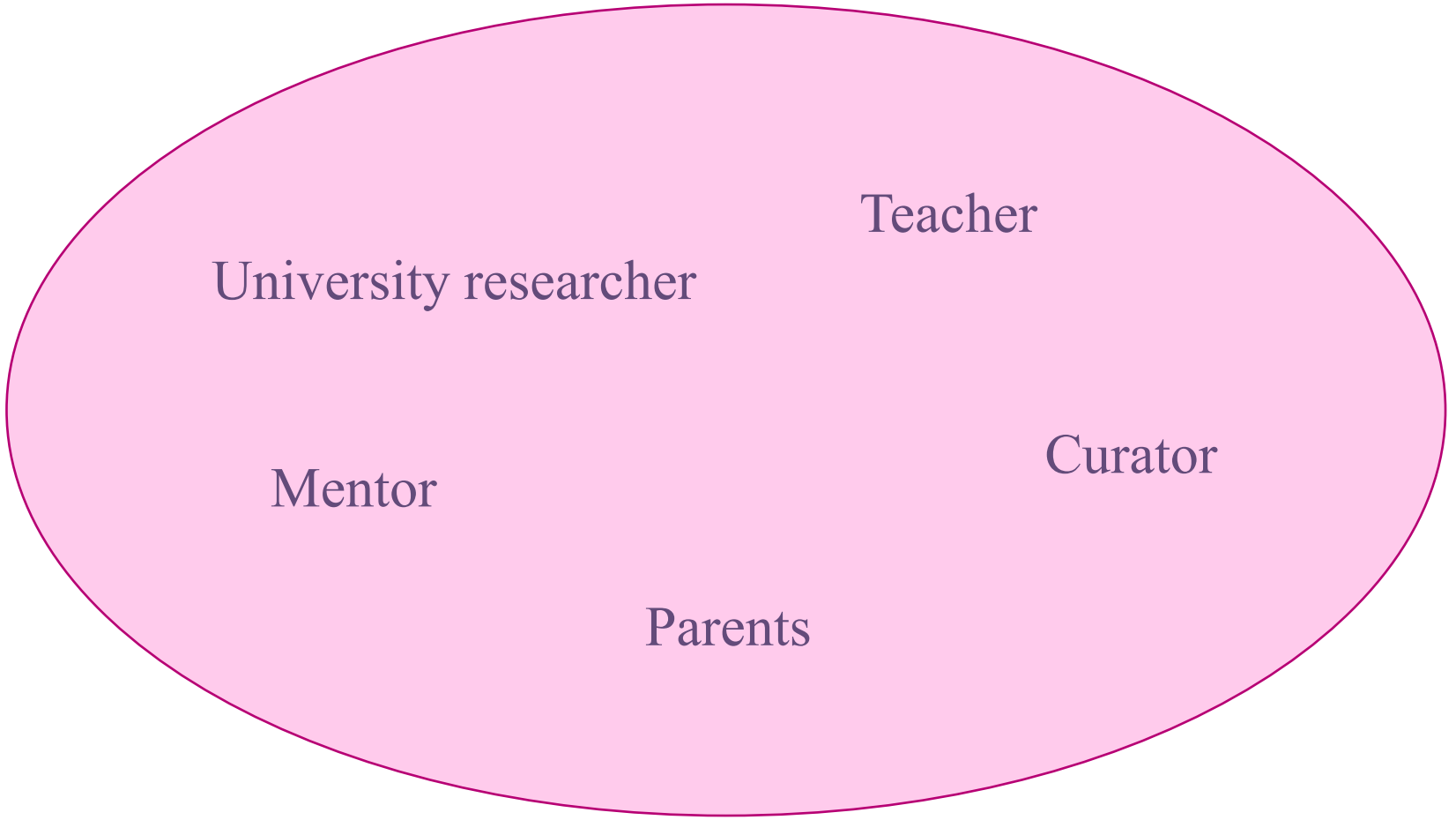
Action research

Several cycle
(spiral)



1.2 Collaborative Action Research(CAR)

Collaboration of various experts



1.3Analytic Hierarchy Process(AHP)

AR: Revised plan is important

↓

Decision-making(AHP)

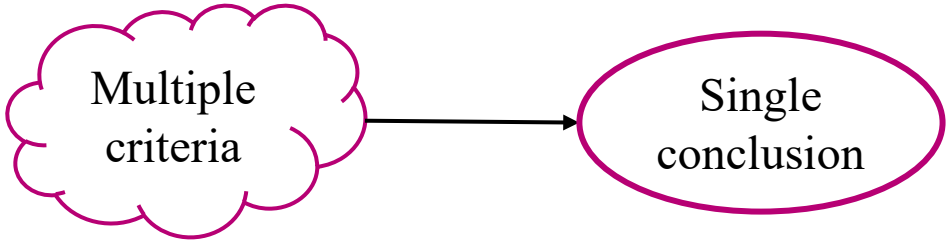


TABLE 1. Intensity of pairwise comparisons.

Intensity	Definition
9	Absolutely A
7	Very much A
5	Much more A
3	Somewhat A
1	Neutral
1/3	Somewhat B
1/5	Much more B
1/7	Very much B
1/9	Absolutely B

measure human subjectivity using words

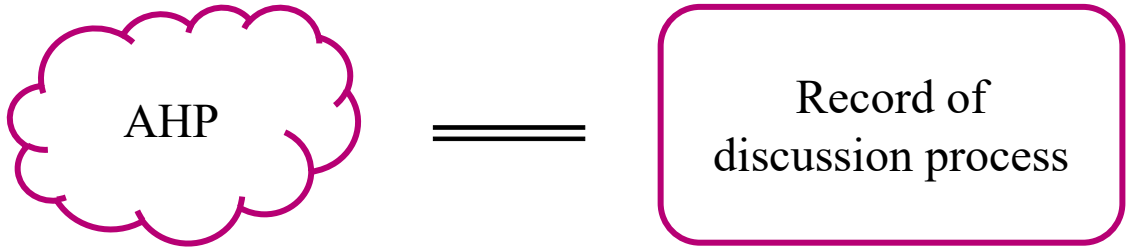
Consistency index(CI)

CI <0.1–0.15 →not contradict

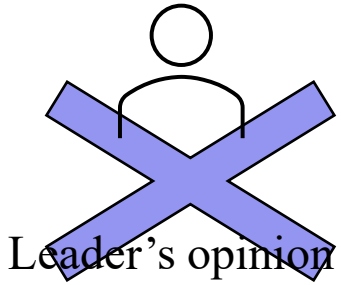
1.3 Analytic Hierarchy Process(AHP)

Two effects

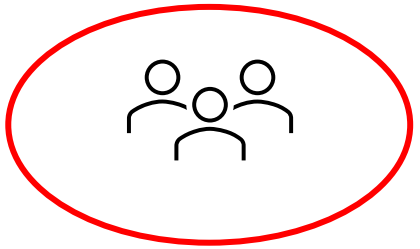
1. Shows rationale and explains the decision-making process



2. Obtains consensus

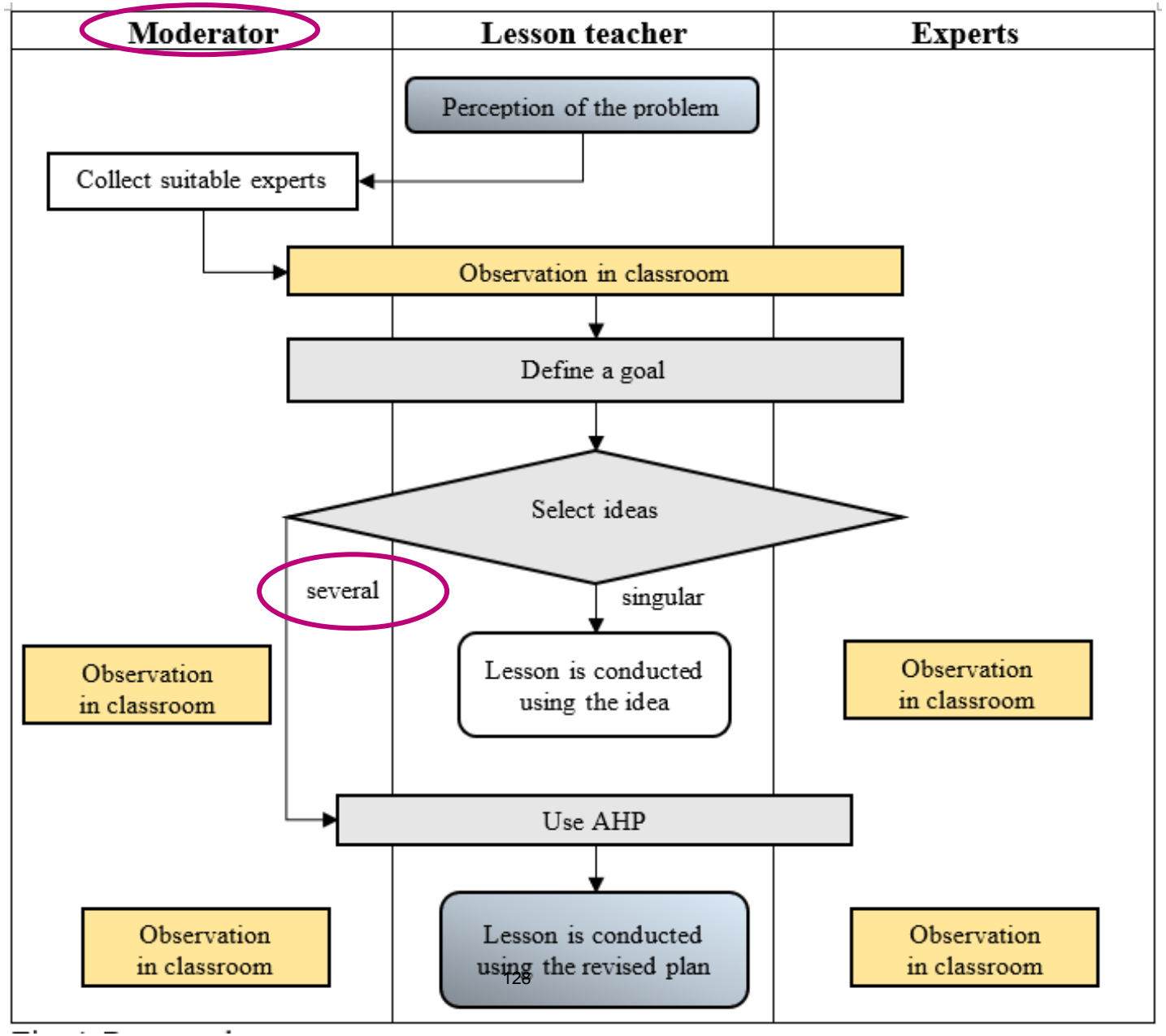


Understand each other → consensus

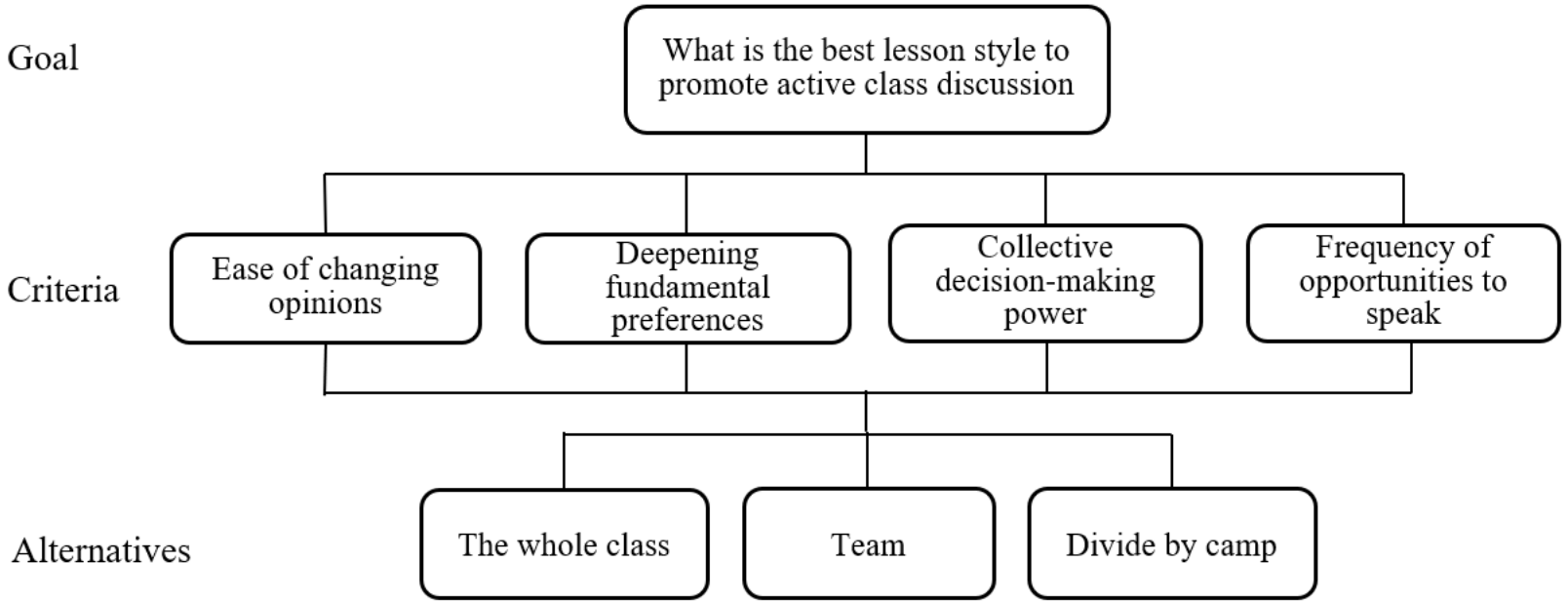


2 Result

Model(Combination of AHP and CAR)



Hierarchy diagram



Criteria:

C1: *Ease of changing opinions*
C2: *Deepening fundamental preferences*
C3: *Collective decision-making power*
C4: *Frequency of opportunities to speak*

Alternatives:

A1: *The whole class (raise their hand and answer one by one)*
A2: *Team (create a team of four with different opinions)*
A3: *Divide by camp (form groups of people with the same opinion and discuss)*

TABLE 2

Criteria	C1	C2	C3	C4	Geometric mean	Normalized weight
C1	1	1	5	1/5	1.0000	0.1715
C2	1	1	3	1/5	0.8801	0.1510
C3	1/5	1/3	1	1/7	0.3124	0.0536
C4	5	5	7	1	3.6371	0.6239
total					5.8296	1.0000
C.I.						0.0526

Pairwise comparison of alternatives

TABLE 3. C1

C1	A1	A2	A3	Geometric mean	Normalized weight
A1	1	1/5	3	0.8434	0.1884
A2	5	1	7	3.2711	0.7306
A3	1/3	1/7	1	0.3625	0.0810
total				4.4770	1.0000
C.I.					0.0324

TABLE 4. C2

C2	A1	A2	A3	Geometric mean	Normalized weight
A1	1	1/3	1/7	0.3625	0.0879
A2	3	1	1/3	1.0000	0.2426
A3	7	3	1	2.7589	0.6694
total				4.1214	1.0000
C.I.					0.0035

TABLE 5. C3

C3	A1	A2	A3	Geometric mean	Normalized weight
A1	1	1/5	5	1.0000	0.2185
A2	5	1	7	3.2711	0.7147
A3	1/5	1/7	1	0.3057	0.0668
total				4.5768	1.0000
C.I.					0.0914

TABLE 6. C4

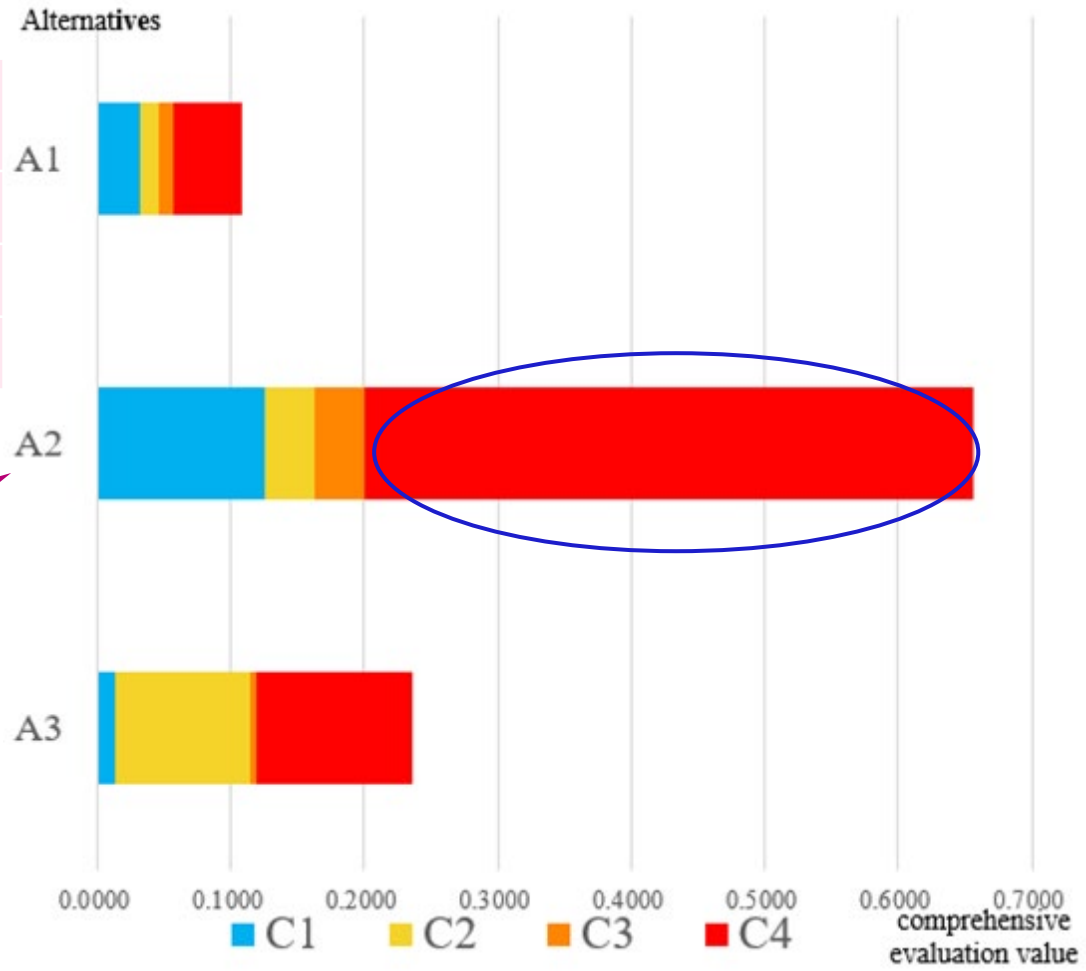
C4	A1	A2	A3	Geometric mean	Normalized weight
A1	1	1/7	1/3	0.3625	0.0810
A2	7	1	5	3.2711	0.7306
A3	3	1/5	1	0.8434	0.1884
total				4.4770	1.0000
C.I.					0.0324

Comprehensive evaluation value

TABLE 7.

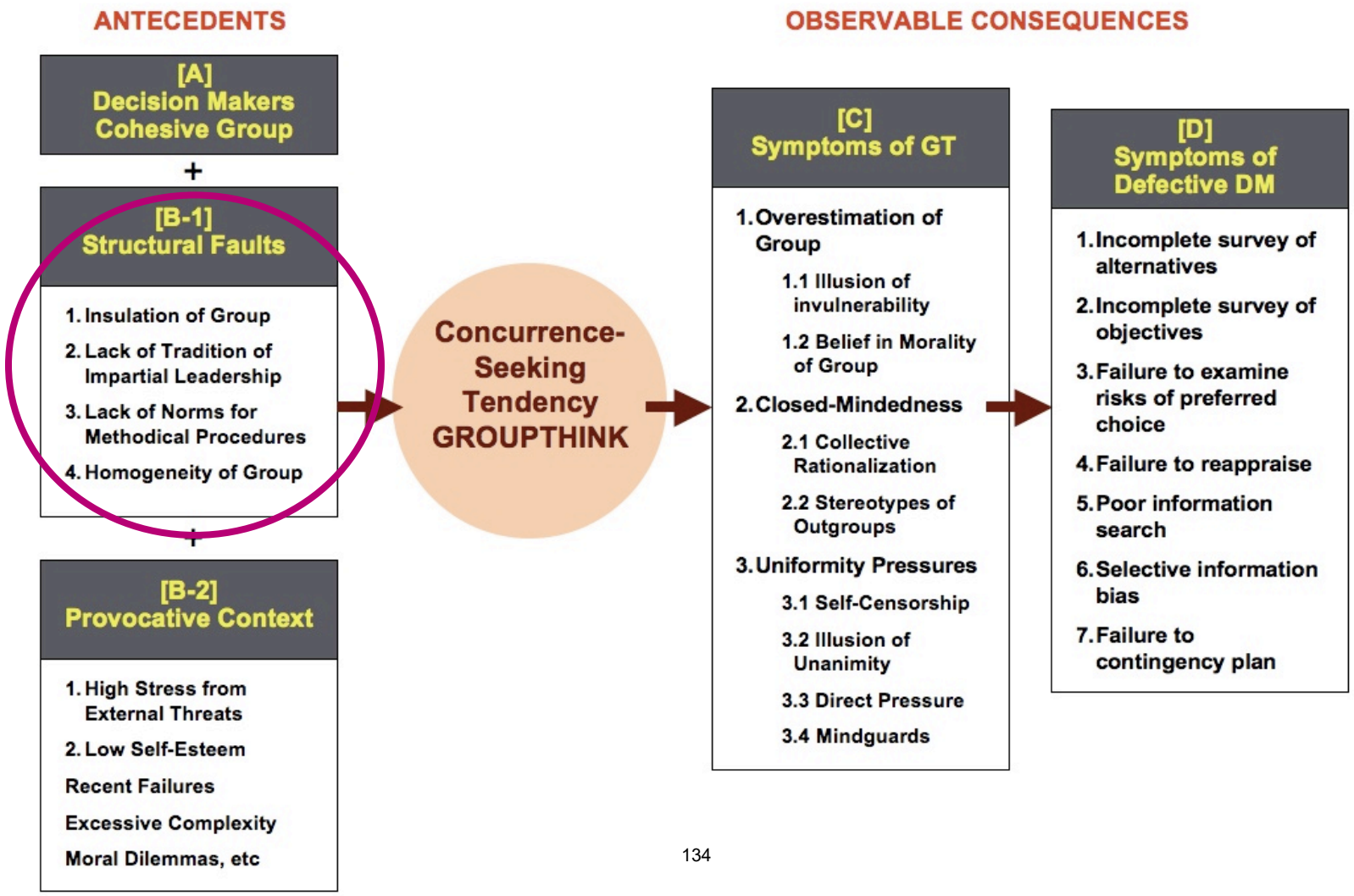
	C1	C2	C3	C4	Comprehensive evaluation value
A1	0.0323	0.0133	0.0117	0.0505	0.1078
A2	0.1253	0.0366	0.0383	0.4559	0.6561
A3	0.0139	0.1011	0.0036	0.1175	0.2361

Revised plan
(final decision)

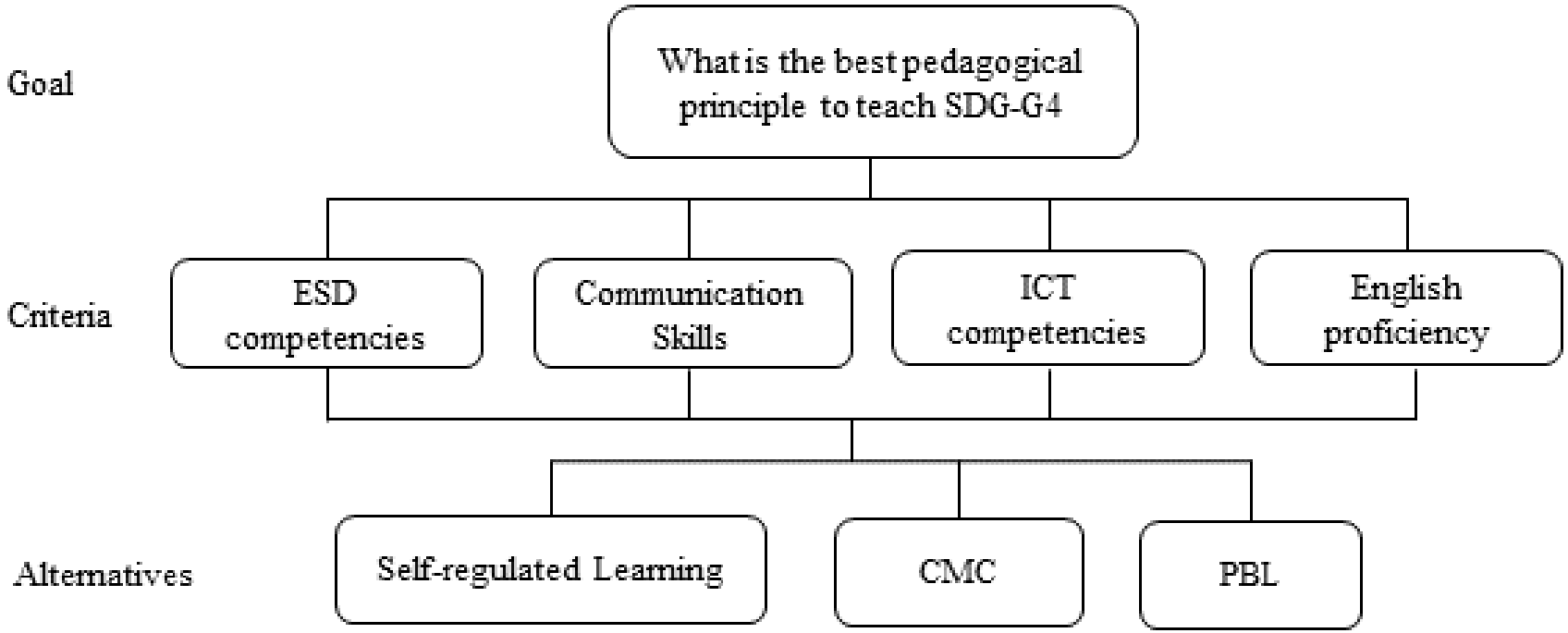


3. Simulation for difficulties of discussion in cases

3 Groupthink



Hierarchy diagram



Criteria:

C1: *Education for sustainable development (ESD) competencies*
C2: *Communication skills*
C3: *ICT competencies*
C4: *English proficiency*

Alternatives:

A1: *Self-regulated learning*
A2: *Computer-mediated communication (CMC)*
A3: *Problem-based learning (PBL)*

TABLE 8

Criteria	C1	C2	C3	C4	Geometric mean	Normalized weight
C1	1	7	1/7	3	1.3161	0.2810
C2	1/7	1	1/9	3	0.4671	0.0997
C3	7	9	1	1/3	2.1407	0.4570
C4	1/3	1/3	3	1	0.7598	0.1622
total					4.6837	1.0000
C.I.						1.1428

Pairwise comparison of alternatives

TABLE 9. C1

C1	A1	A2	A3	Geometric mean	Normalized weight
A1	1	1/3	3	1.0000	0.2583
A2	3	1	5	2.4662	0.6370
A3	1/3	1/5	1	0.4055	0.1047
total				3.8717	1.0000
C.I.					0.0193

TABLE 10. C2

C2	A1	A2	A3	Geometric mean	Normalized weight
A1	1	1/3	1/5	0.4055	0.1047
A2	3	1	1/3	1.0000	0.2583
A3	5	3	1	2.4662	0.6370
total				3.8717	1.0000
C.I.					0.0193

TABLE 11. C3

C3	A1	A2	A3	Geometric mean	Normalized weight
A1	1	5	1	1.7100	0.4353
A2	1/5	1	1/7	0.3057	0.0778
A3	1	7	1	1.9129	0.4869
total				3.9286	1.0000
C.I.					0.0063

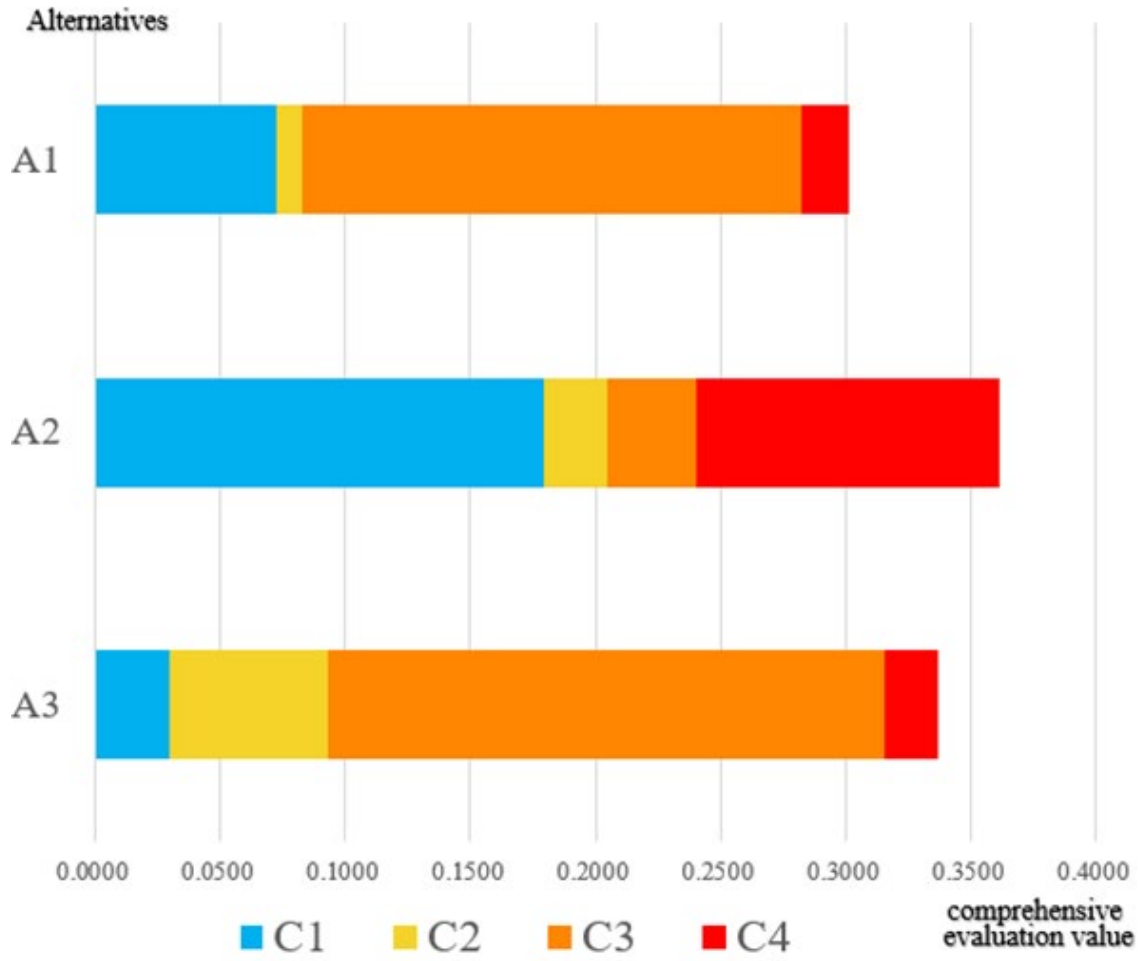
TABLE 12. C4

C4	A1	A2	A3	Geometric mean	Normalized weight
A1	1	1/7	1	0.5228	0.1194
A2	7	1	5	3.2711	0.7471
A3	1	1/5	1	0.5848	0.1336
total				4.3786	1.0000
C.I.					0.0063

Comprehensive evaluation value

TABLE 13.

	C1	C2	C3	C4	Comprehensive evaluation value
A1	0.0726	0.0104	0.1989	0.0194	0.3013
A2	0.1790	0.0258	0.0356	0.1212	0.3615
A3	0.0294	0.0635	0.2225	0.0217	0.3372



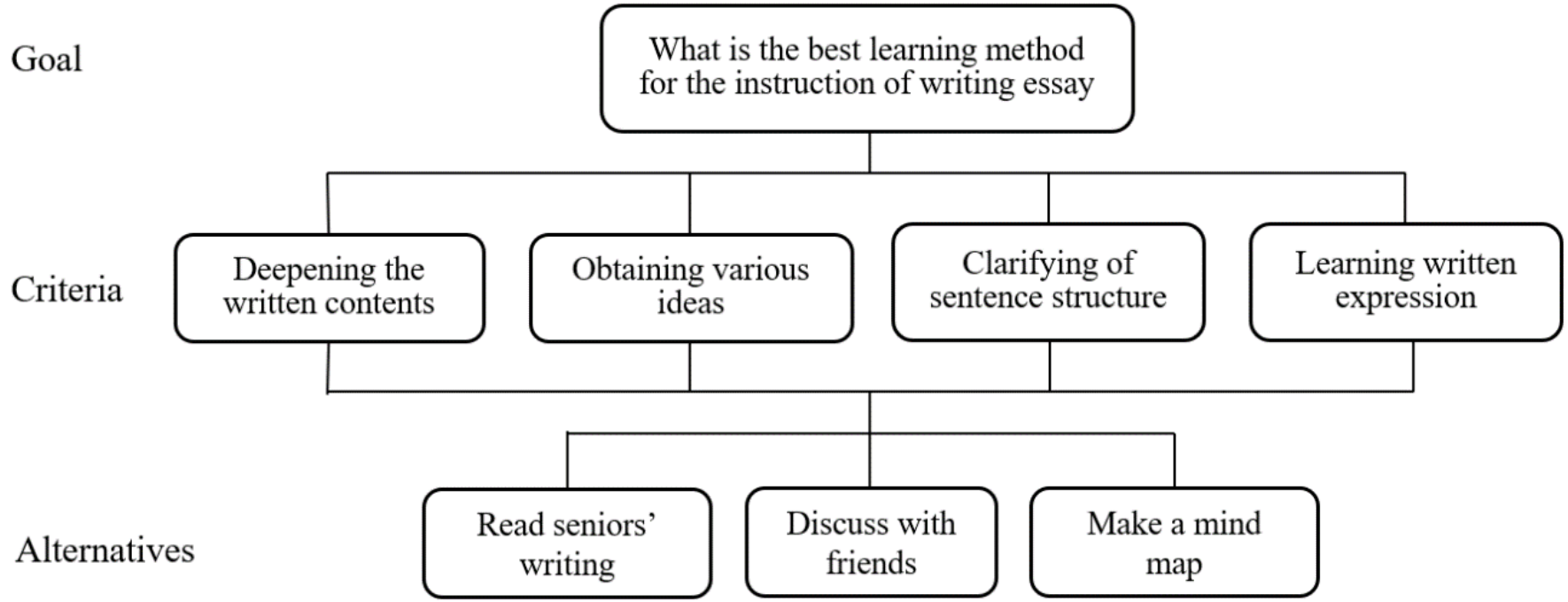
3. Lack of norms requiring methodical procedures

Members

- Teachers

the high group cohesiveness

Hierarchy diagram



Criteria:

C1: *Deepening written content*
C2: *Obtaining various ideas*
C3: *Clarifying sentence structure*
C4: *Learning written expression*

Alternatives:

A1: *Read seniors' writing*
A2: *Discuss with friends*
A3: *Make a mind map*

TABLE 14

Criteria	C1	C2	C3	C4	Geometric mean	Normalized weight
C1	1	1	2	1	1.1892	0.2818
C2	1	1	1	2	1.1892	0.2818
C3	1/2	1	1	2	1.0000	0.2370
C4	2	1/2	1/2	1	0.8409	0.1993
total					4.2193	1.0000
C.I.						0.0618

The result of the high group cohesiveness ?

Pairwise comparison of alternatives

TABLE 15. C1

C1	A1	A2	A3	Geometric mean	Normalized weight
A1	1	2	1	1.2599	0.4126
A2	1/2	1	1	0.7937	0.2599
A3	1	1	1	1.0000	0.3275
total				3.0536	1.0000
C.I.					0.0268

TABLE 16. C2

C2	A1	A2	A3	Geometric mean	Normalized weight
A1	1	2	1	1.2599	0.4000
A2	1/2	1	1/2	0.6300	0.2000
A3	1	2	1	1.2599	0.4000
total				3.1498	1.0000
C.I.					0.0000

TABLE 17. C3

C3	A1	A2	A3	Geometric mean	Normalized weight
A1	1	1/3	1	0.6934	0.2098
A2	3	1	2	1.8171	0.5499
A3	1	1/2	1	0.7937	0.2402
total				3.3042	1.0000
C.I.					0.0091

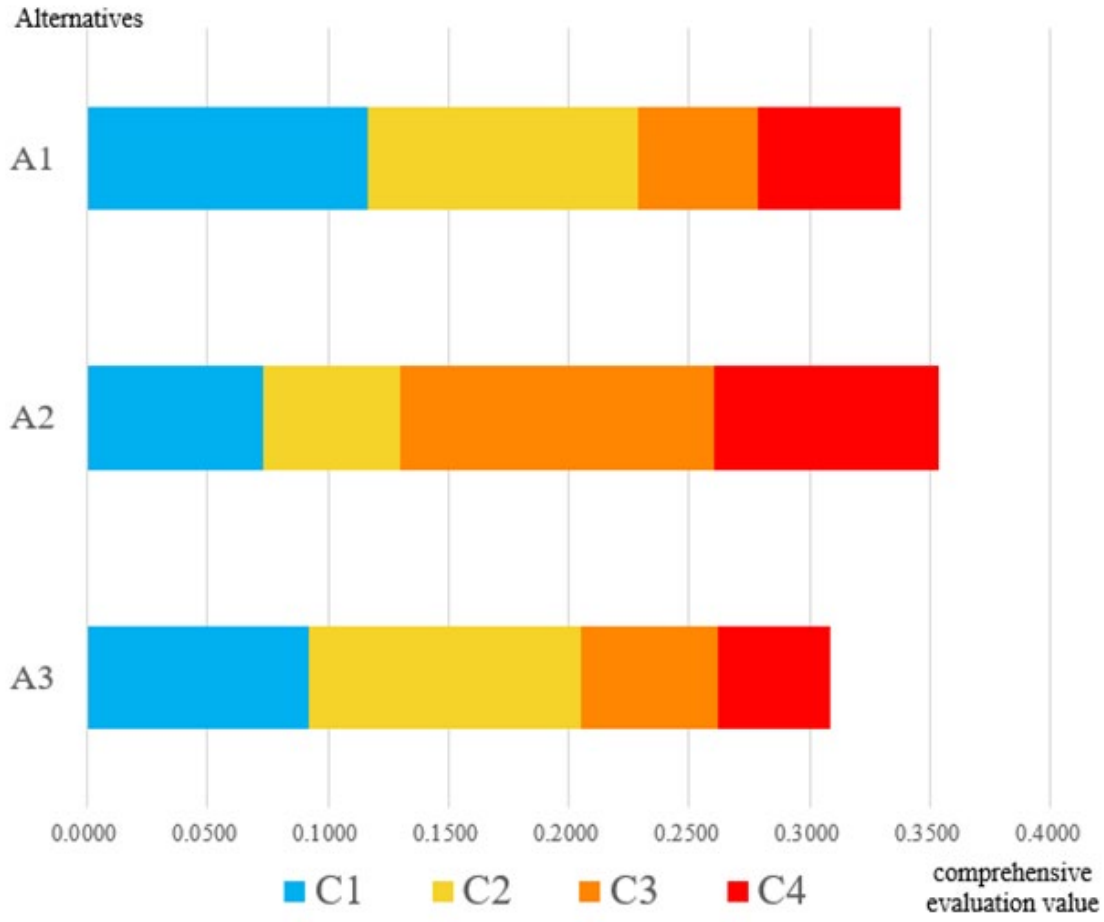
TABLE 18. C4

C4	A1	A2	A3	Geometric mean	Normalized weight
A1	1	1/2	2	1.0000	0.2958
A2	2	1	2	1.5874	0.4695
A3	1/2	1	1	0.7937	0.2347
total				3.3811	1.0000
C.I.					0.0268

Comprehensive evaluation value

TABLE 19.

	C1	C2	C3	C4	Comprehensive evaluation value
A1	0.1163	0.1127	0.0497	0.0589	0.3377
A2	0.0733	0.0564	0.1303	0.0936	0.3535
A3	0.0923	0.1127	0.0569	0.0468	0.3088

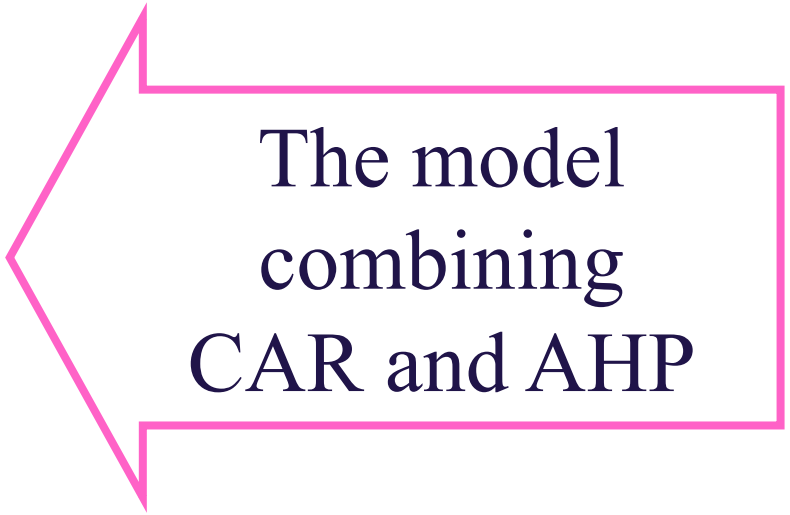


4 Conclusion

Two findings

1. The involvement of multiple and heterogeneous experts is effective in improving lessons.

2. AHP encourages more effective discussions.



Thank you for listening.

Tomomi Kubota


ONAL JOINT MEETING
N STUDENT STUDIES
Joint Online Meeting
10 February, 2022
15:00-18:30
ZOOM
Meeting ID: 812 0029 1352
Pass cord: 999

A Study on a New Dataset Shortage Problem in Medical Image Recognition

Chiba University
Yoshida Laboratory
Dai Wenxi
February 10, 2022

Background

In recent years, the development of image recognition field is changing with each passing day. With the optimization and updating of algorithm, image recognition technology is showing its talents in medical, education, agriculture and a lot of other fields.

Today, I’m going to introduce my study on new dataset shortage problem in medical image recognition. In current research, although there are insufficient samples or insufficient labeled samples, transfer learning methods, such as adversarial generation and domain adaptation, have achieved excellent results.

0 CONTENTS

1.A briefly introduction of new dataset shortage problem in medical Image recognition

2.Solution1:
If there is a small amount of pathological data in the new identification category, the transfer learning is considered as a good choice.

3.Solution2: If there is no pathological data in the new identification category, the GAN approach will be more appropriate.

4.Ask and Answers

A briefly introduction of new dataset shortage problem in medical Image recognition

1 Why am I doing this study

The first time I came into contact with image recognition technology and the detection method was when I made a sandbox game called “RESCUE POLAR BEARS” in my senior year of college.

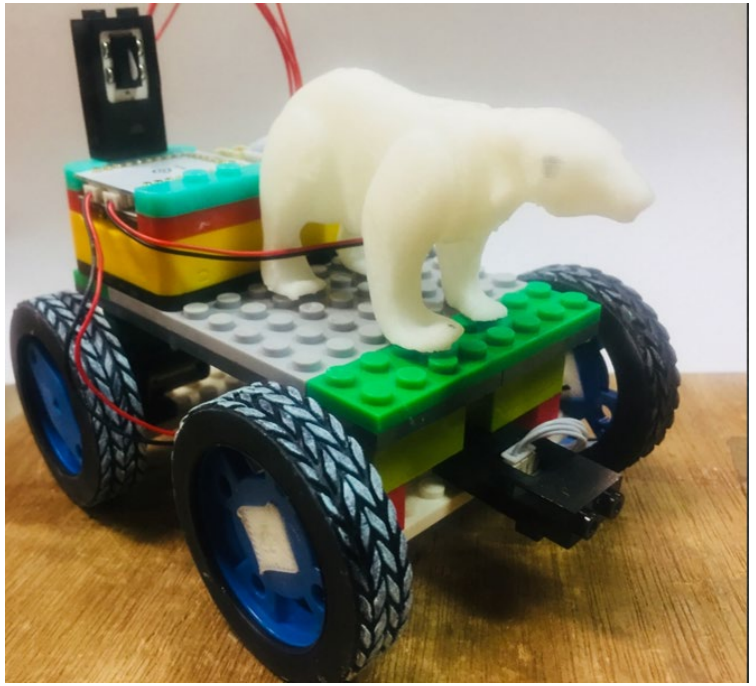


Image1-4： Pictures of sandbox game “RESCUE POLAR BEARS”

1 Why am I doing this study

There is a high possibility of insufficient data sets for sample learning by different disease categories. For example, in the medical field, although there are some viscera-related diseases that can be detected by providing sufficient samples for machine learning; still, there are few pathological samples with relatively rare data, so the model of these rare cases cannot be converged in training. In fact, although most of the available medical image databases contain image-level classification labels, the data sets with level-of-focus labels are usually less than 1000, and most of them are single types of lesions, so the trained model can only detect one lesion. Therefore, I think it is very important to address the problem of inadequate data sets for newly identified categories.

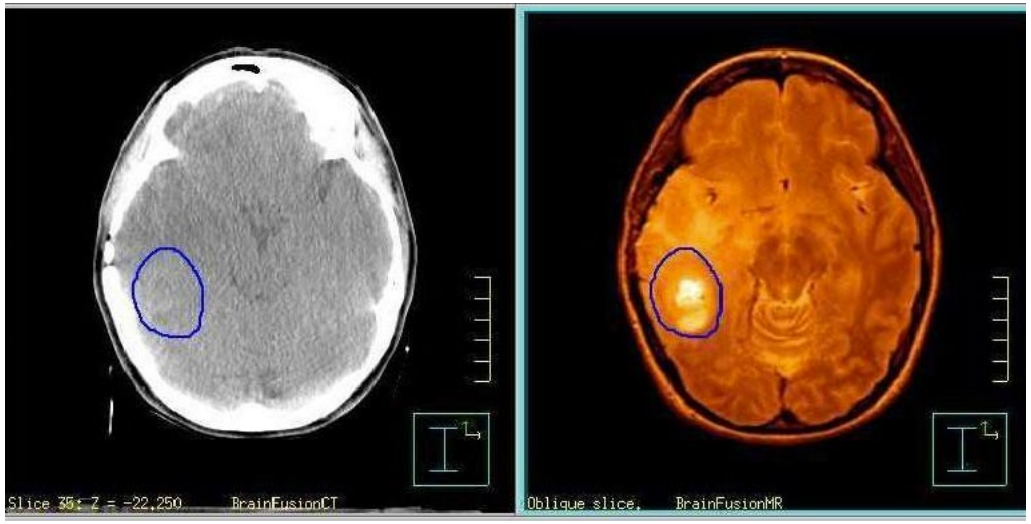


Image right. CT, MRI image fusion[1]

1 Why am I doing this study

In image processing, it is often possible to label manually, but it is difficult to write a complete rule to realize automatic processing. Sometimes there are a whole set of algorithms, but there are too many parameters, and it is too tedious to manually adjust and find the right parameters. So you can use the method of machine learning, extract a certain number of features, manually mark a batch of results, and then use the method of machine learning to calculate a set of automatic judgment criteria. Machine learning approaches are more effective in developing such software[2].

Image1 Image recognition

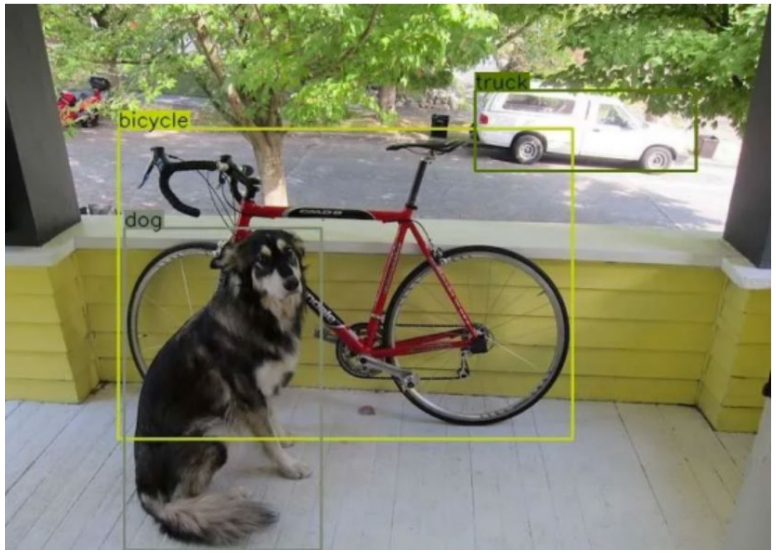
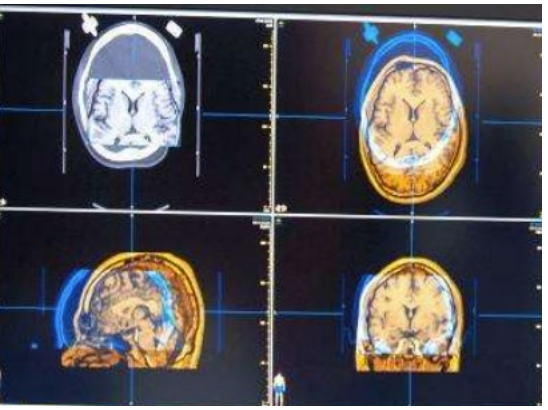


Image2 Image detection

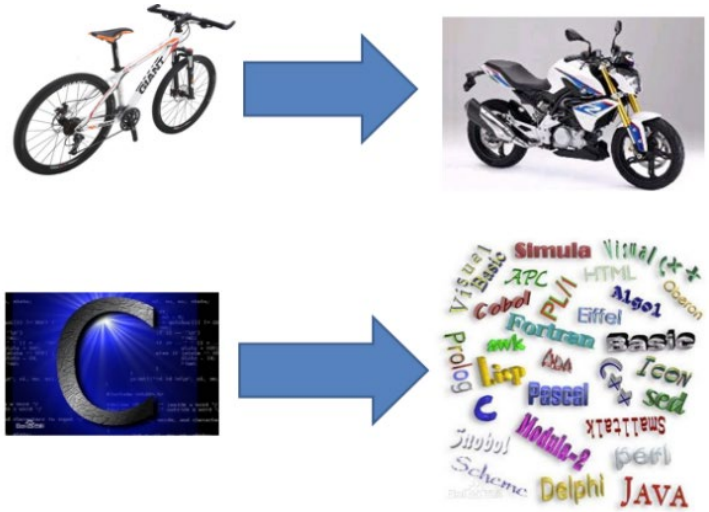
1 Some related technologies

Image fusion



Transfer learning

GAN



There are still more technologies and ways to solve problems…

Solution 1

2 What is transfer learning

Transfer learning is a machine learning method in which a pre-trained model is reused for another task. As the name implies, the parameters of the trained model (pre-training model) are transferred to the new model to help the new model training. Considering that most of the data or tasks are related, we can share the model parameters learned (also known as knowledge learned by the model) to the new model in some way through transfer learning so as to speed up and optimize the learning efficiency of the model without learning from zero like most networks[3].

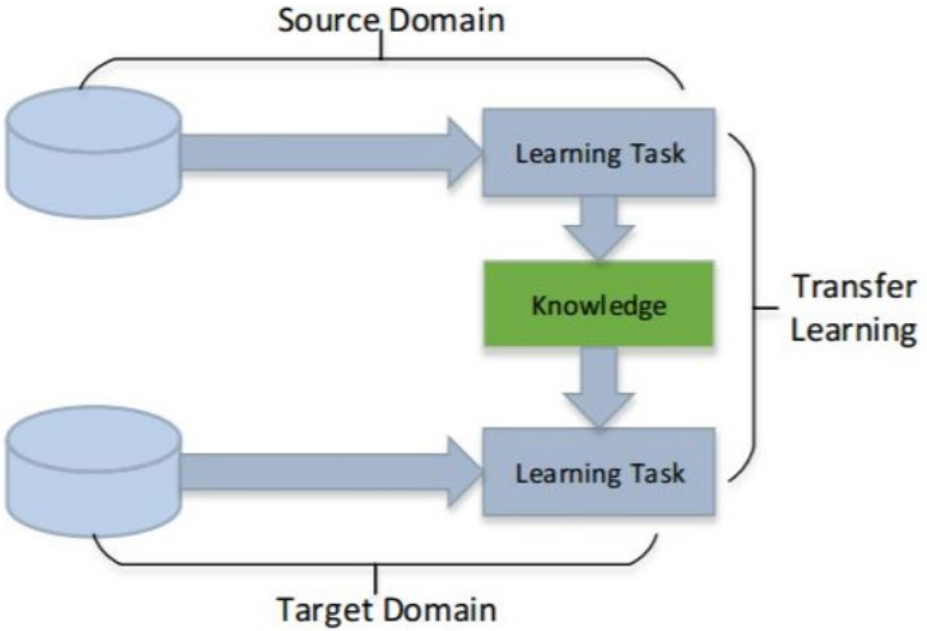


Image1. Schematic diagram of transfer learning working principle process

2 How could I use transfer learning

If only a small amount of pathological data exists in the new recognition category, transfer learning is considered as a good choice. Transfer learning can be realized by "feature transfer" and "model transfer" based on the characteristics of samples. According to the previous model, if the features of source domain and target domain are obtained from the same modal image (MRI, CT, etc.), their general features will also be close to each other. On this basis, the target model will be obtained by using the target data set and re-learning through Optuna.

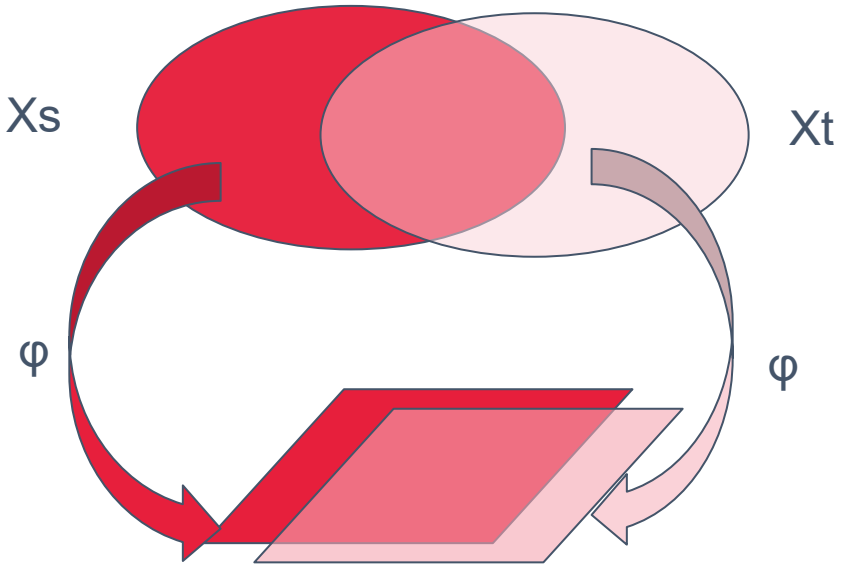


Image1. Feature based transfer learning[4]

Solution 2

3 What is GAN

GAN(Generative Adversarial Networks) is a generative adversarial network. More specifically, GAN can learn the generative model of data distribution by the way of confrontation. The so-called confrontation refers to the confrontation between generative network and discriminant network. The generative network tries to generate realistic samples, and the discriminant network tries to distinguish whether the samples are real samples or generated false samples. Here is a simple illustration of how this works:

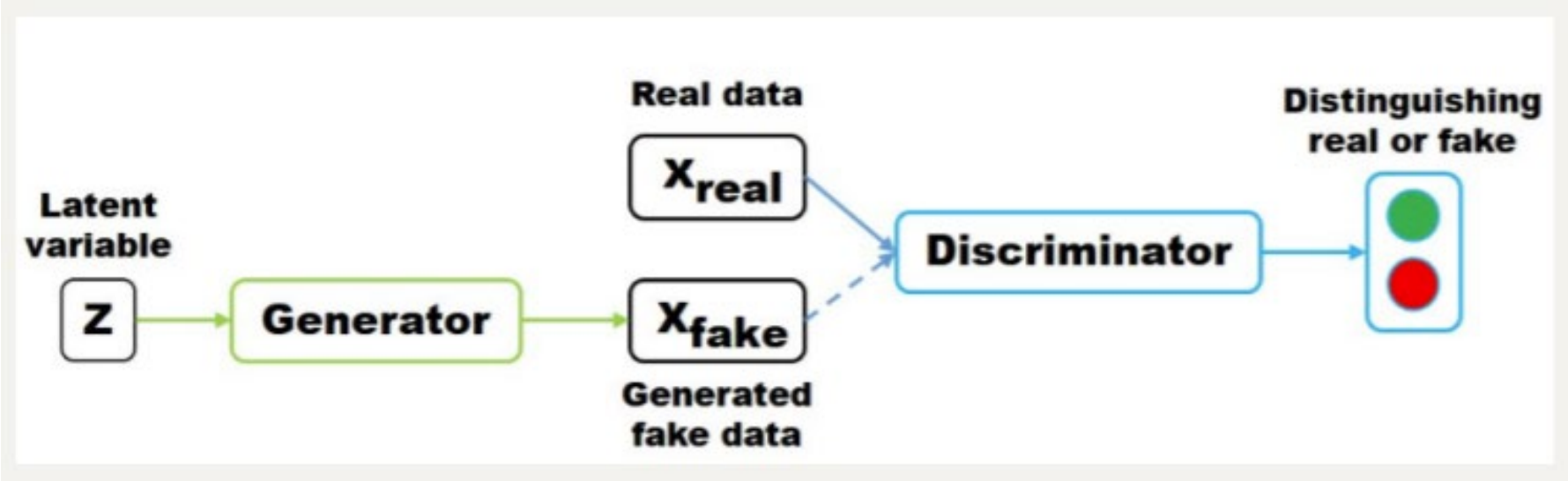


Image1. Schematic diagram of GAN working principle process

3 How could I use GAN

Think about an approach that combines adversarial training with self-supervised learning. In this setting, the quality of discriminator representation is greatly improved, which may have potential application value in transfer learning. The core of self-supervised learning is how to automatically generate labels for data. For example, input a picture, rotate the picture by a random Angle, then use the rotated picture as input, and the random rotation Angle as the label[5].

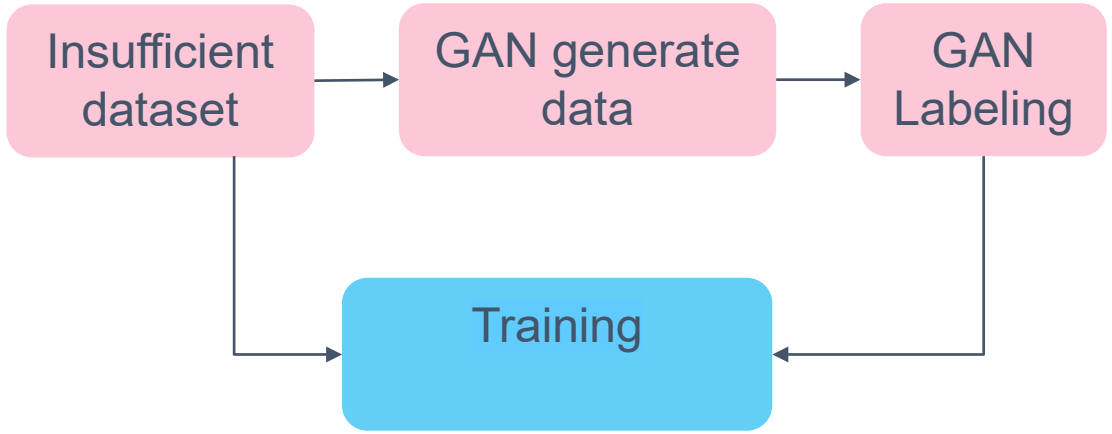


Image1. The process of obtaining data samples by using GAN

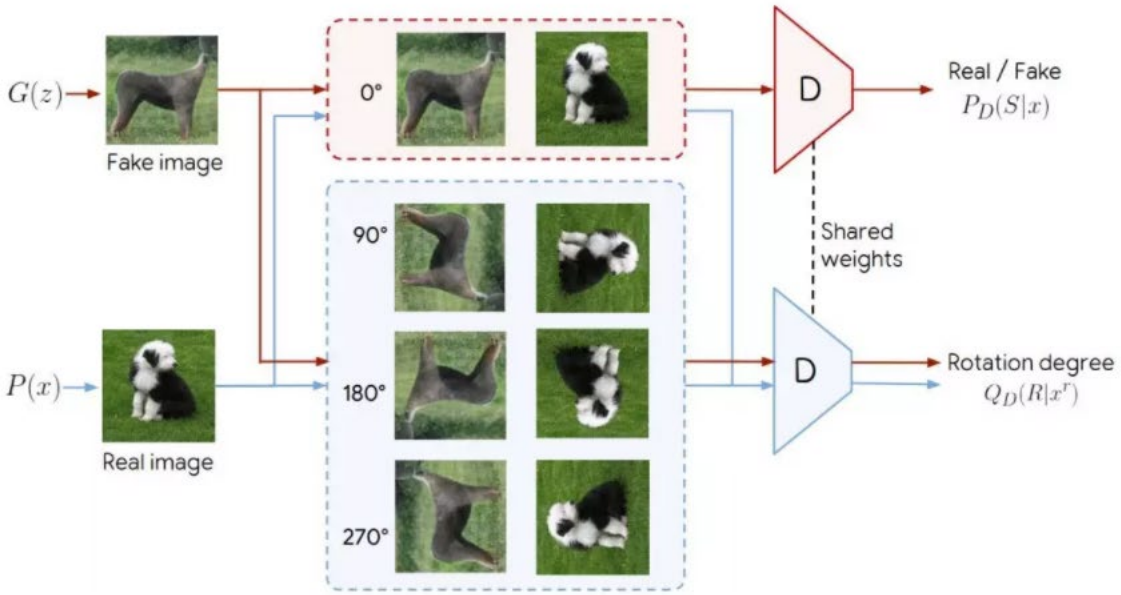


Image2. Discriminator with self - monitoring based on rotation

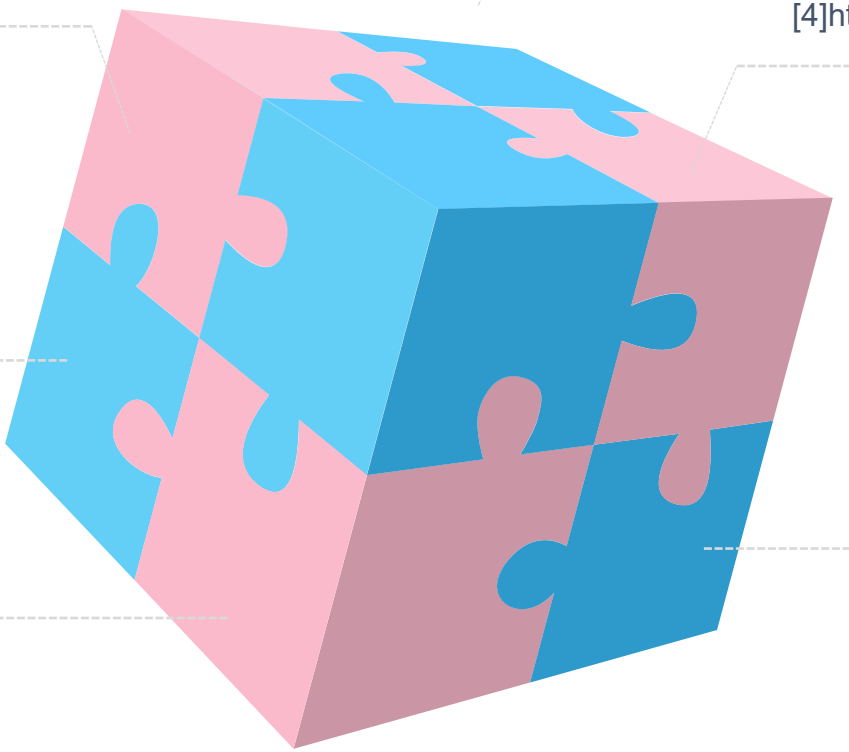
THANKS

4 Ask and Answers

[2]:
https://www.zhihu.com/question/21665775/answer/18927203

[1] https://www.wendangwang.com/doc/94024492947793ee33d73b79/8

[4]https://www.docin.com/p-1629864109.html



[3]
https://www.zhihu.com/question/345745588/answer/826649936

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[5] https://www.jiqizhixin.com/articles/2019-01-02-13


DNAL JOINT MEETING
N STUDENT STUDIES
Joint Online Meeting
10 February, 2022
15:00-18:30
ZOOM
Meeting ID: 812 0029 1352
Pass cord: 999

Exploring **THE IMPLEMENTATION OF NATIONAL STRATEGIC PLAN ON ANTIMICROBIAL RESISTANCE (AMR)** in The Appropriate Use of Antimicrobials

Mr. SHINNAWAT SAENGUNGSUMALEE

Social and Administrative Pharmacy Department

Faculty of Pharmaceutical Sciences, Chulalongkorn University

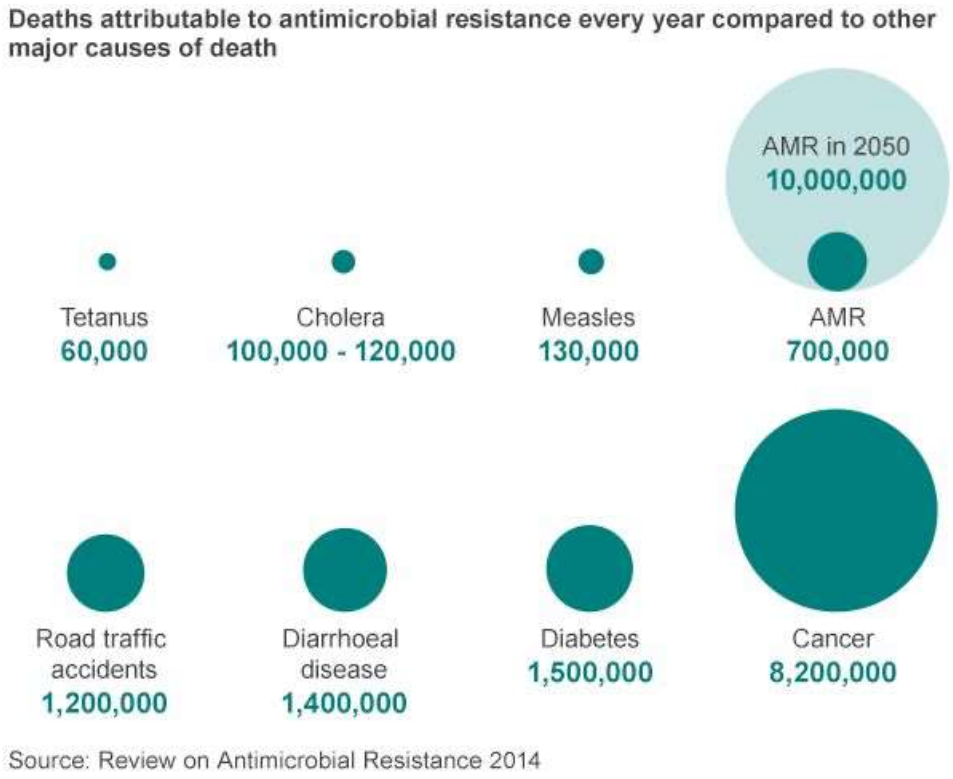
Ref: https://www.pewtrusts.org/en/research-and-analysis/articles/2017/10/10/superbugs-dont-respect-borders

The rapid spread of antimicrobial-resistant bacteria, also known as Superbugs, leads to a significant increase of infectious diseases that cannot be cured.

In addition, the situation of antimicrobial drug research and development has become worse.

In 2019, The World Health Organization stated that only 32 are clinically developed, and only six are classified as innovations.

A lack of access to quality antimicrobial medicines remains a significant concern and affects the healthcare system in all countries.



O'Neill has estimated that antimicrobial resistance infections will cause at least 70,0000 people to die each year and climb to 10 million deaths by 2050 if people do not change their antibiotics.

In Thailand, a study showed that AMR caused 38,481 deaths in hospitals in 2010, and 19,000 extra deaths are attributable to Multidrug-resistant bacterial infections increasing each year

On August 17, 2016, Thailand's National Strategic Plan on Antimicrobial Resistance 2017-2021 was approved by the Council of Ministers.

Six Strategies are used

1) Surveillance of antimicrobial resistance under 'One-Health' approach'.

2) Overall national antimicrobial drugs distribution control.

3) Control and prevention of infection in healthcare settings and supervise the irrational use of antimicrobial drugs.

4) Control and prevention an antimicrobial drug use in agriculture and animal sectors.

5) Strengthen antimicrobial resistance knowledge and awareness on rational use of antimicrobial drugs to the people.

6) Managing and developing policy-level mechanisms to drive sustainable antimicrobial resistance work.

Half Plan Evaluation (2021)

Strategic 5 did not achieve the half plan target. Thai people still did not aware or did not have an essential knowledge of AMR

Problems in implementing strategy 5 were

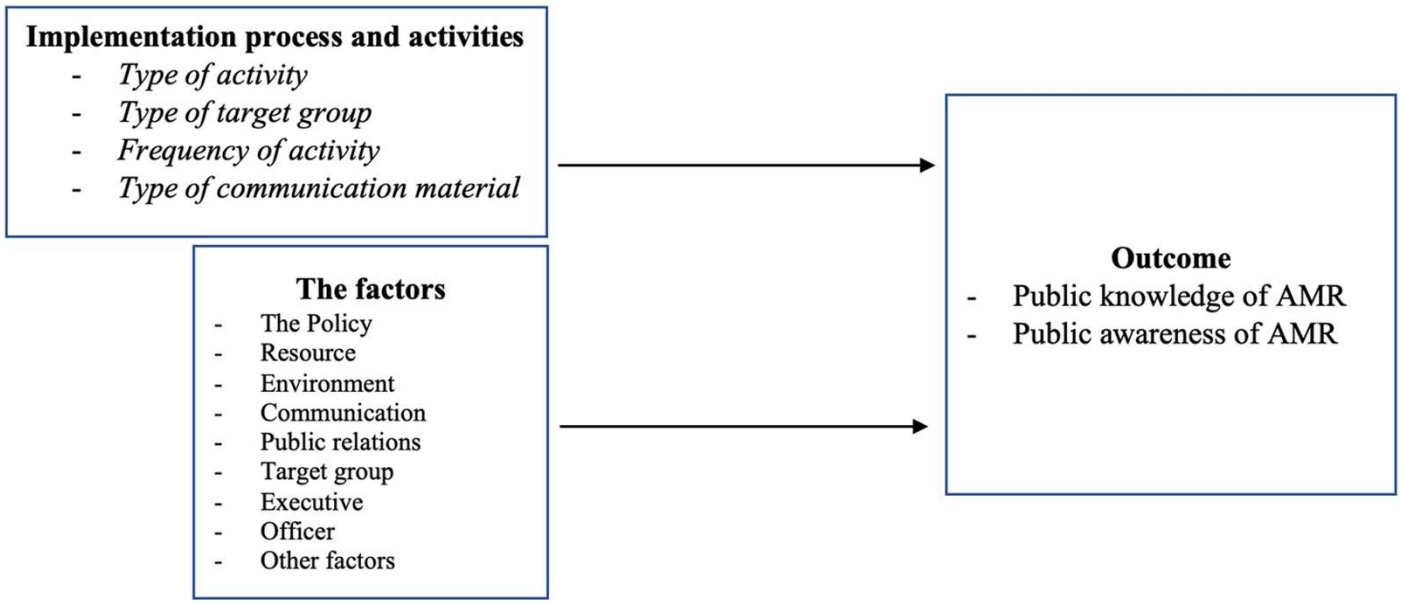
- the lack of a cooperation body among functional organizations (Health organizations, Mass communication organizations)
- The process and activities for raising the awareness of people as well as education the people were not effectives

My research is aimed to:

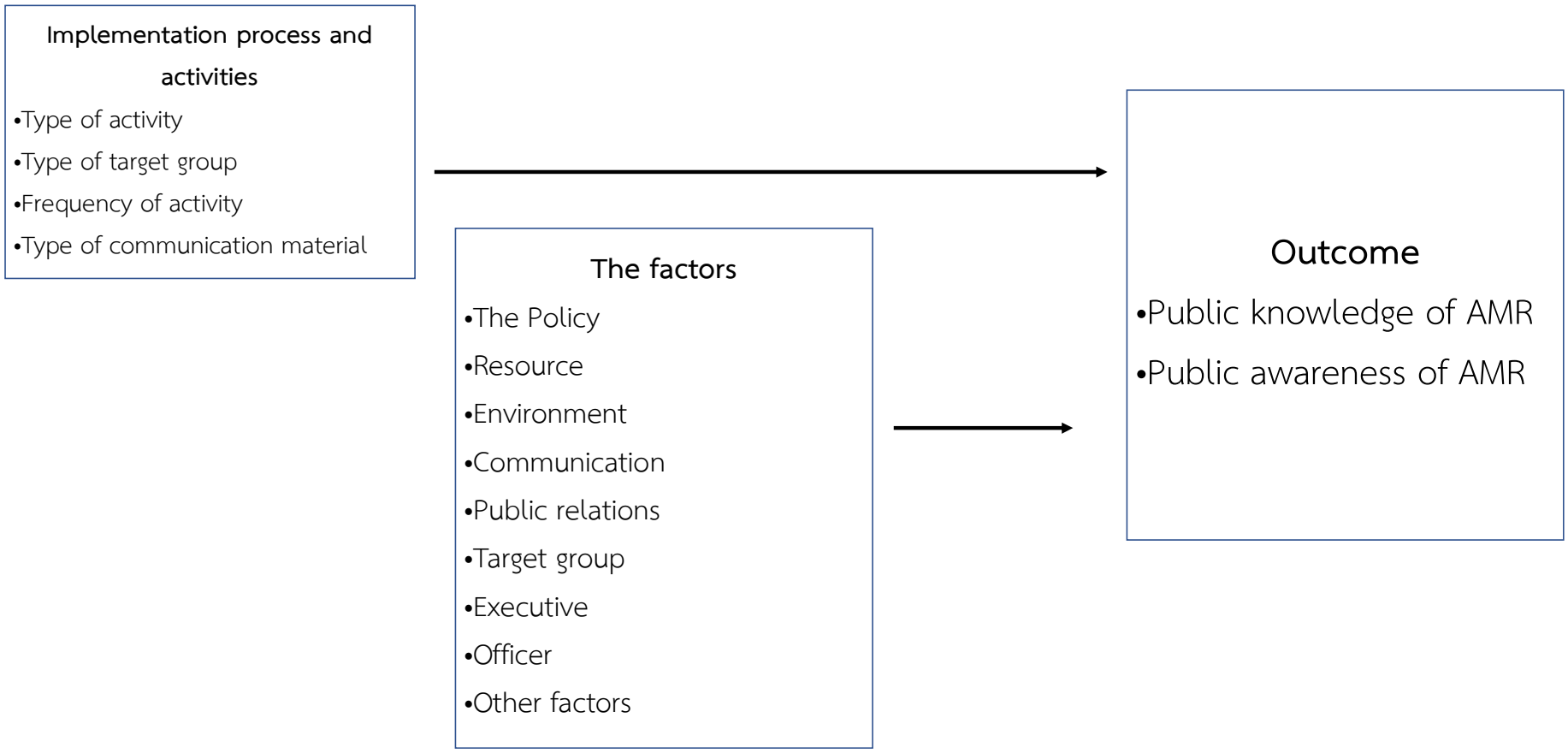
1) To investigate the implementation process and activities of the National Strategic Plan on AMR strategy 5 on public knowledge and public awareness on AMR, and appropriate use of antimicrobials.
2) To investigate the factors contributing to the outcomes of the National Strategic Plan on AMR strategy 5 on public knowledge and public awareness on AMR, and appropriate use of antimicrobials.

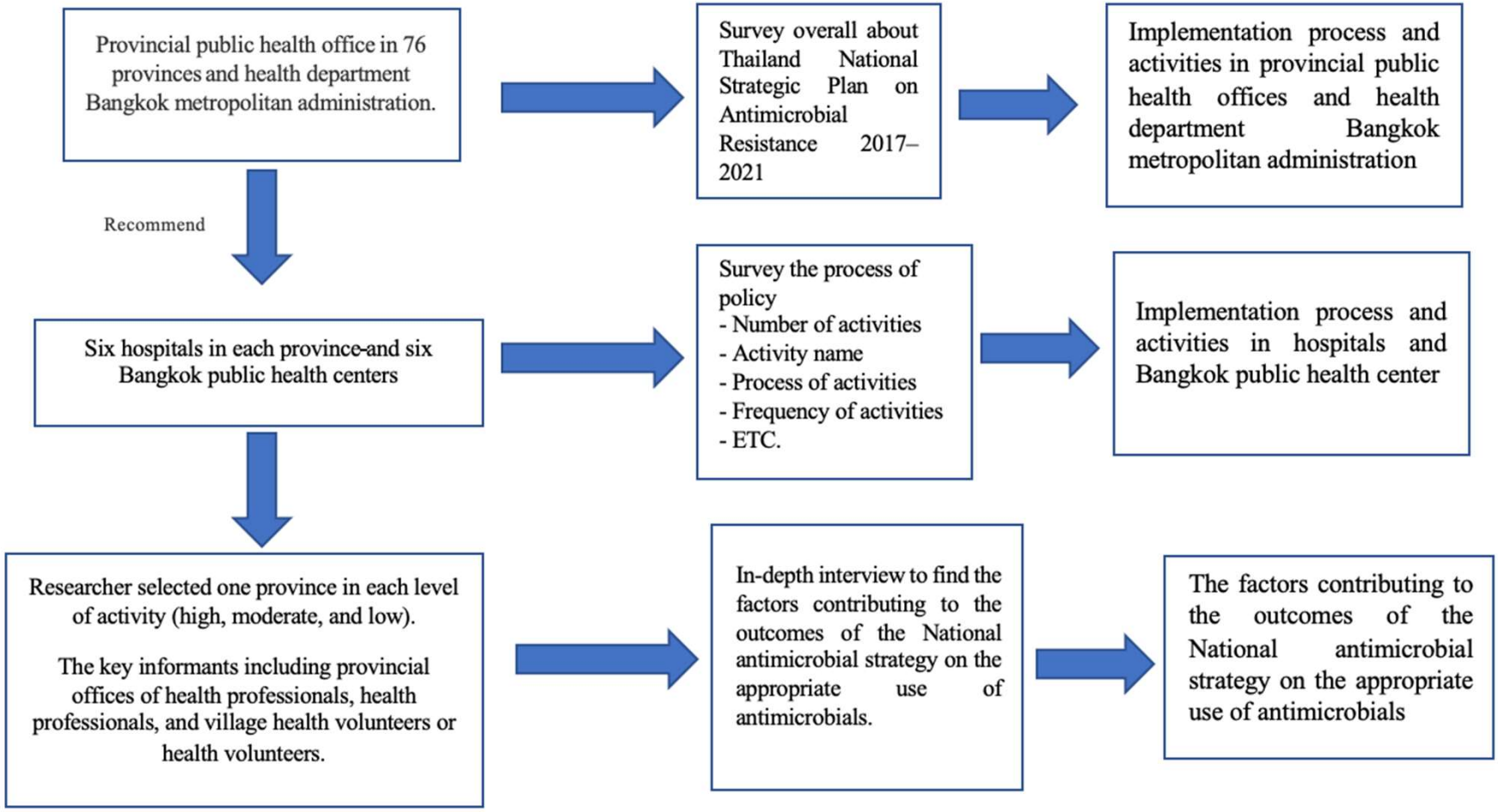
ทำให้ตัวใหญ่ สวยงามหน่อย

The National Antimicrobial Strategy



The National Antimicrobial Strategy




Provincial public health office in 76 provinces and health department Bangkok metropolitan administration.
Survey overall about Thailand National Strategic Plan on Antimicrobial Resistance 2017–2021
Implementation process and activities in provincial public health offices and health department Bangkok metropolitan administration
Recommend
Six hospitals in each province-and six Bangkok public health centers
Survey the process of policy
- Number of activities
- Activity name
- Process of activities
- Frequency of activities
- ETC.
Implementation process and activities in hospitals and Bangkok public health center
Researcher selected one province in each level of activity (high, moderate, and low).
The key informants including provincial offices of health professionals, health professionals, and village health volunteers or health volunteers.
In-depth interview to find the factors contributing to the outcomes of the National antimicrobial strategy on the appropriate use of antimicrobials.
The factors contributing to the outcomes of the National antimicrobial strategy on the appropriate use of antimicrobials

Phase I

Study design

- This phase will use a survey study to investigate the implementation process and activities of the National antimicrobial strategy.

Population and Sample

The population is 77 provinces.

The purposive sampling method.

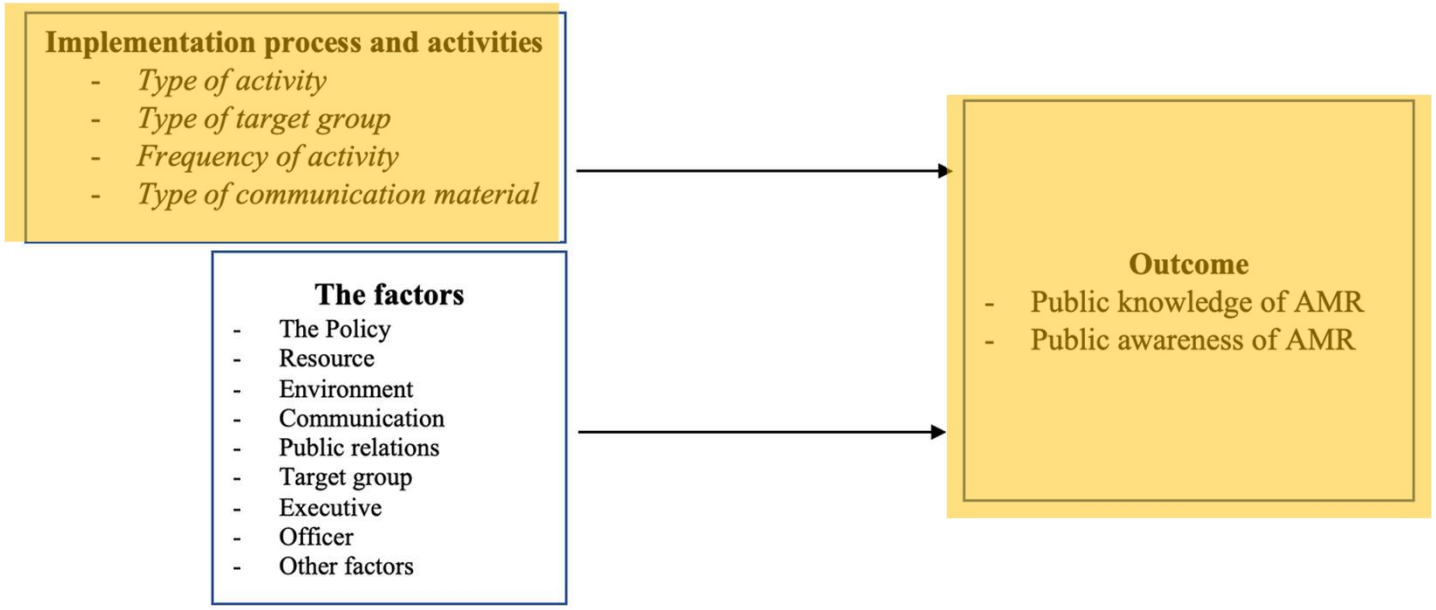
The inclusion criteria are health professionals responsible for strategy 5 more than three years.

The exclusion criteria are those who are not willing to answer surveys.

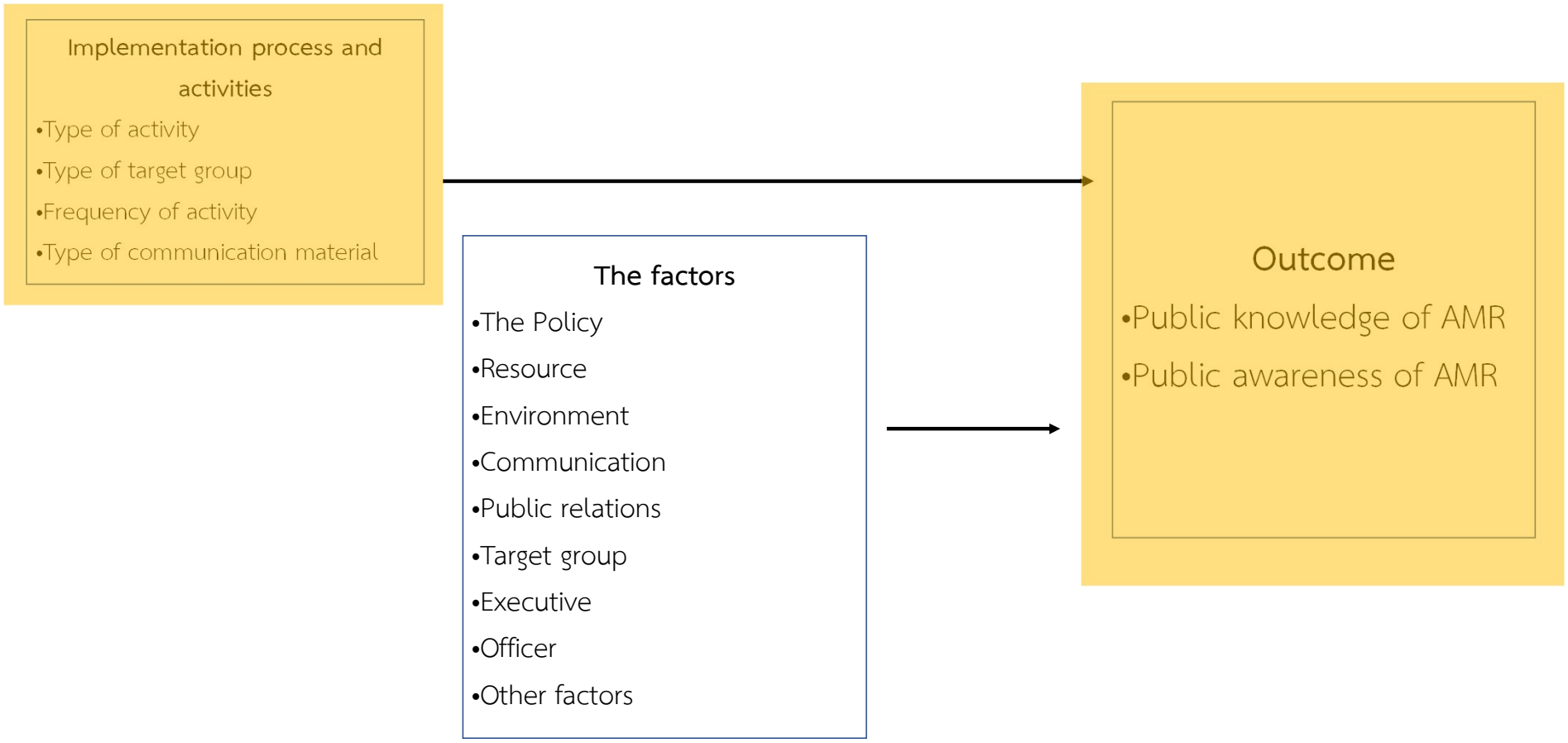
Then calculate the sample by using the formula for calculating the sample of Taro Yamane.

ทำให้ตัวใหญ่ สวยงามหน่อย

The National Antimicrobial Strategy

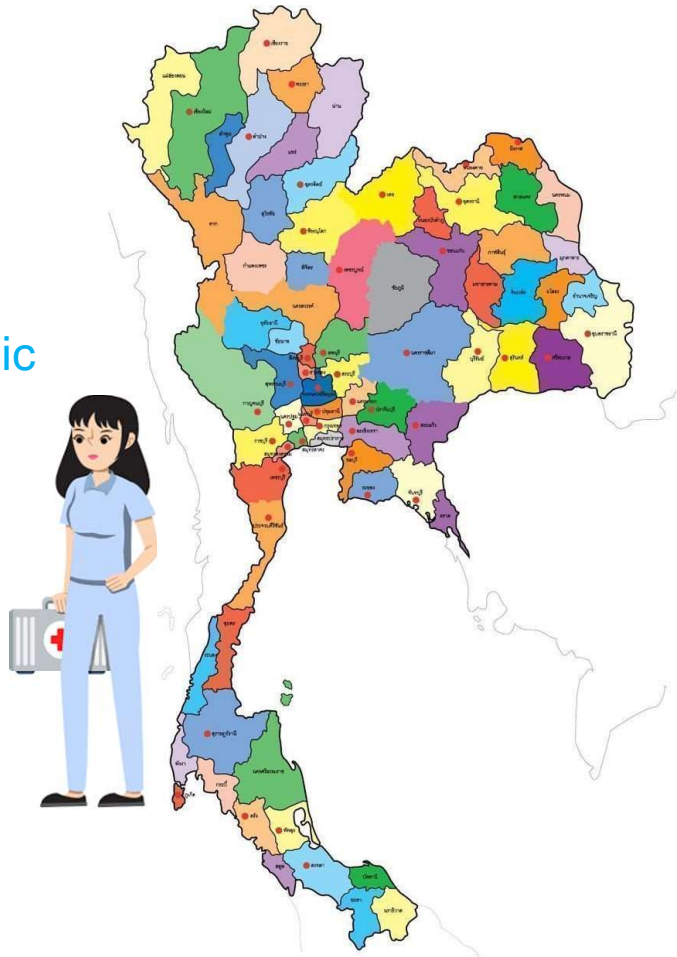


The National Antimicrobial Strategy



Phase I

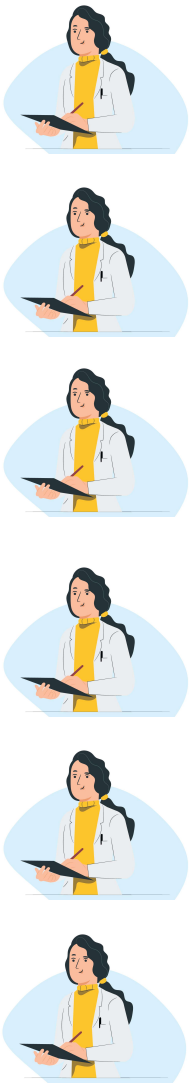
Send survey form to 76 Heath provincial officers and 1 Bangkok public health center officers



To investigate the implementation process and activities of the National antimicrobial strategy in every province.

Phase I

Recommend 6 health professional in each province



The provincial public health officers in 77 provinces recommended 6 hospitals.

Sample size

Population are hospitals under the Ministry of Public Health (including hospital center, general hospital, community hospital, and subdistrict health promotion hospital) and Bangkok public health center, totaling 10,740 hospitals.

The total sample sizes are 462 hospitals.

Study instrument

น่าจะเป็นข้อคำถามที่สำคัญ

The survey instruments are open-end questions.

The survey form 1 for health provincial office in 76 provinces and the health department Bangkok metropolitan administration.

The survey form 2 for 462 hospitals or Bangkok public health centers recommended by the provincial public health office in 76 provinces and the health department Bangkok metropolitan administration.

Study instrument

The survey instruments are open-end questions.

For example:

- During 2017-2021, are there any activities to educate people about AMR or AMU in your hospital? (For example, training, campaign, distributing knowledge materials, etc.)."
- What activities have you organized on raising knowledge and awareness of AMR and AMU? Please specify?
- What percentage of the area did you organize activities related to Strategy 5 in your province?
- How much focus did your activities focus on these issues?
  - The unnecessary use of antibiotics makes them ineffective.
  - Stop taking antibiotics when completing the full course of antibiotics.
  - Antibiotics are not equal to anti-inflammatory drugs.
  - Antibiotics are ineffective against colds and flu.
  - Antibiotics cannot kill viruses.
- Who is the target group in each activity?
- What is the frequency of activities each year?
- What are the media and campaign materials?

Data Analysis

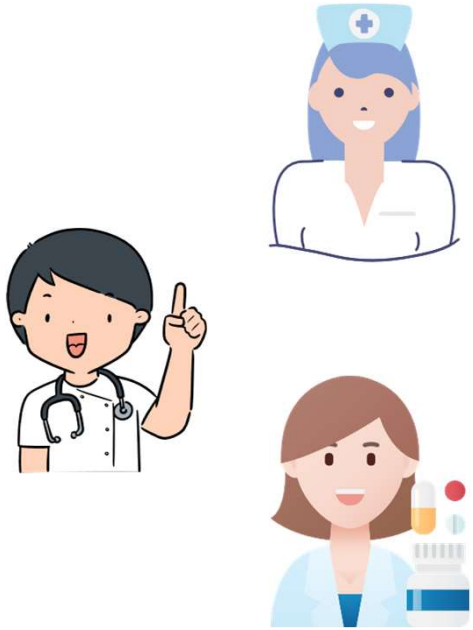
The descriptive analysis will be used in phase I.

The data about the percentage of the area that implemented strategy 5 in their province obtained from the analysis will be categorized into three groups for use in phase II: provinces with high, moderate, and low activities based on the survey data.

- The high level is the provinces with more than 80 % of the areas' activities.
- The moderate level is the provinces with activities covering the areas between 50-80 %.
- The low level is the provinces with lower than 50 % of the activities cover the areas or do not know.

Phase II

This phase of qualitative research used in-depth interviews to find the factors contributing to the outcomes of the National antimicrobial strategy in key informants.



The National Antimicrobial Strategy

Implementation process and activities
- *Type of activity*
- *Type of target group*
- *Frequency of activity*
- *Type of communication material*

The factors
- The Policy
- Resource
- Environment
- Communication
- Public relations
- Target group
- Executive
- Officer
- Other factors

Outcome
- Public knowledge of AMR
- Public awareness of AMR

Phase II

Study design

This phase of qualitative research used in-depth interviews to find the factors contributing to the outcomes of the National antimicrobial strategy in key informants.

The key informants will include provincial offices of public health officers, health professionals, and village health volunteers or health volunteers. The interview will be conducted until data is saturated and no new information is added.

Study Instrument

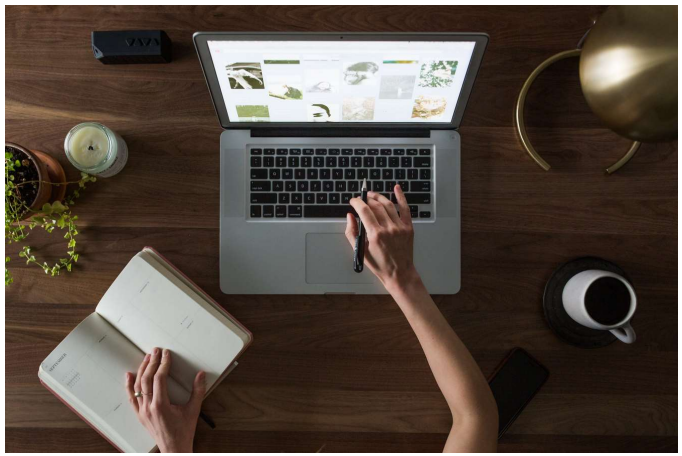
The tools used to collect data are a semi-structured interview guide, an online interview with key informants.

The semi-structured interview consists of 3 parts.

1. Personal key informant information.
2. The implementation process and activities of the National antimicrobial strategy.
3. Factors contributing to the outcomes of the National antimicrobial strategy on the appropriate use of antimicrobials.

Data Analysis

1) The researcher transcripts from interviews.
2) The researcher takes the information that has been compiled according to the thematic approach, which Braun and Clarke outlines six steps to perform the analysis.
3) The researcher uses the results of an in-depth interview from a group of key informants to describe the content to find a suitable approach.



Expected Results from the study

- An inventory of processes and activities that were used for advocate the knowledge and awareness of AMR throughout Thailand
- The factors the contributing to the success implementation of the National antimicrobial strategy on the appropriate use of antimicrobials.

Thank you


DNAL JOINT MEETING
N STUDENT STUDIES
Joint Online Meeting
10 February, 2022
15:00-18:30
ZOOM
Meeting ID: 812 0029 1352
Pass cord: 999

Closing remarks

It's my pleasure and honour to be a closing remarks person. Thank you to Prof. Masami Yoshida for the initiative and invite students from Chulalongkorn University and me to join this extraordinary international joint meeting on student studies organized by the Faculty of Education, Chiba University, and co-organized by the Faculty of Pharmaceutical Sciences, Chulalongkorn University.

I want to express my appreciation to all presenters for their valuable contribution to our joint meeting. Even though we are from different fields, Education and Pharmaceutical Sciences, we learned from the presentation topics that both disciplines could be integrated and applied in some particular context. The new world needs inter-disciplinary expertise to conduct our professional practice in society. This joint international meeting is not only the opportunity for students to share their knowledge in academic discussion and also the chance to connect and network among students in both universities. I hope that the joint international meeting will continue and provide space for sharing and create fruit of thought for all presenters and participants.

Last but not least, I would like to thank you for the participants. Without your input, ideas, and discussion, this joint international meeting on student studies would not have been as successful as possible. It's been a pleasure being with all of you today. Thank you. I at this moment declare the closing of this joint international meeting on student studied. Thank you very much.

10th February 2022
Assoc. Prof. Anuchai Theeraroungchaisri
The Faculty of Pharmaceutical Sciences,
Chulalongkorn University.