

DIGITAL TRANSFORMATION FOR PROSPECTIVE TEACHERS

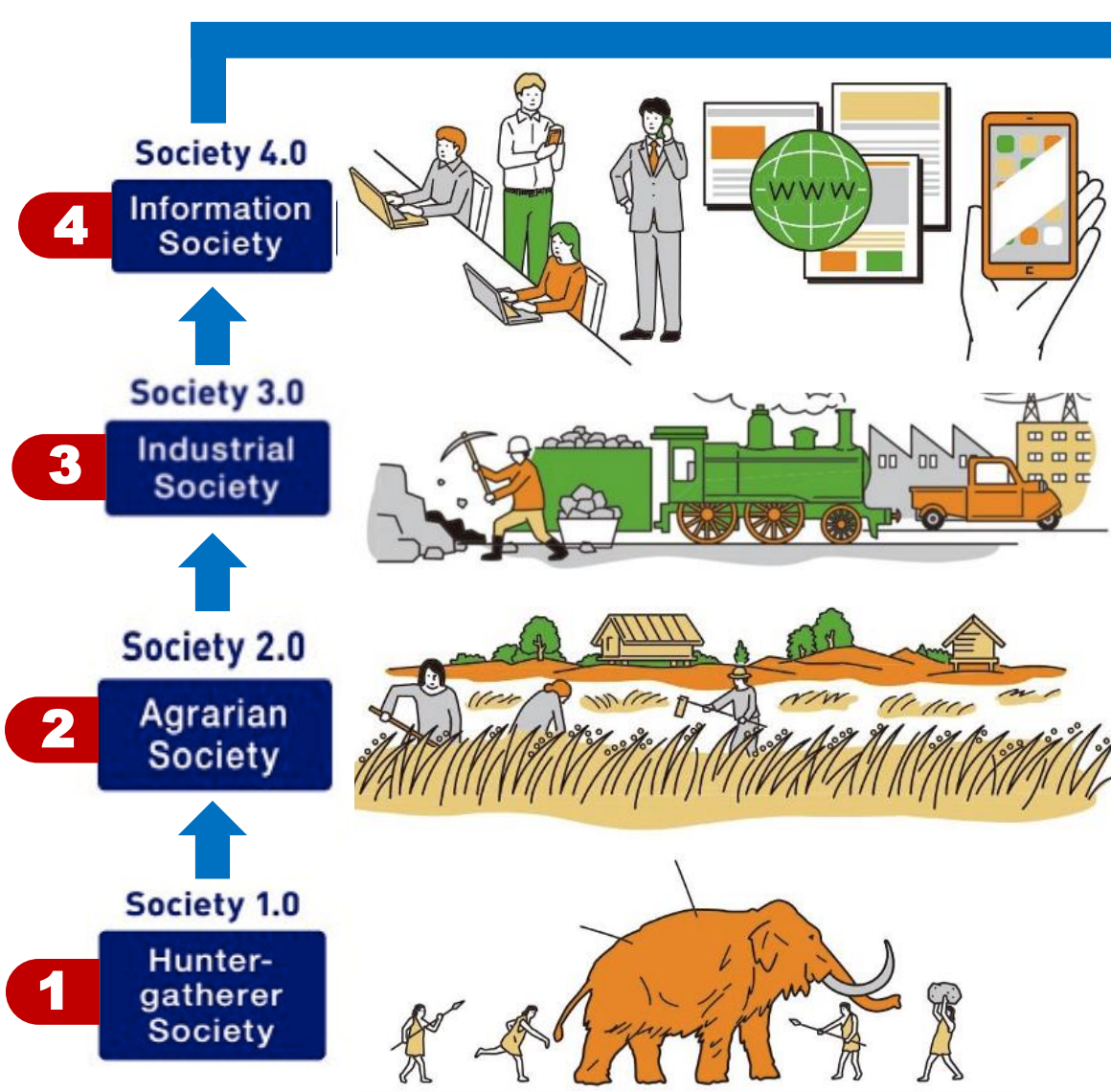
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SOCIETY 5.0



Essence of Era 5.0

IT should be a solution for education development to achieve national education goals

5

Entering Society 5.0





Fact finding in Digital Era

- New Demands of a Knowledge-Based Society
- New Student Expectations
- New Technologies
- Fast Changing World of Work



SEVEN KEY DEVELOPMENTS TRIGGERING FOR EDUCATIONAL COMMUNICATION

NEW PEDAGOGY

1. Blended Learning

2. Collaborative Approaches To The Construction Of Knowledge/Building Communities Of Inquiry And Practice

3. Use of Multimedia and Open Educational Resources (UMOER)

4. Increased Student Control, Choice, And Independence

5. Anywhere, Anytime, Any Size Learning

6. New Forms Of Assessment

7. Self-Directed And Non-Formal Online Learning
(Source: Darmawan, 2022)

Teacher Education Should be to create the AI Curriculum Development

- Provides global and regional leadership in education, strengthens national education systems and responds to contemporary global challenges

RETHINKING ONLINE PEDAGOGICAL CULTURE

An effective online pedagogy is one that emphasizes student-centered learning and employs active learning activities. “Interactivity, faculty, and student presence are essential in an effective online learning environment” (O’Neil et al., p. 21).



**Principles of effective
online pedagogy:**



- 1. Students do (most of) the work. The more time students spend engaged with the content, the more they will learn.**
- 2. Interactivity is the heart and soul of effective asynchronous learning.**
- 3. Strive for presence: social, cognitive, and teaching presence.**

QUALITY

Learning Outcomes

Quality

TL Process Quality

Teachers Quality

Quality of Curriculum

Quality of Facilities, etc



1

EQUITY

Equity of Quality

Equity of Teacher

Distribution

Equity of Access

Equity of Facilities, etc



2

CHALLENGES EDUCATION 5.0

TECHNOLOGY

Internet of Things

Cloud Computing

Big Data

Artificial Intelligent

Digital, etc.



3

GLOBAL LITERACY

Data Literacy

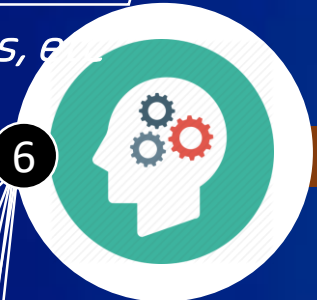
Information Literacy

Media Literacy

Human Literacy

Financial Literacy

Digital Literacy, etc



6

CHARACTER

Nation Pillars

Society & culture

Spirituality

Social & Emotional, etc.



4



5

RELEVANCE

Job & Industry

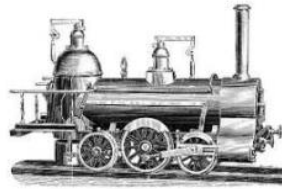
business.

Society need, etc

TRANSFORMASI DIGITAL



Revolusi Industri ke - 1
Abad 18



Mesin Uap
menggerakkan
industri

Mekanisasi

Revolusi Industri ke - 2
Abad 19



Tenaga Listrik
merubah
industri

Elektrifikasi

Revolusi Industri ke - 3
Abad 20



TI, Komputasi
dan Komunikasi

Otomasi

Revolusi Industri ke - 4
Abad 21



Sistem cerdas memungkinkan
konvergensi dunia digital dan
fisik: Internet of Things, Data,
People dan Services.

Otonomi

Dampak Positif
INDUSTRI 4.0
Indonesia

Akan lebih banyak tercipta pekerjaan hingga tahun 2030
daripada yang hilang karena otomasi

Sumber: McKinsey, Automation and the Future of Work in Indonesia, 2019

McKinsey
& Company

Automation and
the future of work
in Indonesia

AUTOMATION
THREATENS
**23
MILLION
JOBS**

Indonesia:
Sekitar **23 juta**
pekerjaan yang ada
saat ini akan digantikan
otomasi pada 2030.

Pekerjaan yang akan
hilang/berisiko otomasi
tersebut adalah pekerjaan
yang bersifat repetisi atau
berulang-ulang, seperti
*data entry, payroll officer,
production workers,
machine operator dan
data collection.*

Sektor kesehatan, konstruksi, manufaktur, dan ritel akan
mengalami peningkatan permintaan tenaga kerja.

Ada peluang,
27-46 Juta
Pekerjaan Baru

dan **10 juta** pekerjaan baru
tersebut diantaranya adalah
jenis pekerjaan yang belum
pernah ada sebelumnya.



JOYFUL

CREATIVE

CHALLENGE FOR TEACHERS

How to develop effective and joyful learning based on IT

ACTIVE



INNOVATIVE



STEPS OF IT UTILIZATION FOR TEACHERS



Teachers have
Proper Mindset
on the urgency of IT
for education

Have **Technical Skills**
in using IT for
education

Get used to utilize IT in
every learning
practice

Improve **Productivity**
in developing IT for
education

TEACHER ARE REQUIRED TO MASTER IT IN DIGITAL ERA



MOE DECREE NO.16 TH 2007 ON TEACHER QUALIFICATION AND COMPETENCY STANDARDS



*Through professional competency, a teacher should **use ICT in** teaching learning process*



*Through pedagogical competency, teacher is expected to understand students characteristics including physical, social, cultural emotional, intellectual, and **technological** aspects, as part of life*



*Through personality competency, a teacher need to **utilize ICT** for communication and personal development*

Various Utilization of IT by Teachers

In Learning Activities

Administrative

IT as support for administrative tasks, such as: preparing lesson plan, analyzing students test score, students learning report, etc.

Learning Resources

To seek digital learning materials, to enrich learning content

ICT based Learning Media

IT used by teachers as learning media, such as: presentation by using LCD Projector, Video, Animation, Smart Board, Internet, Smartphone, etc.

Research

IT as support for teachers' research activity (eg. Classroom action research)

Virtual Classroom

The utilization of Video Conference and Learning Management System (LMS), Virtual Lab, Discussion forum, etc.



TEACHER PRODUCTIVITY IN UTILIZING ICT



1

CONTENT CREATOR

Create IT-based learning content (Multimedia/ media by design)



2

PUBLISHER

Publish IT-based scientific articles and Multimedia content through video canal



3

APPS DEVELOPER

Create Web or Mobile applications in educational context



4

COMMUNITY EDUCATORS

Active in online based learning community



5

ICT LEARNING MANAGER

Manage ICT-based learning center, LMS or Startup in education

TYPES OF ICT INNOVATION FOR TEACHERS

UTILIZING INNOVATIVE ASSESSMENT

Use various assessment tools/software in learning evaluation



OPTIMIZING LEARNING MANAGEMENT SYSTEM

Utilization of ICT-based learning software/platform as substitution for face-to-face learning (for distance learning)



DEVELOPING DIGITAL LEARNING MATERIALS

Create and seek digital learning materials such as e-book, e-journal, online encyclopedia



USING INNOVATIVE LEARNING METHODS

Use teaching & learning methods that encourage HOTS, such as Case Method & Project Based Learning



PLANNING ADAPTIVE LEARNING

Create map of Learning Object Materials



USING DIGITAL LEARNING MEDIA

Develop various ICT-based digital learning media





TYPES OF IT-BASED MEDIA FOR TEACHERS



Multimedia For Presentation



Streaming Video



Podcast Video



Audio Player



Internet / Web



Mobile Learning



Augmented Reality



Virtual Reality



Virtual Laboratory

TEACHERS HAVE TO TREAT STUDENTS AS **LEARNERS**, NOT AS OBJECT BUT SUBJECT OF LEARNING

Learners as Content Producer & Sharer



Access to Experts



Learners as Connection-Maker



LEARNERS 4.0

The Web as Curriculum



Learners as connectors, creators, constructivists



Diversity of Network

Open Access to Information



Educator as Resource Guide



Learners as Teachers



CHALLENGES OF IT UTILIZATION IN LEARNING

INFRASTRUCTURE & FACILITIES



- Availability of basic facilities, especially internet connection
- Need of government intervention in providing infrastructure throughout the country
- Availability of required standardized device
- Tools that meet the need of online learning
- Need offline room such Digital Smart Classroom, etc.

APPLICATION & LEARNING CONTENT



- Platform of E-Learning that meets with the need of online learning
- Adequate offline room and *Virtual Environment*
- Multimedia content for interactive learning
- Valid and reliable learning assessment technology

TEACHERS



- ICT literacy for teachers/HE lecturers to improve productivity based on IT
- Mental Gap: Change mindset
- Teacher creativity in developing learning content
- Understand Cyber Pedagogy
- Menguasai metodologi dalam Asessment Online

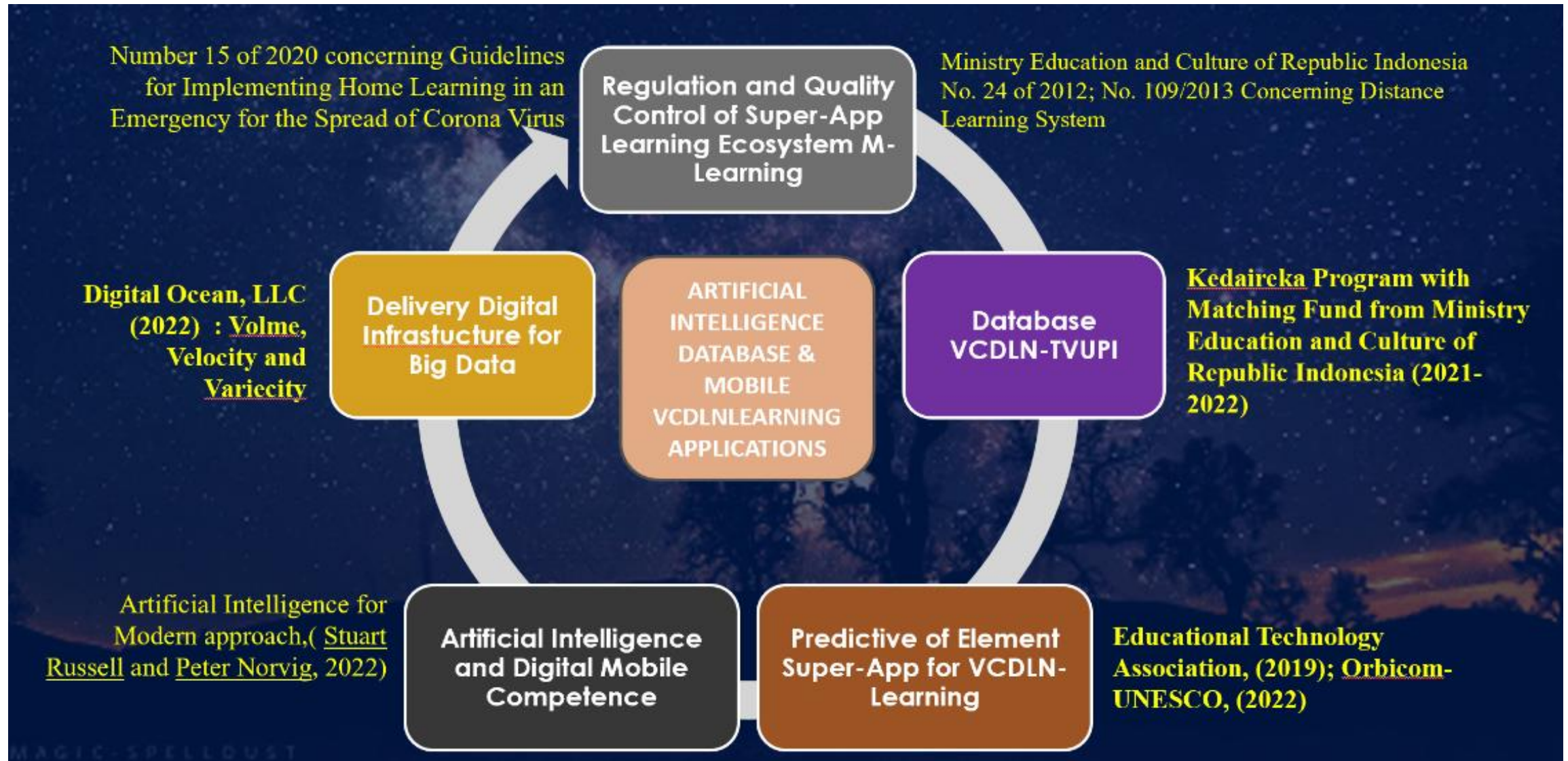
CURRICULUM



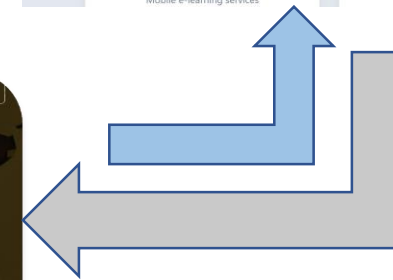
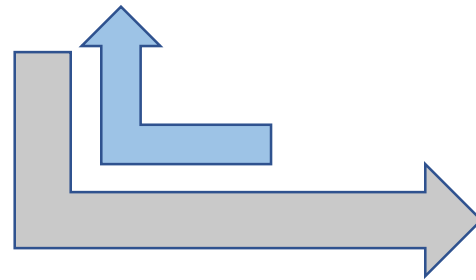
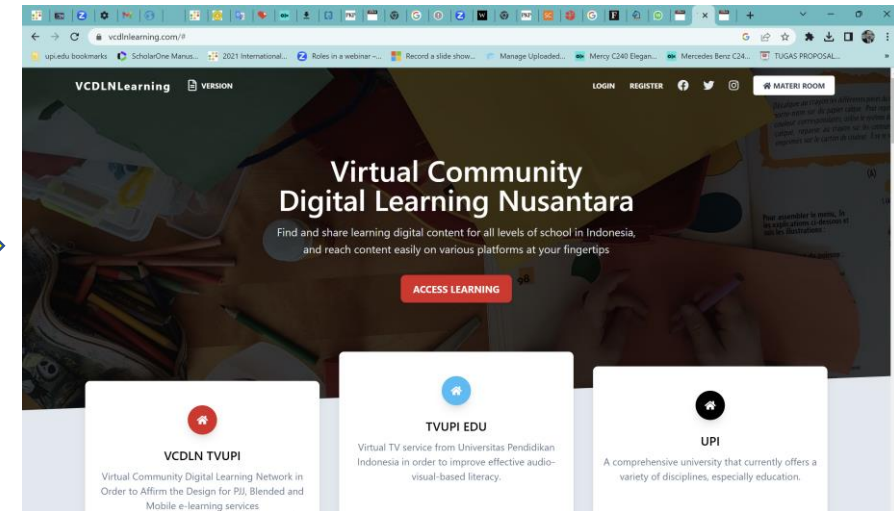
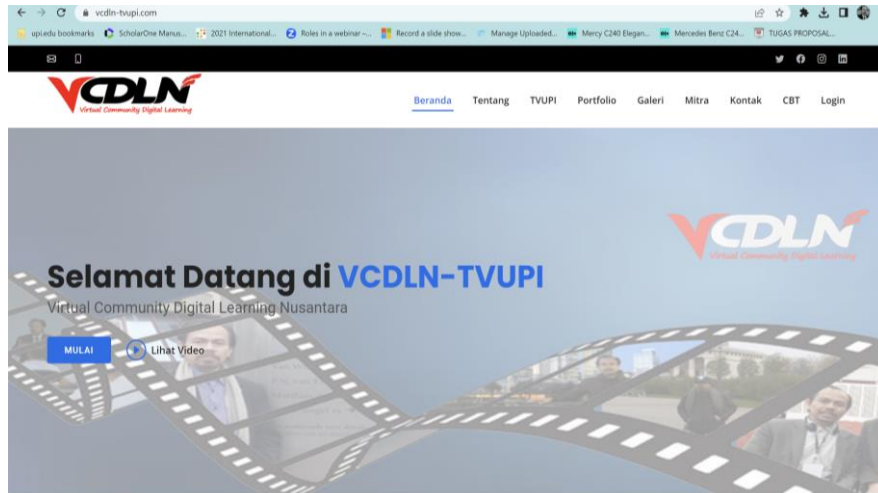
- Need for adaptive curriculum design
- Need clear regulation from institution leaders
- Implementation in line with principles and rules of online learning
- Develop relevant curriculum (eg lesson plan that is line with online learning)



NETWORK MODEL FOR GENERATE LEARNING CONTENT VCDLN-TVUPI DATABASE ONLINE TO MOBILE SUPER-APP TVUPI/VCDLN BASED ON ANDROID SYSTEM THROUGH AI FRAMEWORK

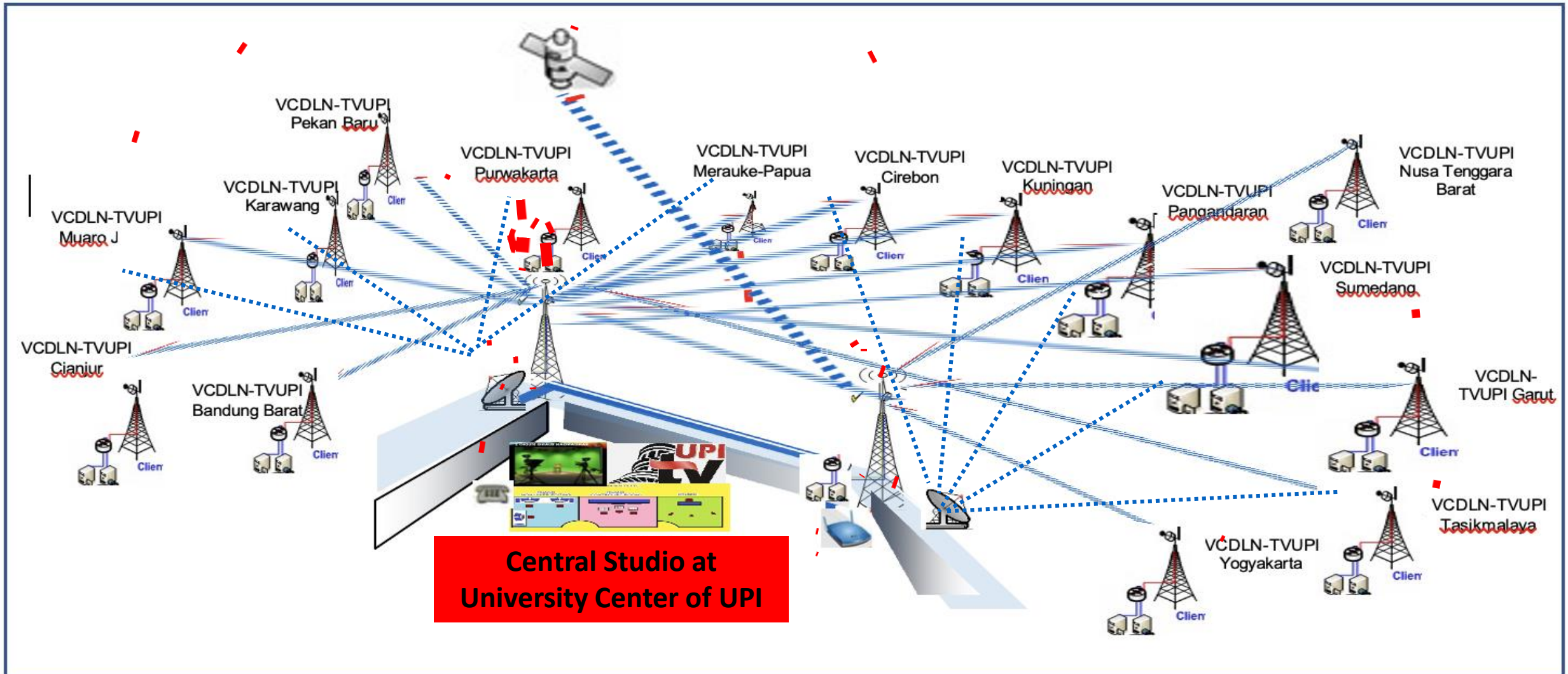


GOOD PRACTICE FROM UPI: EXAMPLE OF IMPLEMENTATION FROM REGULATION OF DIGITAL TRANSFORMATION FOR TEACHER EDUCATION



GOOD PRACTICE FROM UPI

Networking of TVUPI'S VCDLN in Supporting Strategic Mobile Communication for Educational Services





- SHOW BUSINESS
- NETWORK
- MUSIC
- CINEMA
- BUSINESS/FINANCE
- WORLD NEWS

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NETWORK SEARCH

- PEOPLE
- FORUMS
- MAIL
- SHOP
- BUY
- SALE

- NETWORK
- MUSIC
- CINEMA
- BUSINESS/FINANCE
- WORLD NEWS

THANK YOU VERY MUCH

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UPI The Education University