Innovating Education in Response to Opportunities and Challenges of Digital Industry: The Case of Open and Distance Learning in West Java Province, Indonesia

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Why Open and Distance Learning?

- Access and reach
- Equity and gender
- Quality and effectiveness
- Relevance and life-long learning
- Globalization and technology
- Cost and efficiency

(Sanjaya Mishra, 2010)

What is Open Learning?

Giving learners choice about:

- medium or media, whether print, on-line, television, or video;
- place of study, whether at home, in the workplace or campus;
- pace of study, whether closely paced or unstructured;
- support mechanism, whether tutor on demand, audio conferences or computer-assisted learning; and
- entry and exit points

(Sanjaya Mishra, 2010)

What is Distance Learning?

It refers to the following characteristics:

- separation of teacher and learner
- institutional accreditation
- use of mixed-media courseware
- two-way communication
- possibility of face-to-face meetings
- use of industrialized processes

(Sanjaya Mishra, 2010)

Teaching-Learning Scenario

	Same time	Different time
Same place	Classroom teaching, face-to-face tutorials and seminars, workshops and residential schools	Learning resource centres, which learners visit at their leisure.
Different place	Audio conferences and video conferences; television with one-way video, two-way audio; radio with listener–response capability; and telephone tutorials.	Home study, computer conferencing, tutorial support by e-mail and fax communication.

(Sanjaya Mishra, 2010)

Globalization

Nairn (2009) in his article entitled ‘Globalization’:

- Around the globe all kind of individuals and groups are connected easily and no single crisis could slow down their activities, not even an economic crisis.
- Globalization is such a diverse, broad-based, and potent force that not even today's massive economic crash will dramatically slow it down or permanently reverse it.

Industrial Revolution

INDUSTRIAL REVOLUTION TIMELINE

First

Water and steam power is used to create mechanical production facilities.

Second

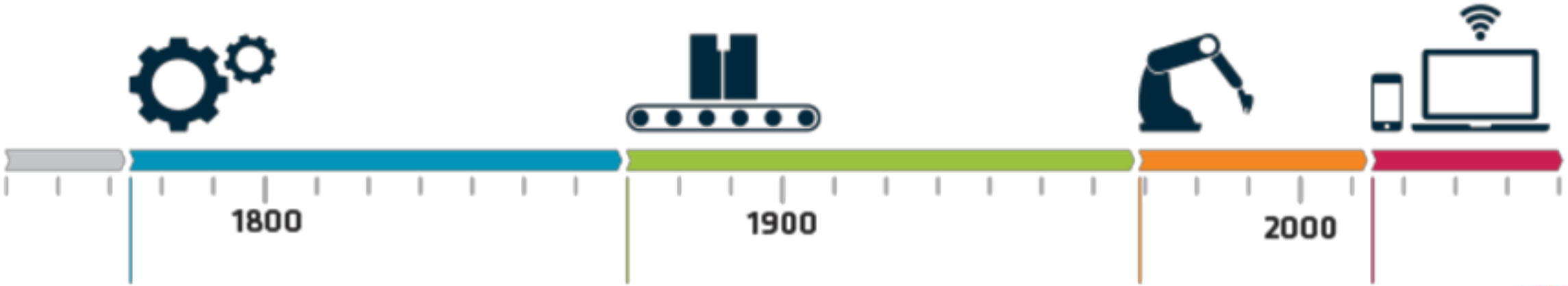
Electricity lets us create a division of labor and mass production.

Third

IT systems automate production lines further.

Fourth

IoT and cloud technology automate complex tasks.



1784: First mechanical

1870: First assembly

1969: First programmable

Today

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Challenges for Southeast Asia

- Inequality access to education in the region
- The transformative impact of this revolution will demand that countries think deeply about their policies and priorities at a national scale
- Southeast Asian countries must together develop education system which is forward-looking, future oriented, pragmatic and strategic

Factors to disparities in accessing education in Southeast Asia

1. lack of available school building and classroom with all required facilities
2. shortage of teachers, especially in remote areas
3. uneven spread of population
4. lack of good textbooks and other learning materials
5. geographical location
6. student's and parent's low appreciation toward education
7. level of socio-economic condition of the family
8. lack of budget for building more schools, classrooms, learning facilities

Quoted from: "Challenges in Education in Southeast Asia", Sadiman (2004)

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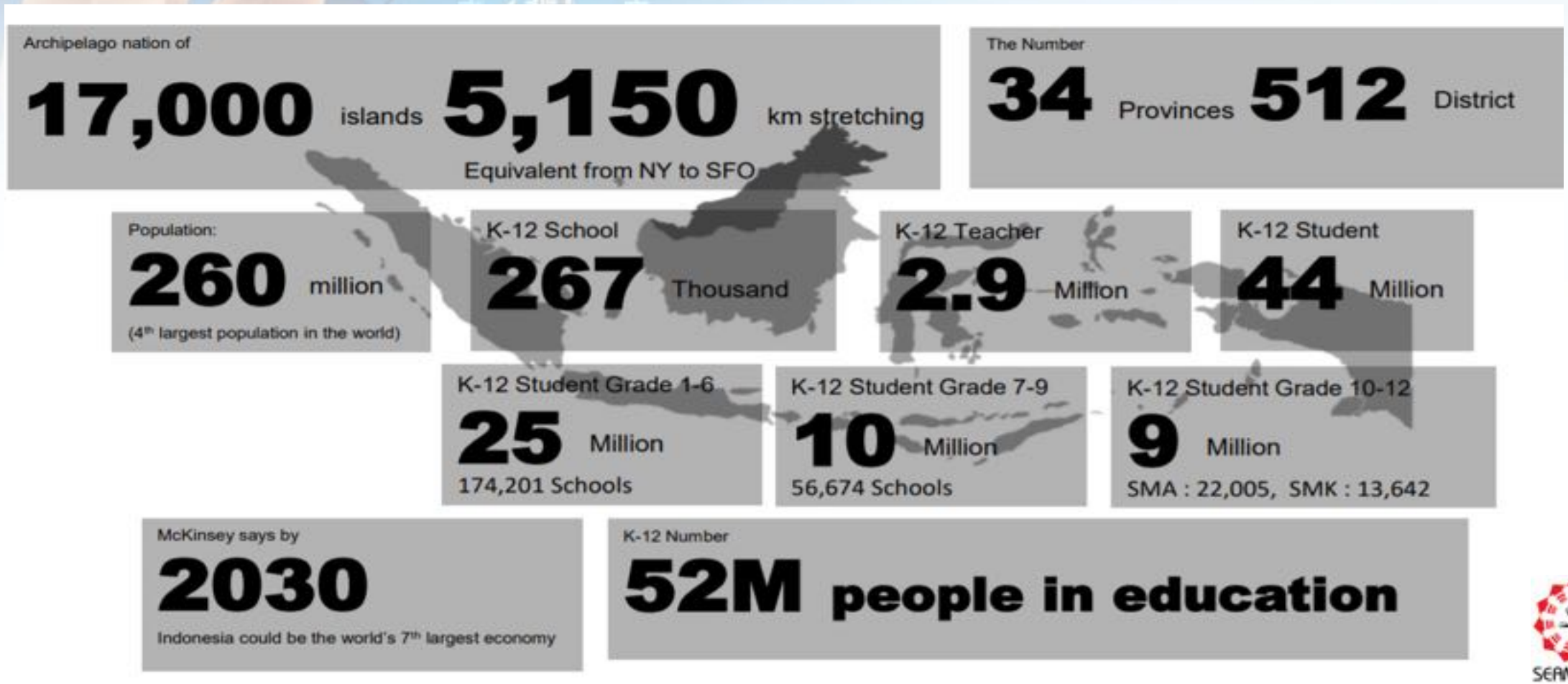
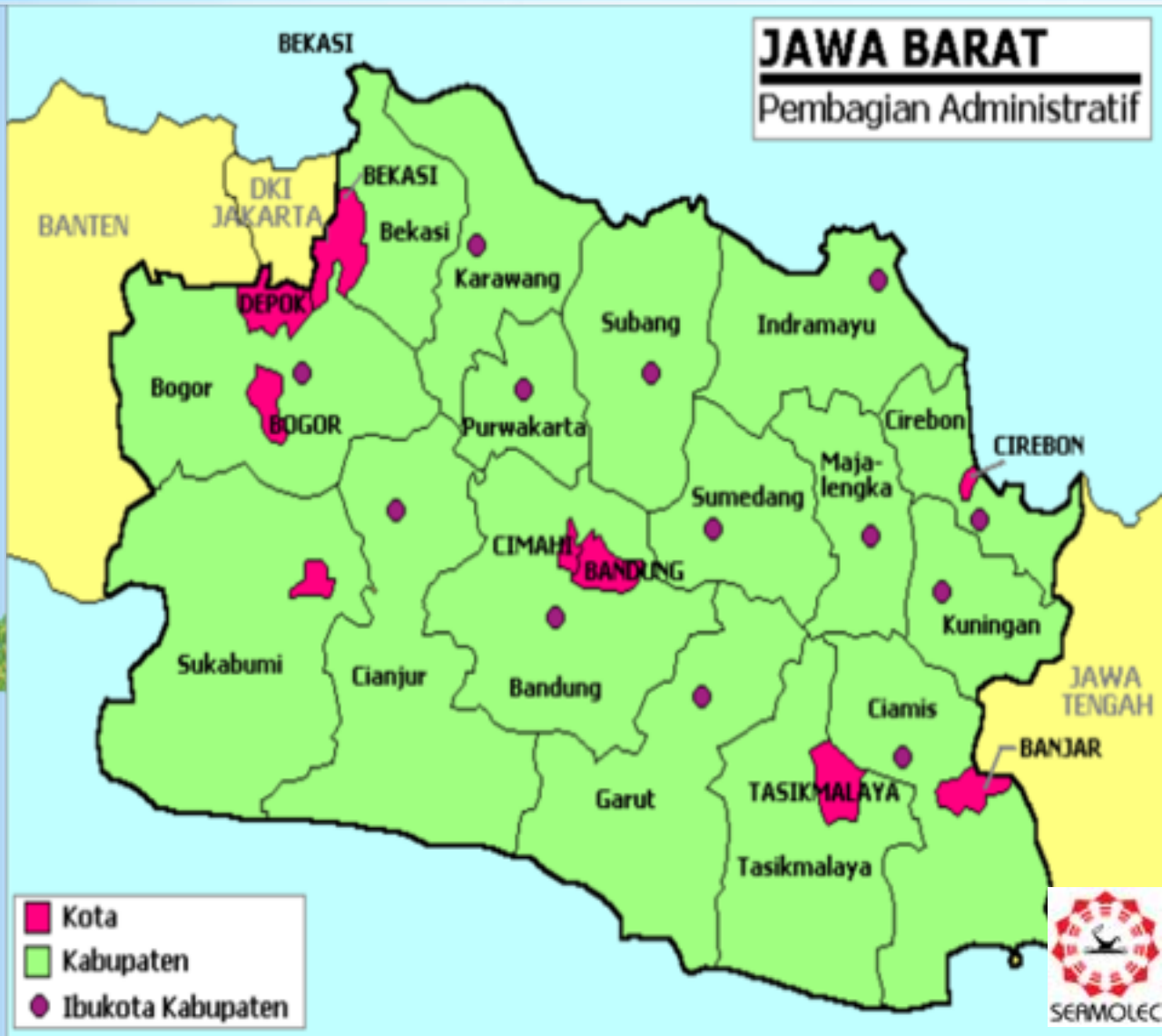
Education Landscape in Indonesia

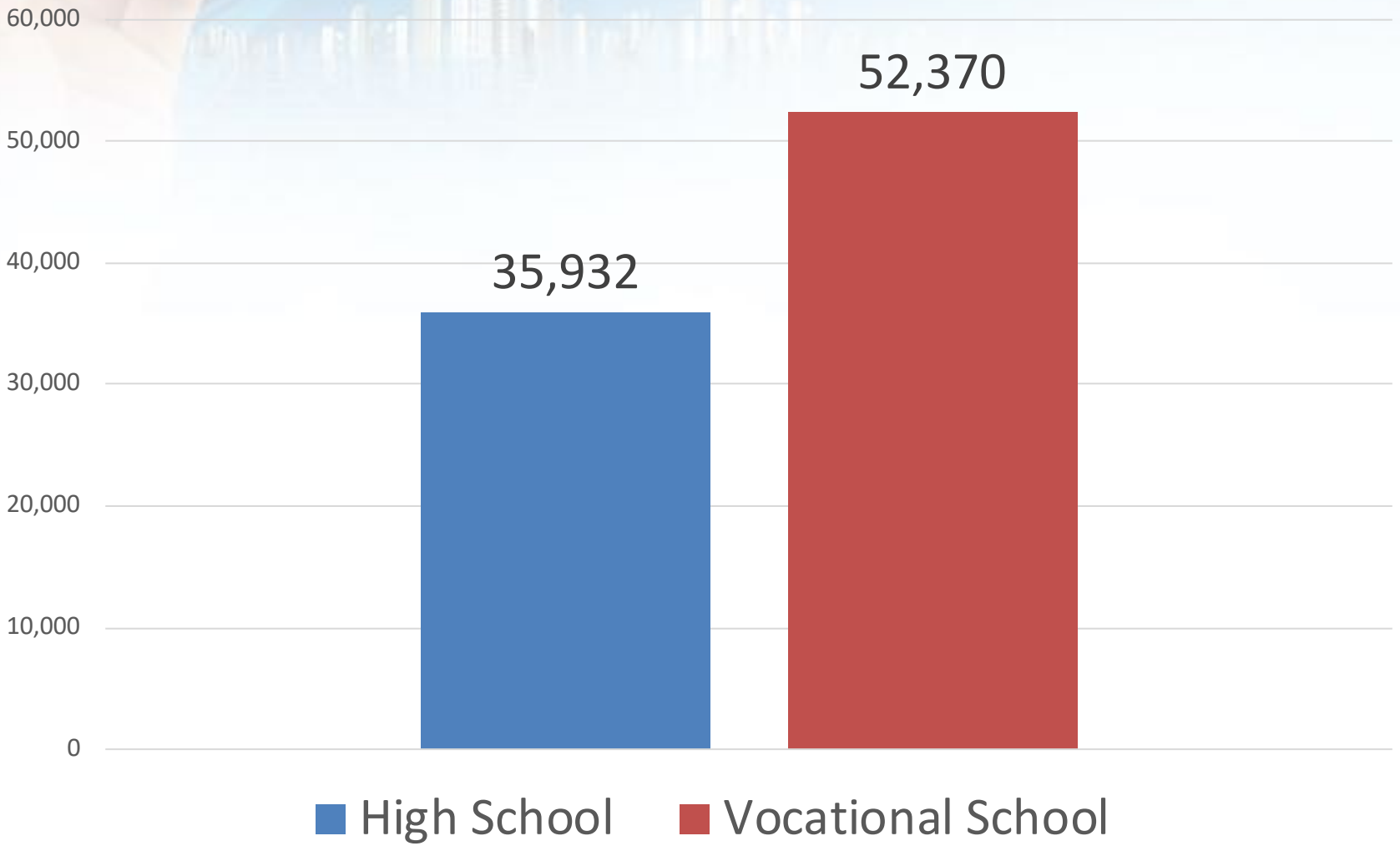


Source: ICT Center of Ministry of education and culture – presentation at Bangkok 10-11-28

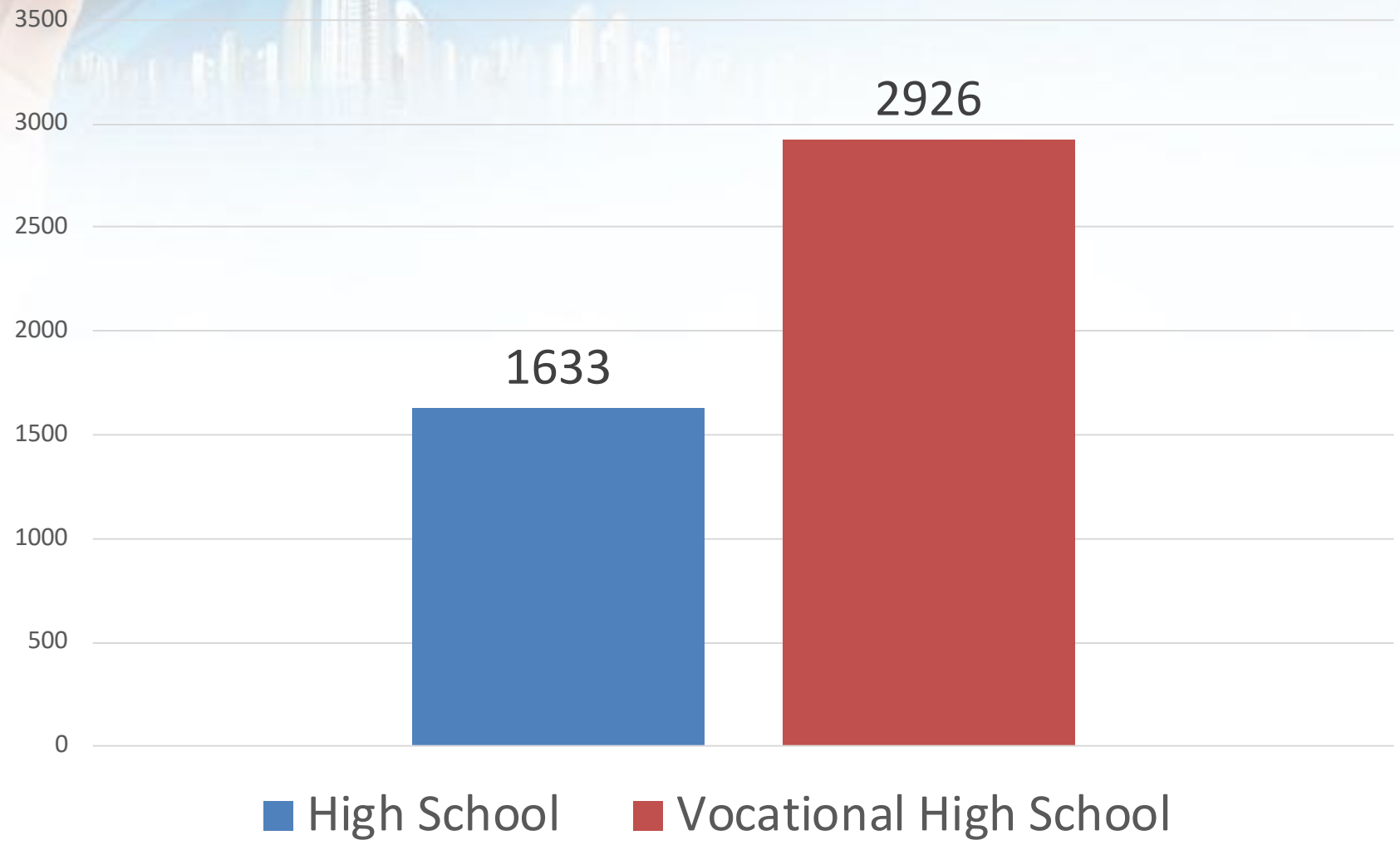
WEST JAVA PROVINCE, INDONESIA



TOTAL NUMBER OF TEACHERS IN WEST JAVA PROVINCE – SENIOR HIGH SCHOOL AND VOCATIONAL HIGH SCHOOL

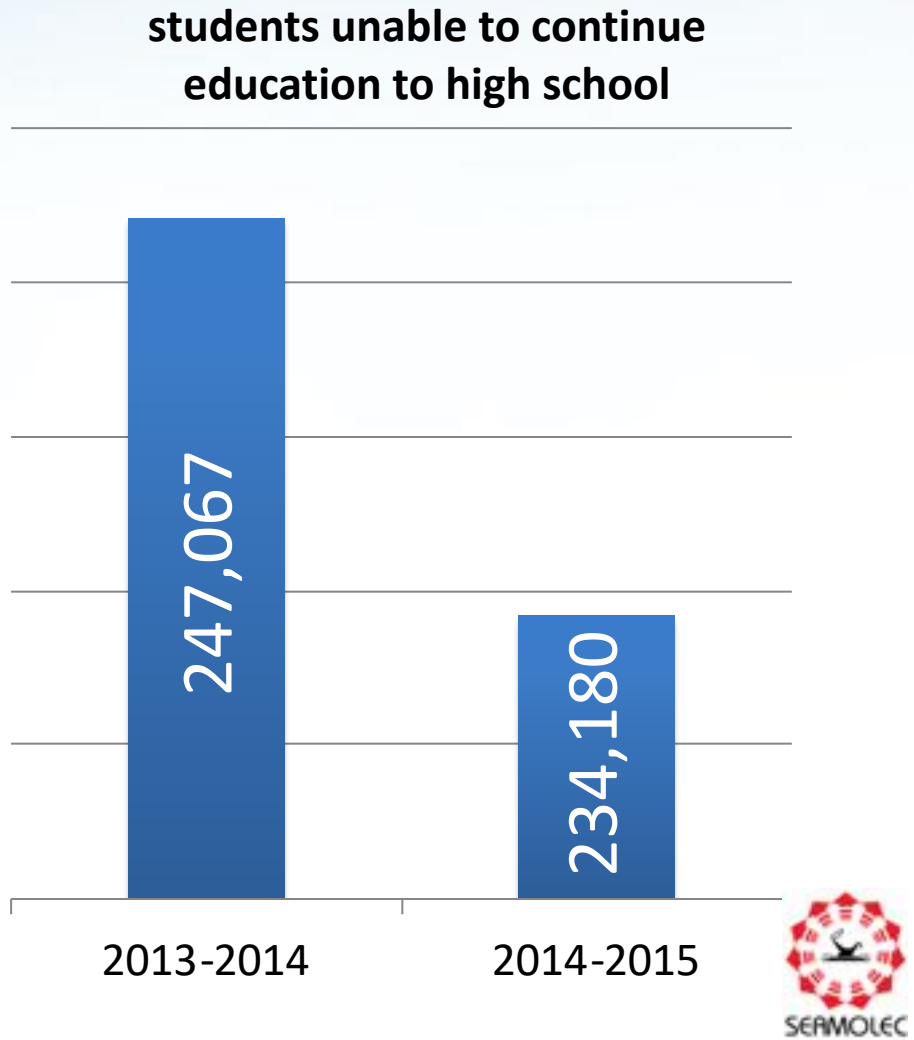


TOTAL NUMBER OF SCHOOLS IN WEST JAVA PROVINCE – SENIOR HIGH SCHOOL AND VOCATIONAL HIGH SCHOOL



Problems of West Java

- enrolment rate of students was very low
- disparity in school capacity
- the low economic status of parents or community
- the remoteness of student residence
- social and geographical difficulties to reach regular education services

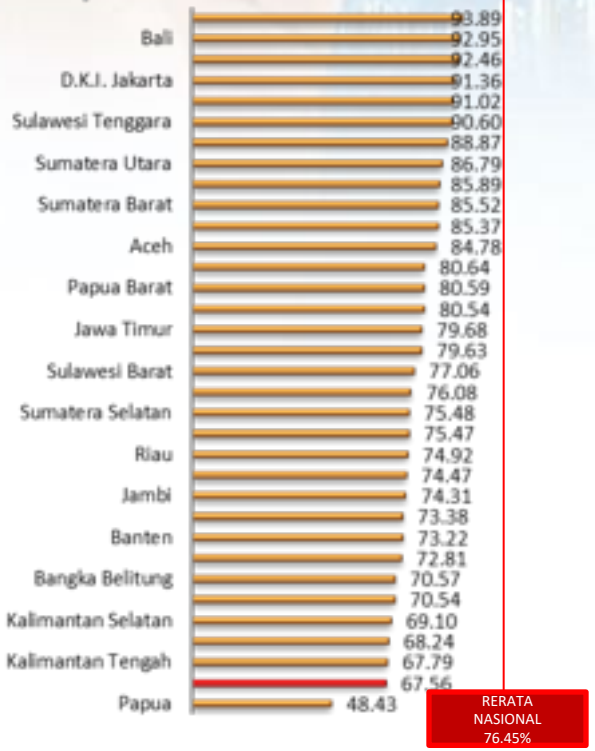


Gross Enrollment Rate

DATA SMA/SMK IN WEST JAVA 2015-2016

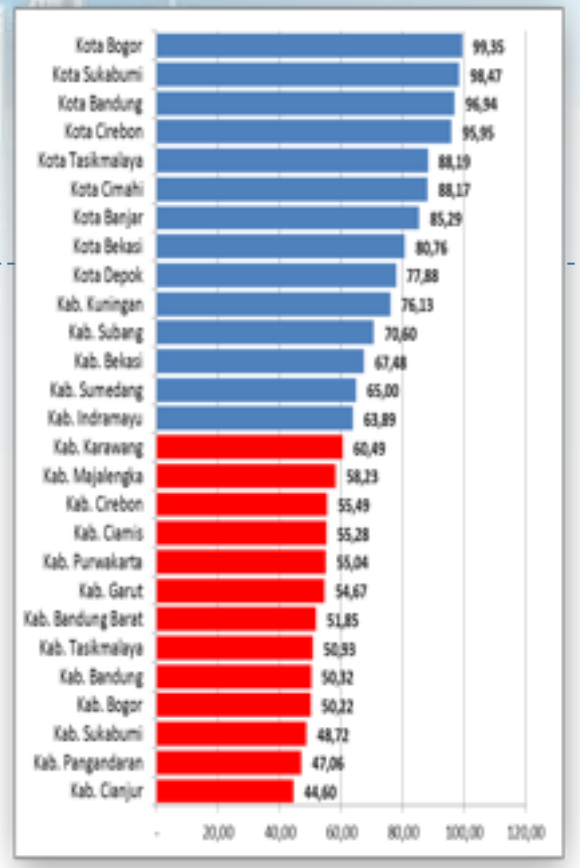
APK SM 15/16

Penduduk Usia : 2.489.800
Siswa SM : 1.682.119
Siswa SMK (53%) : 903.343
Siswa SMA (47%) : 778.776



Sumber: Disarikan dari Neraca Pendidikan Kemdikbud dan Data Statistika Pendidikan Provinsi Jawa Barat

APK SM KAB/KOTA SE JAWA BARAT



JUMLAH LEMBAGA SM SE JAWA BARAT

JENJANG PENDIDIKAN	NEGERI	SWASTA	TOTAL
SMA	467	931	**1.398**
SMK	271	2.254	**2.525**
MA	77	949	**1.026**
JUMLAH	**815**	**4.134**	**4.949**

DAYA TAMPUNG SM SEDERAJAT DAN JUMLAH LULUSAN SMP/MTS SEDERAJAT SE JAWA BARAT

JENJANG PENDIDIKAN	DAYA TAMPUNG SM SEDERAJAT*	LULUSAN SMP/MTS SEDERAJAT	SELISIH
SMA	167.628	**767.262** (data UN 2016)	**297.696** (Lulusan Smp/Mts Sederajat Yng Tidak Tertampung)
SMK	248.582		
MA	53.357		
JUMLAH	**469.567**		

*Daya tampung SM = Lulusan SM(data UN TA 2015-2016)

Proyeksi laju pertumbuhan penduduk Jawa Barat dengan adalah 1,9 % untuk tahun 2013-2018 (BPS) sebagai berikut

TAHUN	PROYEKSI PERTUMBUHAN ANAK USIA 16-18 TAHUN
2015	2,518,153
2016	2,565,998
2017	2,615,008
2018	**2.666.262**

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SEAMEO Regional Open Learning Centre

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SEAMEO SEAMOLEC VISION AND MISSION

Vision:

To be the Centre of expertise
in Open and Distance Learning

Mission:

To assist SEAMEO Member Countries in identifying educational problems and finding alternative solutions for sustainable human resource development through the dissemination and effective use of open and distance learning

SEAMEO MEMBER COUNTRIES

Mission:

To assist SEAMEO Member Countries in identifying educational problems and finding alternative solutions for sustainable human resource development through the dissemination and effective use of ODL

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CARES

- Collaboration
- Accountability
- Responsiveness and Relevance
- Effectiveness and Efficiency
- Synergy

Core Programs

Training

Research & Development

Consulting

Information Dissemination

…in Open and Distance Learning

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SEAMOLEC and its ROLES

The Provision of Distance Learning Programme for West Java Province

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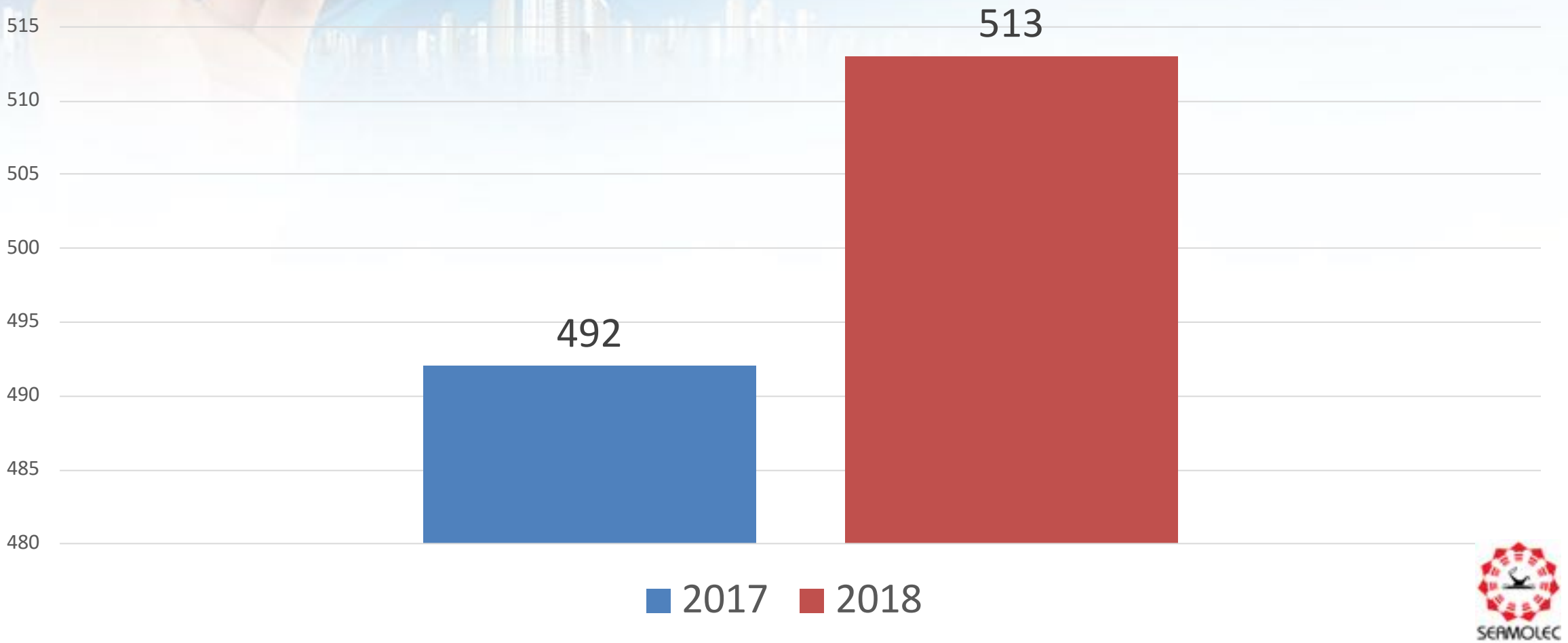
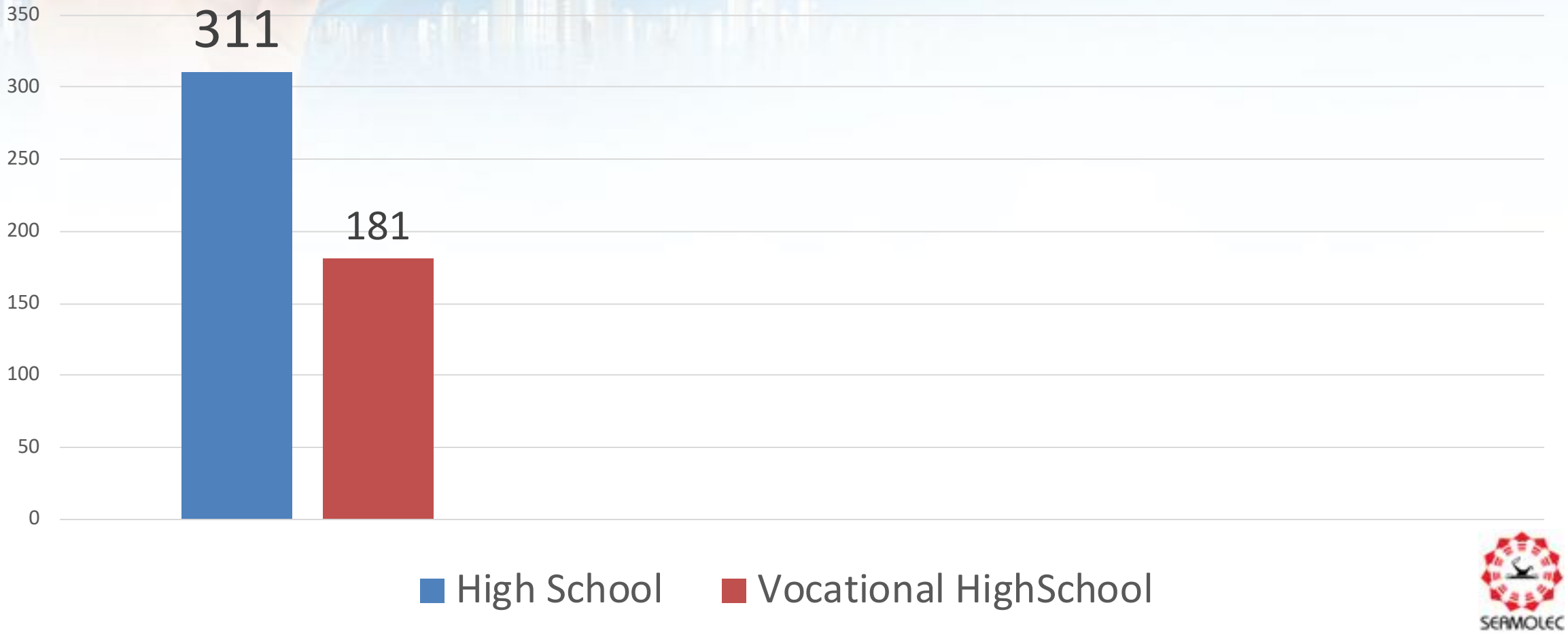
Programme Objectives

1. to improve access, quality, and relevance of secondary education
2. to support the achievement target of Universal Secondary Education in Indonesia
3. to improve access to secondary education for the junior high school graduates who are unable to continue their education due to economic, geographical, time, social and cultural constraints
4. to increase the enrolment number of secondary education in West Java Province
5. to improve the quality and access of education through distance education system in Indonesia, especially in West Java province
6. At a wider scope, this programme is expected to reduce unskilled labor and improve their working skills and capabilities

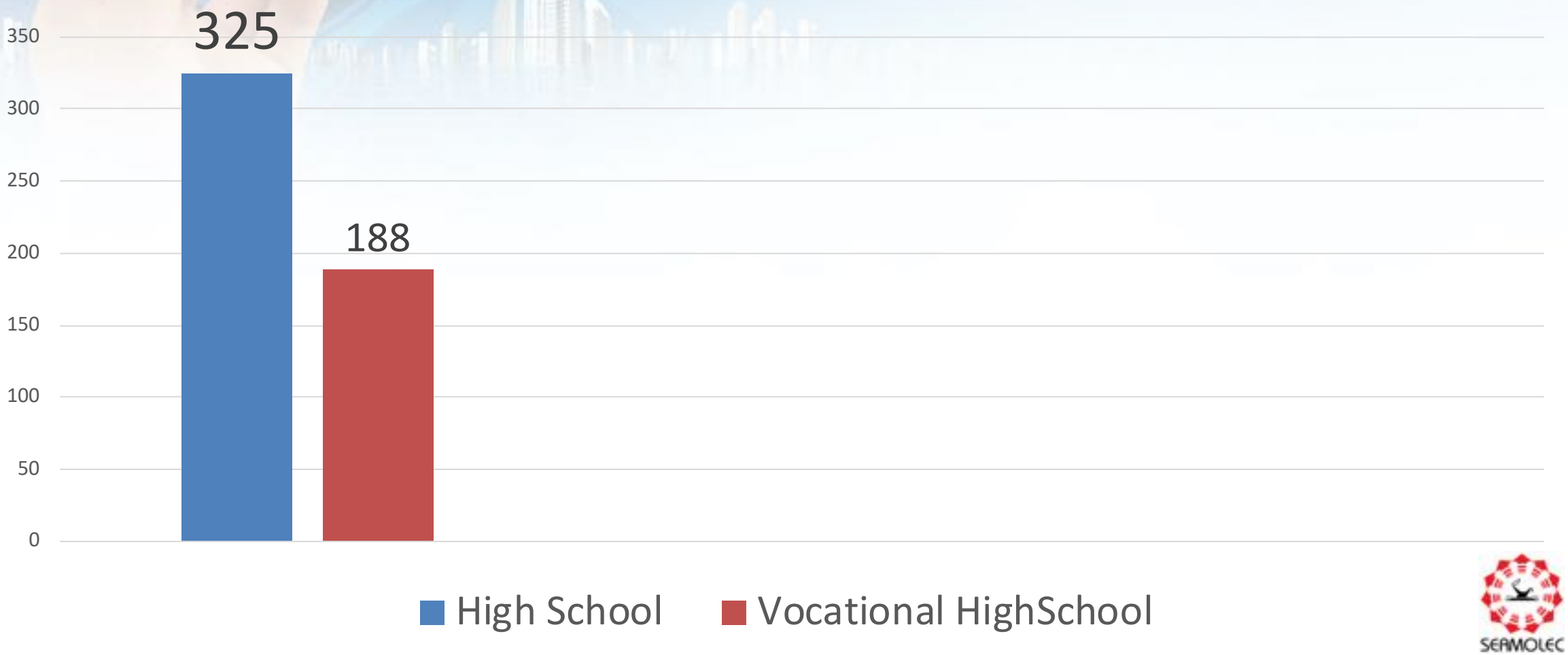
Number of schools as ODL providers



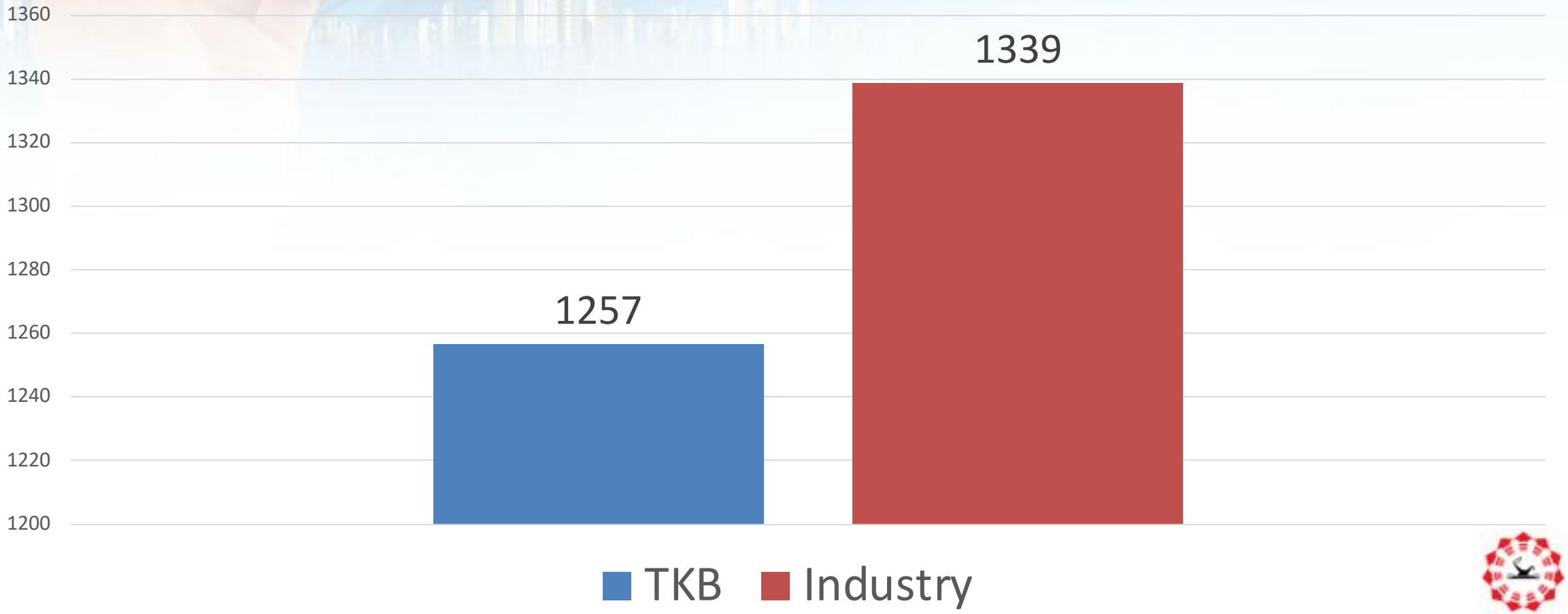
Number of schools as ODL providers in 2017



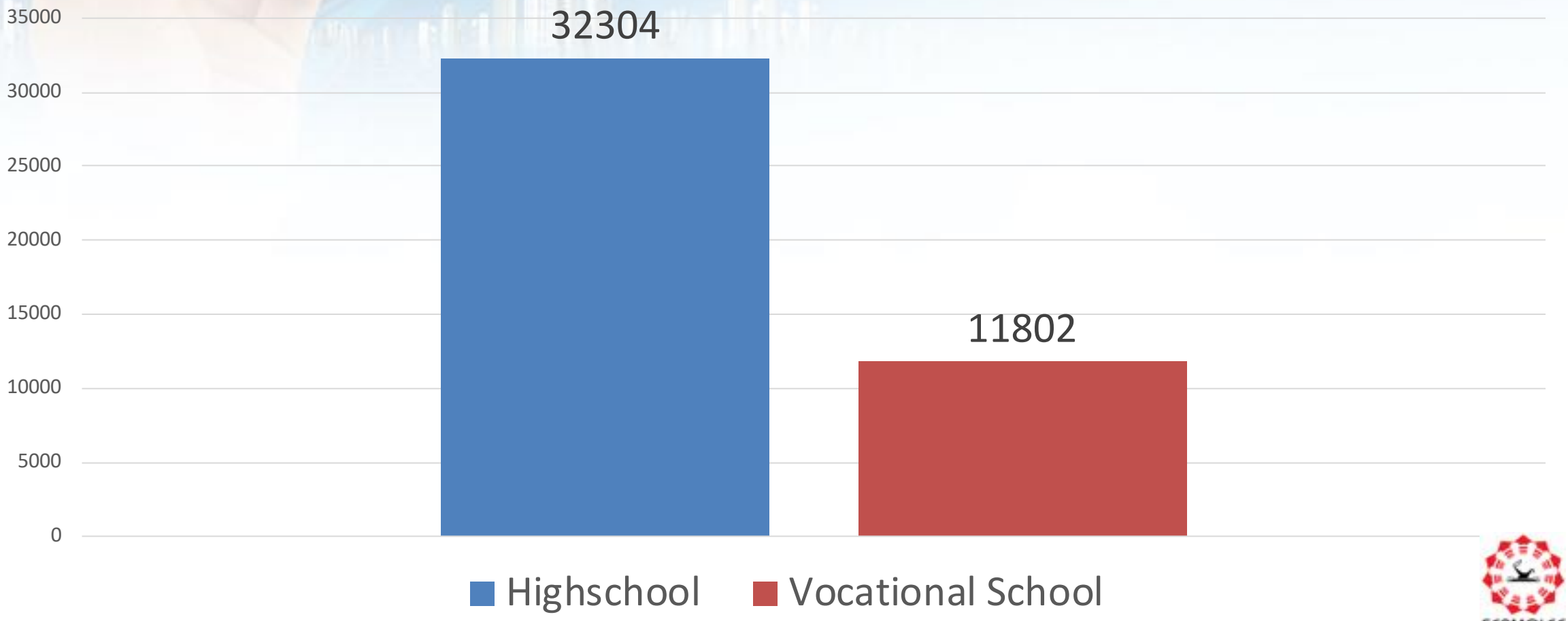
Number of schools as ODL providers in 2018



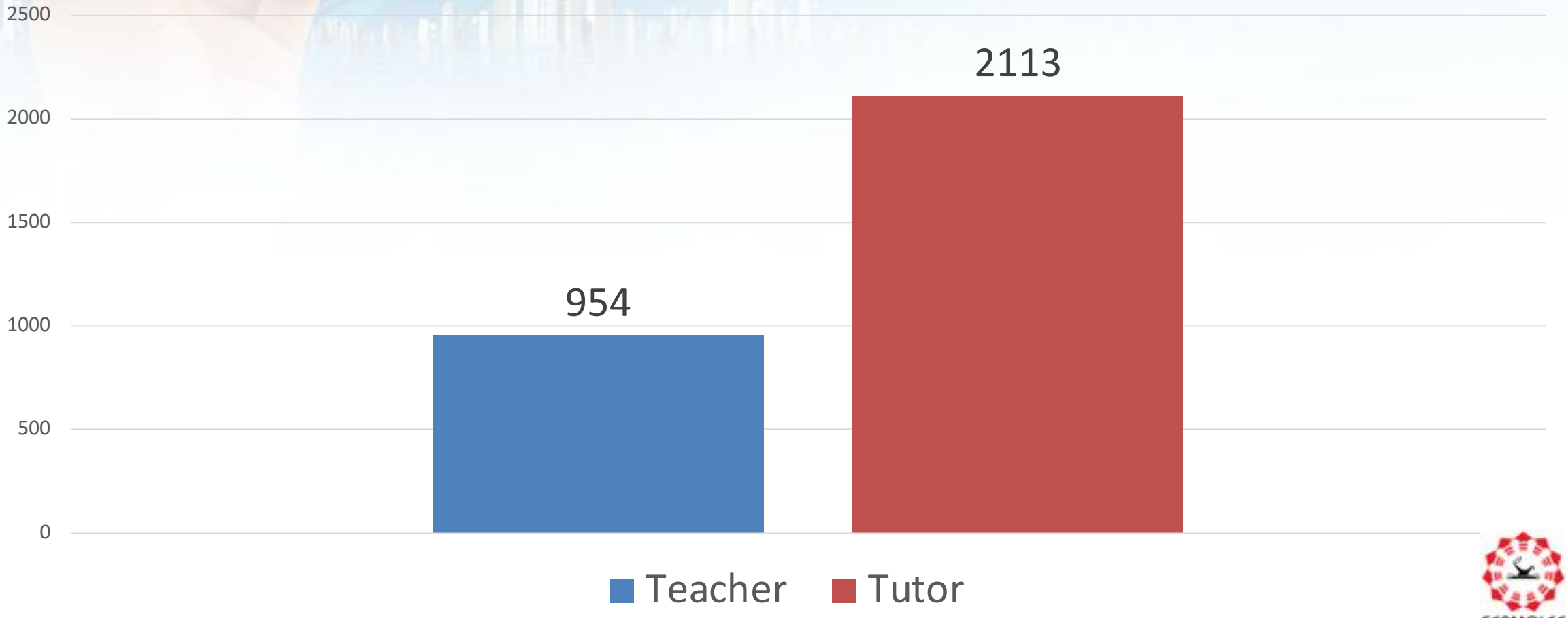
Number of Community Learning Centres



Number of ODL students in West Java Province



Number of teachers and tutors involved in ODL

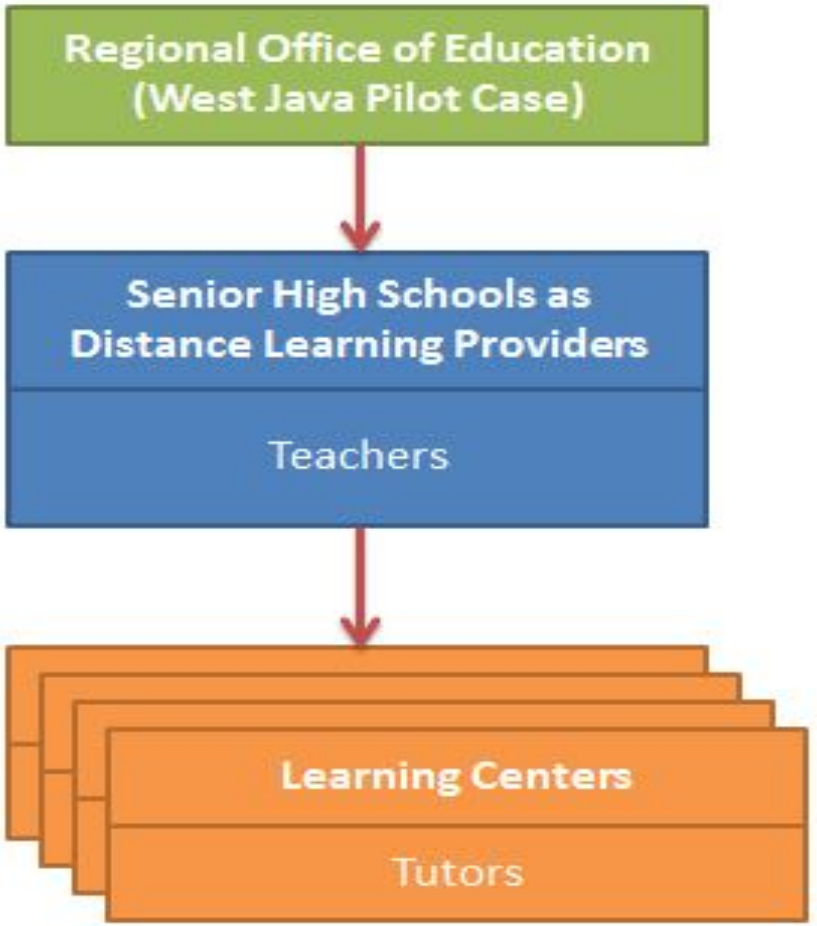


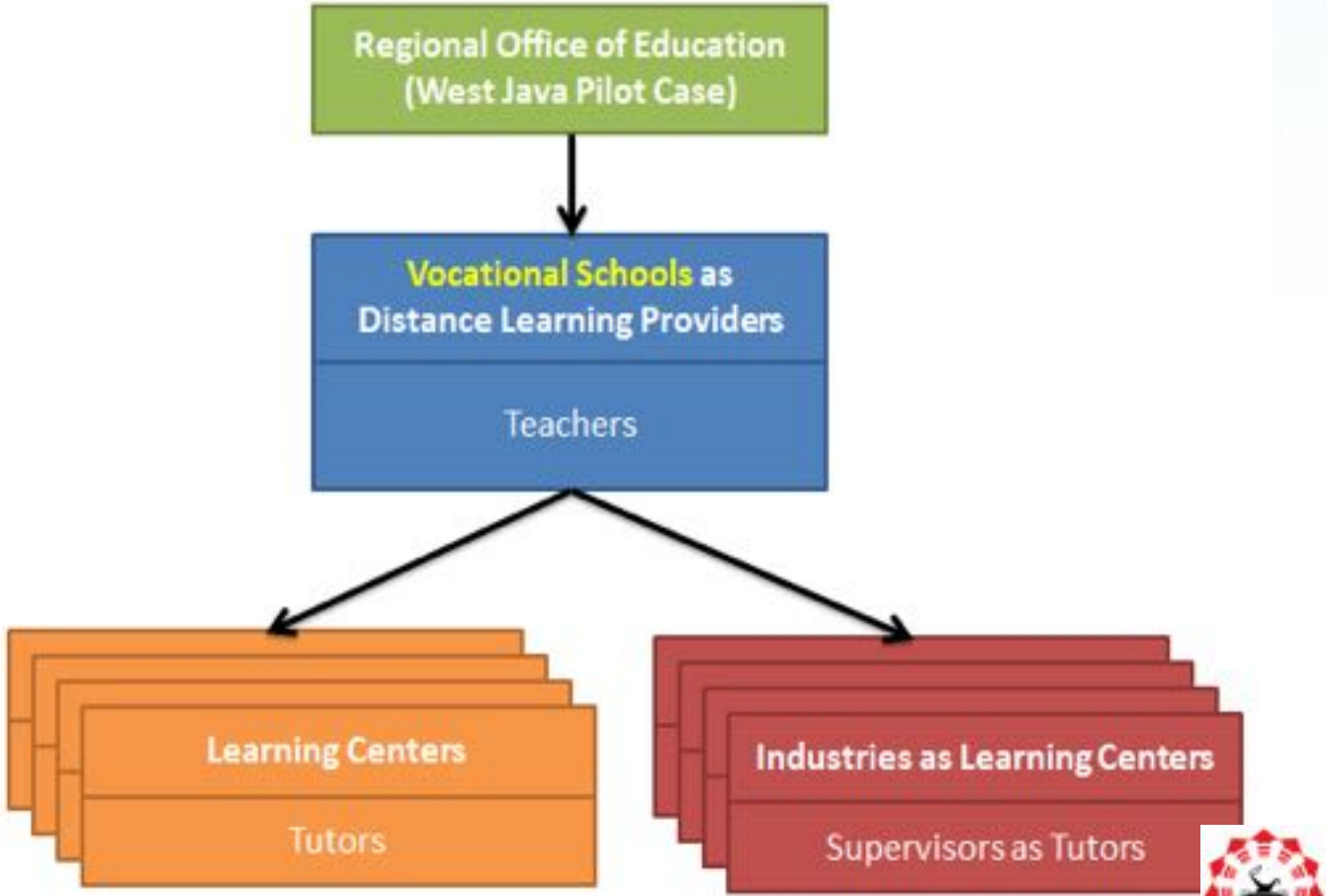
SEAMOLEC's Roles

SEAMOLEC involved in:

1. developing the programme design
2. creating guidelines
3. curriculum adjustment
4. programme and system development
5. instructional materials development and teacher training

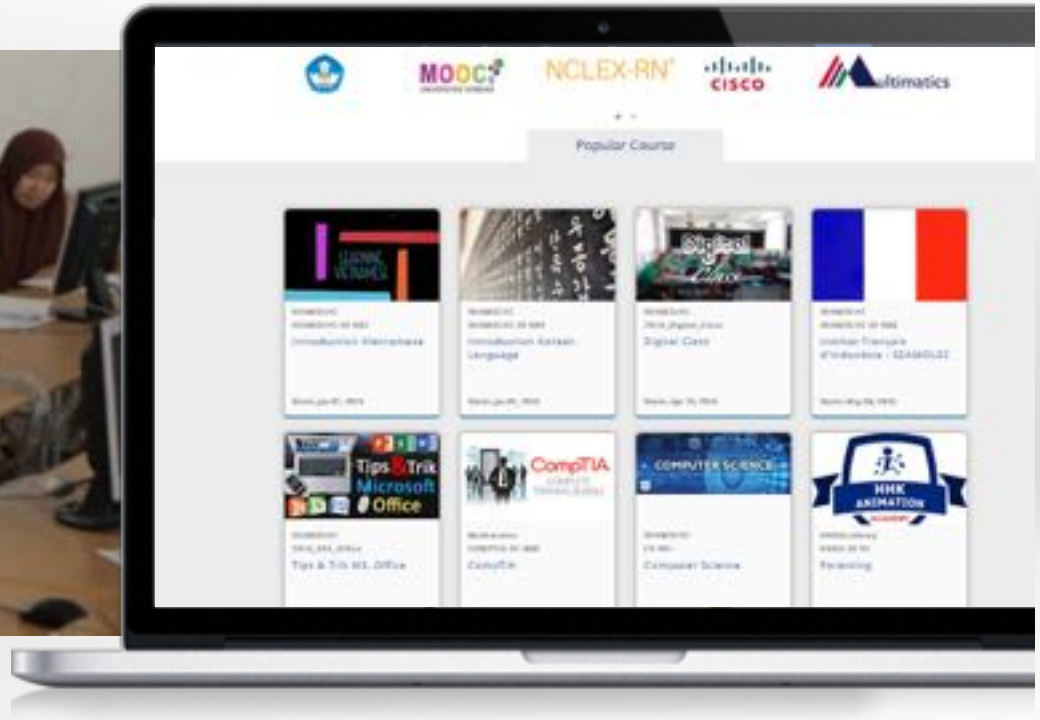
2 Types of Distance Learning Implementation





REQUIREMENT for conventional digital learning

- Internet
- Computer lab
- Satellite
- Server
- Personal Computer



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How about remote areas?

This is

SIERRA

SEAMOLEC Innovation on Educational Resources for Remote Area

SIERRA Specification :

- ✓ Can be accessed by 30 Students (default)
- ✓ Can distribute more than 60.000 Contents
- ✓ Can be used as local server
- ✓ Use less resource power
- ✓ Replace electricity using *power bank* or *solar cell*
- ✓ Can be used for exam try out with more than 1.000 questions

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Cost comparation beetween conventional computer lab vs SIERRA Device

	Computer Lab	Sierra
Main devices	40 personal computer	40 Smartphone/ tablet
cost	@ 500 USD x40	@100 USD x40
Setup	Networking Cable configuration and setup	Staging and Installation
cost	500 USD	100 USD
Other component	Switch 2 pcs + electricity 1 month	Power Bank 10,000 mAh
cost	400 USD + 200 USD	@ 10 USD x 40
Accessing Digital Content	Internet Connection	-
cost	1,000 USD / year	-
Total Cost	**22, 100 USD**	**4,500 USD**

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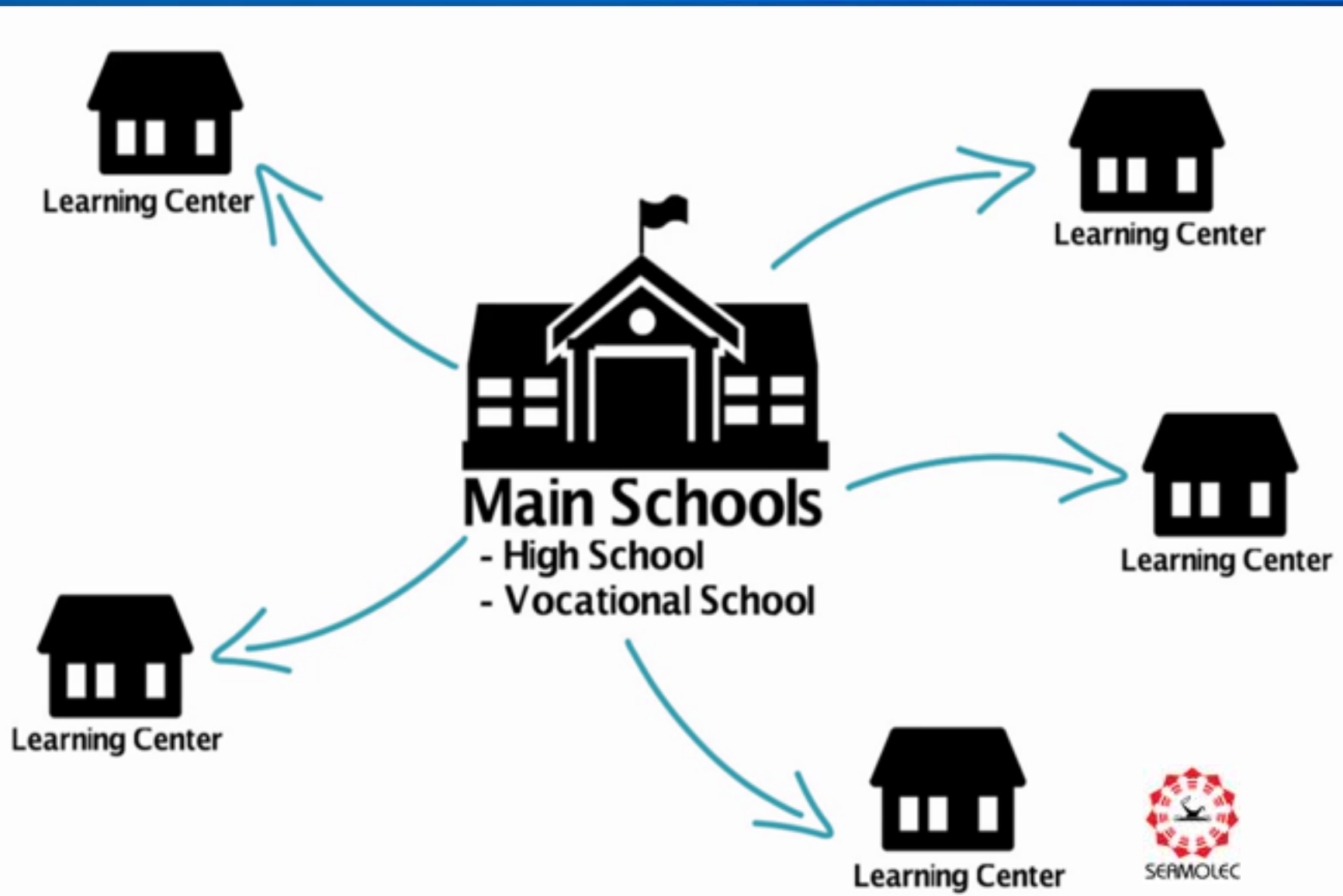
Learning Centres



Open High School and Learning Activity Units

- SMAN 2 Padalarang as a Main School
- TKB (Learning activity unit-tempat kegiatan belajar)1 located on Situwangi Kecamatan Cihampelas
- Distance beetween Main Schools to TKB is 17 km.

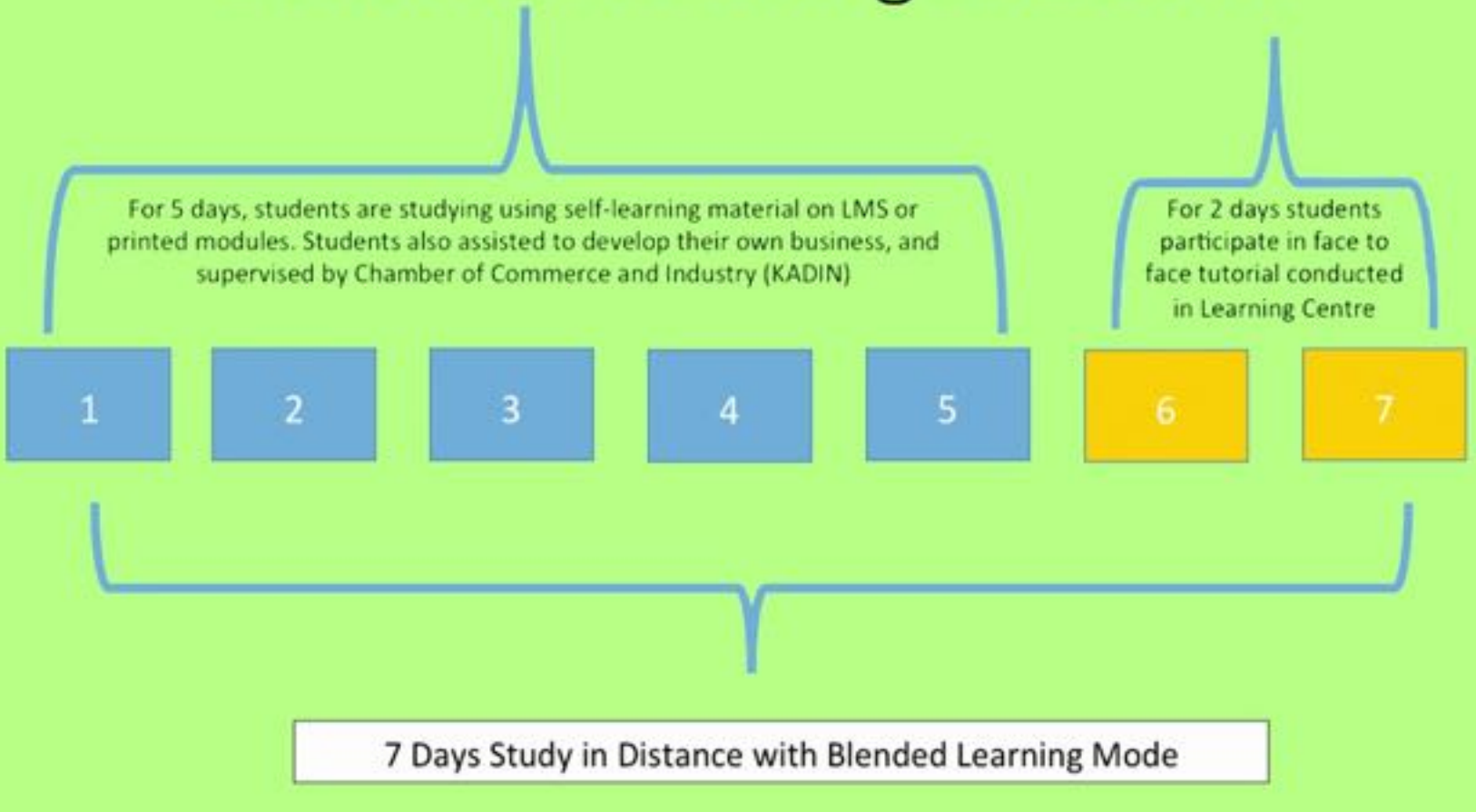
Learning Centres

Distance Learning Provider

- LC → Located in Junior High School, Community Learning Centre
- LC → Located in Market, Store, Agricultural Land, Community Business Unit
- LC → Located in Community Centre; Head of Community Office, Community Hall
- LC → Located in industry

Flexible learning process

Example of Learning Schedule For Distance Learning Students



Hybrid-mode of ICT-based ODL

- Delivers its learning materials via three types of blended mode:
  1. face-to-face based
  2. video conference based
  3. web-based
- ICT based is ranging from 30-79%
- Face-to-face delivery is 30%
- Allows students to study while not leaving their work
- Communication between students and tutors is carried through emails, mobile communication application
- Uses web-based learning resources

Learning Management System (LMS)

Called:

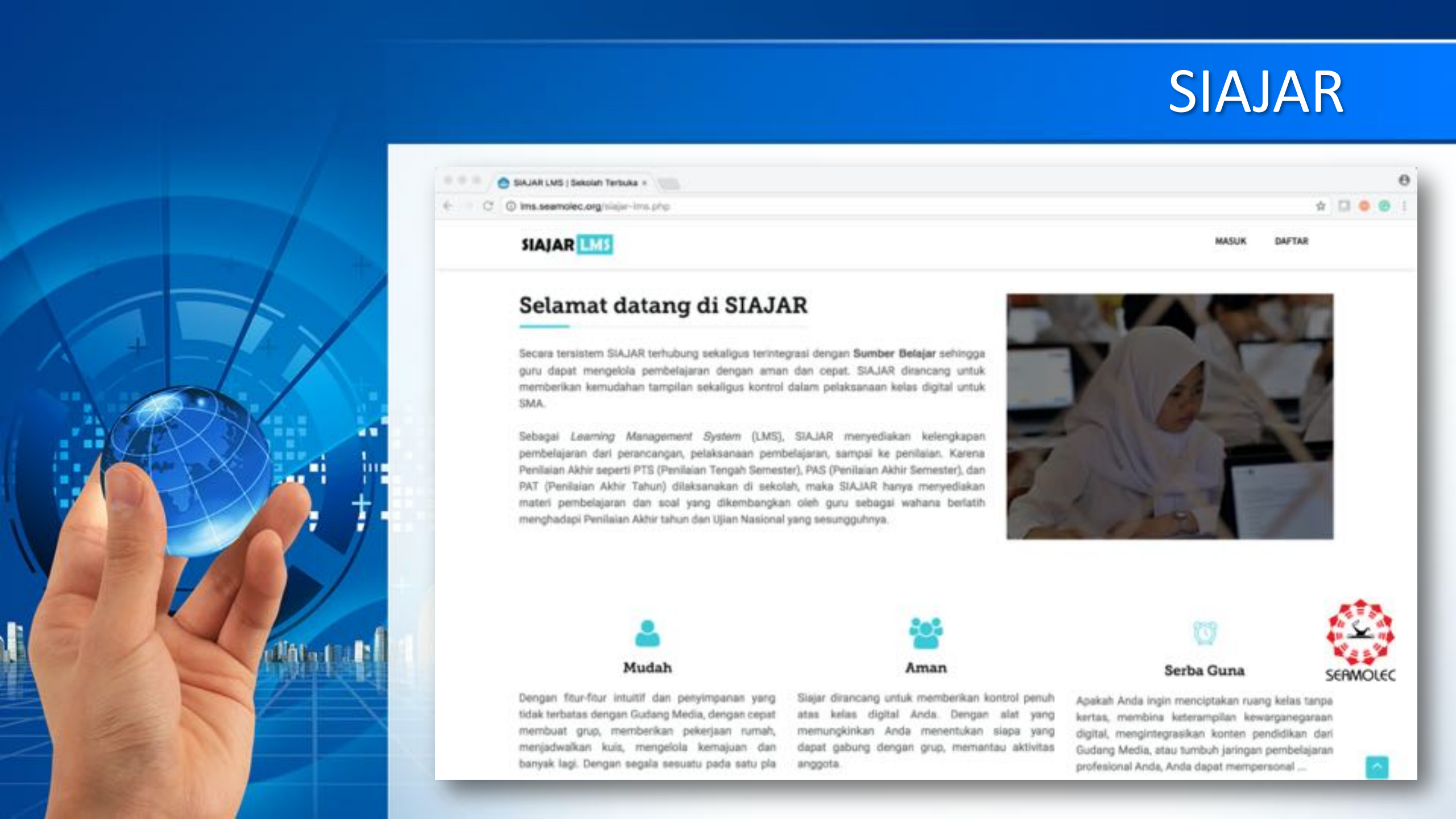
SIAJAR (Sistem Informasi Pembelajaran Jarak Jauh/ Distance Learning Information System)

Access: http://jass.disdik.jabarprov.go.id

Available features:

1. To create and manage courses
2. To evaluate students' learning
3. To serve as communication forum
4. To track student attendance and performance

SIAJAR


SIAJAR LMS | Sekolah Terbuka
lms.seamolec.org/siajar-lms.php
SIAJAR LMS
MASUK
DAFTAR
Selamat datang di SIAJAR
Secara tersistem SIAJAR terhubung sekaligus terintegrasi dengan Sumber Belajar sehingga guru dapat mengelola pembelajaran dengan aman dan cepat. SIAJAR dirancang untuk memberikan kemudahan tampilan sekaligus kontrol dalam pelaksanaan kelas digital untuk SMA.
Sebagai Learning Management System (LMS), SIAJAR menyediakan kelengkapan pembelajaran dari perancangan, pelaksanaan pembelajaran, sampai ke penilaian. Karena Penilaian Akhir seperti PTS (Penilaian Tengah Semester), PAS (Penilaian Akhir Semester), dan PAT (Penilaian Akhir Tahun) dilaksanakan di sekolah, maka SIAJAR hanya menyediakan materi pembelajaran dan soal yang dikembangkan oleh guru sebagai wahana berlatih menghadapi Penilaian Akhir tahun dan Ujian Nasional yang sesungguhnya.
Mudah
Dengan fitur-fitur intuitif dan penyimpanan yang tidak terbatas dengan Gudang Media, dengan cepat membuat grup, memberikan pekerjaan rumah, menjadwalkan kuis, mengelola kemajuan dan banyak lagi. Dengan segala sesuatu pada satu pla
Aman
Siajar dirancang untuk memberikan kontrol penuh atas kelas digital Anda. Dengan alat yang memungkinkan Anda menentukan siapa yang dapat gabung dengan grup, memantau aktivitas anggota
Serba Guna
Apakah Anda ingin menciptakan ruang kelas tanpa kertas, membina keterampilan kewarganegaraan digital, mengintegrasikan konten pendidikan dari Gudang Media, atau tumbuh jaringan pembelajaran profesional Anda, Anda dapat mempersonal ...
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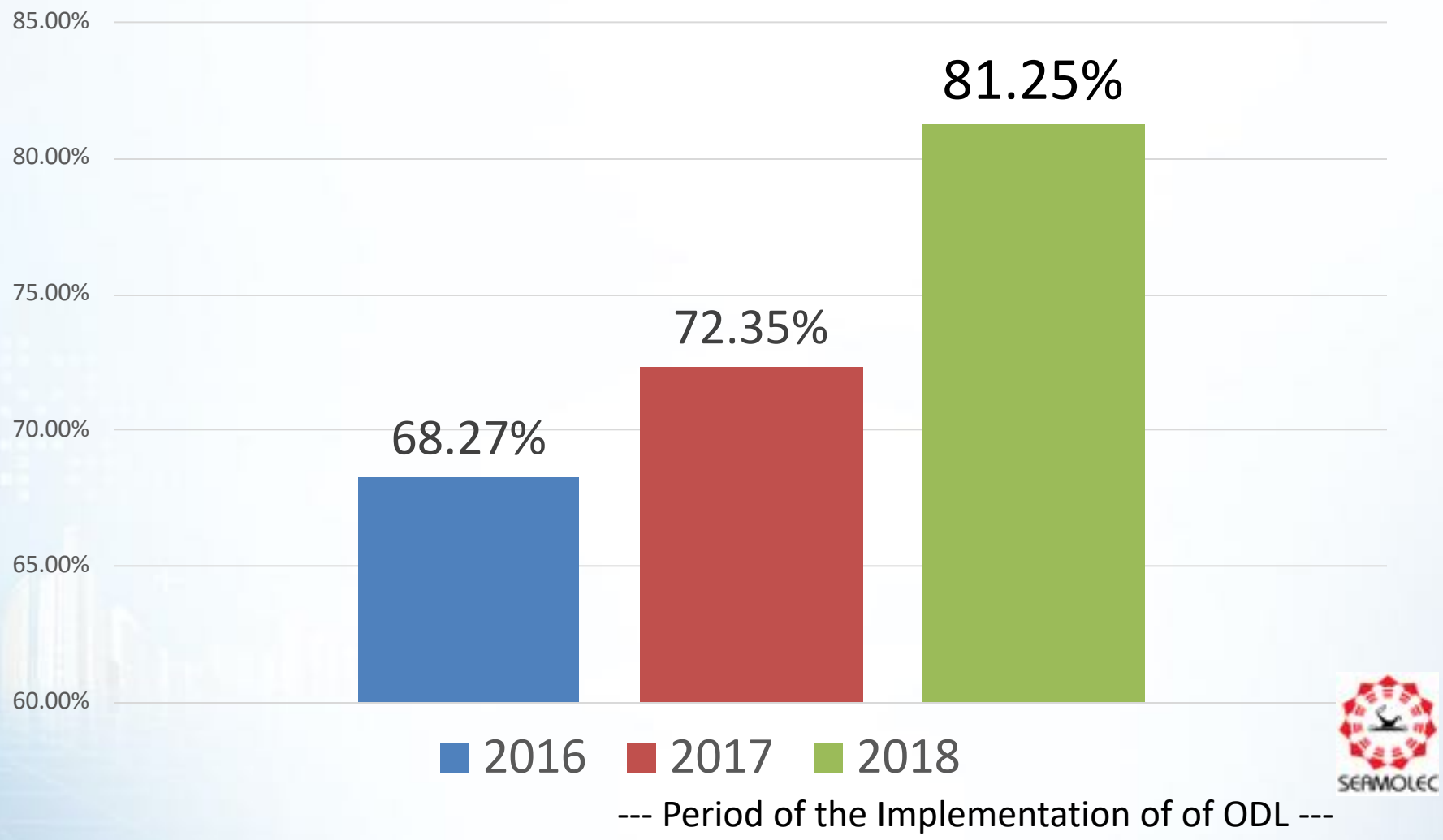
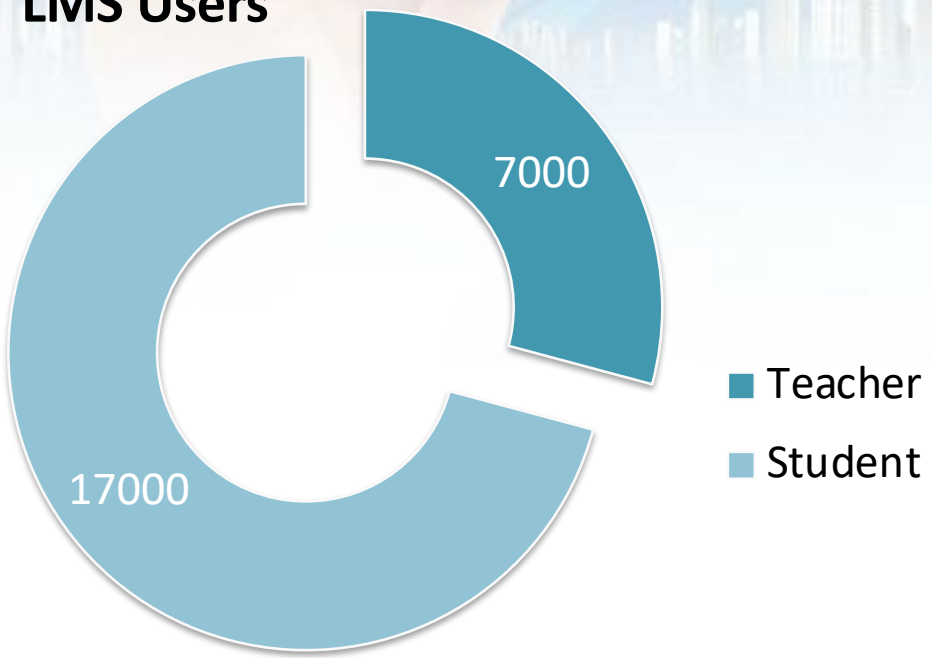
From population aged between 16 – 18 years old:
2016 = 2.516.800
2017 = 2.500.300
2018 = 2.482.200

From this numbers there' are dropped out students or not continuing for education, in amount of:
2016 = 787.664
2017 = 691.218
2018 = 468.874

OUTCOME OF GROSS ENROLLMENT RATE





1.700

learning object material

Until now the LMS has been facilitating:

- more than 7,000 accounts for teachers, tutors, and class administrators
- more than 17,000 students' accounts
- more than 1700 learning object material as student learning modules

Room for improvements

- Need more socialization about this programme to society by involving more stakeholders or local public figure
- Needs sociological and anthropological perspectives to ensure decent and appropriate implementation of ODL
- Need more support from business/industrial sectors to open opportunities for students to do trainings/internships
- Local MOE Offices need to maximize recruitment process from the targeted possible students
- Opening vocational study programmes should match with local content/potential and the need of local, national or regional industry
- Need more infrastructure facilities to support the learning process, i.e: internet connection
- Need more trainings for teachers to update them with ICT literacy

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Opportunities

Programme replication to be implemented in:

1. other provinces of Indonesia, and
2. Southeast Asian countries and beyond

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Reaching The Unreachable Making The World into One World of Learning

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ARIGATOU GOZAIMASU

TERIMA KASIH

THANK YOU