Asia-Pacific Economic Cooperation

Networking of Spatial Approach
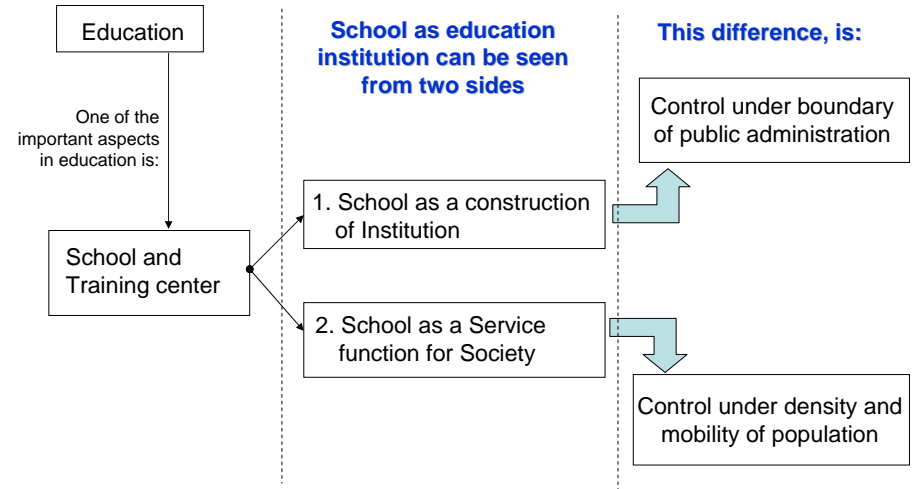
Purpose: Information
Submitted by: Indonesia

**APEC Symposium on Open Source
and Open Course for E-Learning
Ha Noi, Viet Nam
4 - 6 December 2006**

NETWORKING OF SPATIAL APPROACH

(for education planning)

Background:

Education

One of the important aspects in education is:

School and Training center

School as education institution can be seen from two sides

1. School as a construction of Institution

2. School as a Service function for Society

This difference, is:

Control under boundary of public administration

Control under density and mobility of population

Difference:

Control under boundary of public administration

The Scope of Policy: **school management**

School management is based on the number of students

- How many schools must have?
- How many teachers?
- How many books?
- How many classes?,
- etc

District A	**District B**
District C	**District D**

Every district has a plan to manage education for constructed of institution

Control under density and mobility of population

The Scope of Policy: **society management**

Society management is based on the number of residents in the region. While the nature of the population is mobility and reside in the neighborhood of activity center.
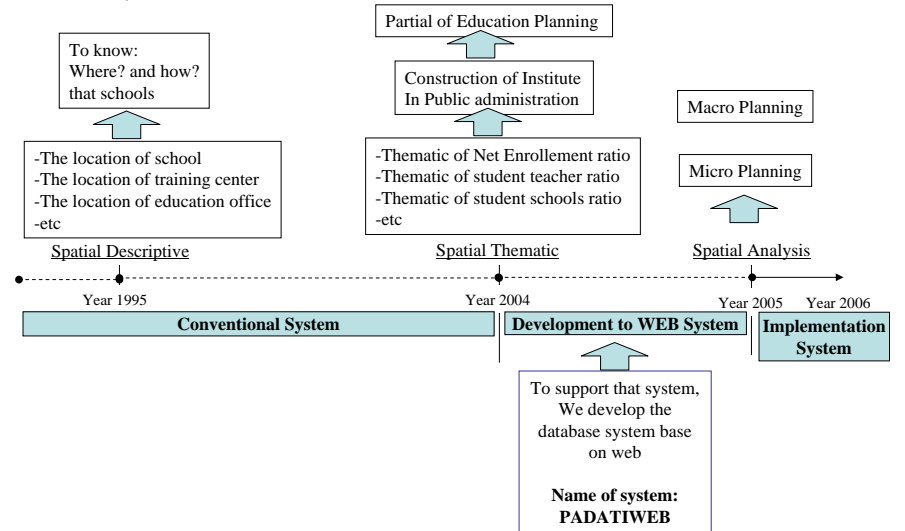
In terms of the efficiency of a region, The next question are where the school should be located and how many school are needed.

District A **District B**

District C **District D**

- Region with over-populated
- Center of activity

To cover the education in region I: A, B, and C district, the district must have an integrated plan.
This also apply for C and D district must have an integrated plan to cover the education in region II.
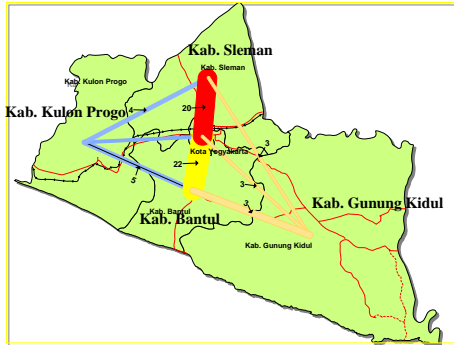

The Development of the Educational Mapping in The Ministry of National Education

Partial of Education Planning

Construction of Institute In Public administration

To know:
Where? and how?
that schools

- The location of school
- The location of training center
- The location of education office
- etc

- Thematic of Net Enrollement ratio
- Thematic of student teacher ratio
- Thematic of student schools ratio
- etc

Macro Planning

Micro Planning

Spatial Descriptive   Spatial Thematic   Spatial Analysis

Year 1995   Year 2004   Year 2005   Year 2006

Conventional System   **Development to WEB System**   **Implementation System**

To support that system, We develop the database system base on web

Name of system: PADATIWEB

PADATIWEB: the education data system based on WEB able to operate in internet or intranet

Slide 1

Example Macro Planning:

Map of the mobilization of school age population in Yogyakarta Province

Kab. Sleman
Kab. Sleman
Kab. Kulon Progo
Kab. Kulon Progo
20→
Kota Yogyakarta
22→
3
3
3
3
5
Kab. Bantul
Kab. Bantul
Kab. Gunung Kidul
Kab. Gunung Kidul

N

The rate of school age population in Yogyakarta city is high, this condition is influenced by the number school age population from Sleman district and Bantul district (index 20 and 22).
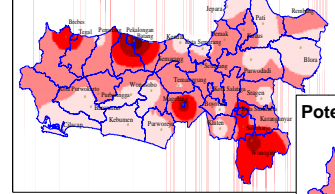
Gravitation Models

Function of:
• Number of population
• Distance between two places

Slide 2

Map of the mobilization Teachers, Schools, and school age population in Central Java Province

Regional Potency
Function of:
• Number of population
• Distance between two place

Potency of Teacher at Primary Educ.

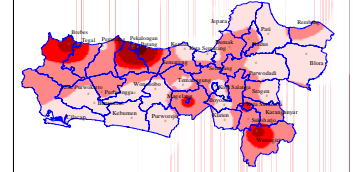Teachers distribution doesn't flatten.
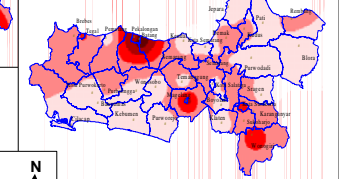
Potency of Schools at Primary Educ. Schools distribution doesn't flatten.

N

Potency of 7-12 year population

However, by nature it had to followed requirement of resident distribution.

Slide 3

To implement the System, we used E-Learning Method.

Reasons using e-learning are:
1. Geographical condition » Geography of Indonesia: 33 Province, 441 District
2. Globalization
3. Acceleration the frequency of coordination / face to face activities
   a. Coordination for the education data and the map
   b. Coordination for sharing of Spatial Method

The faced problems:
1. High variance for Infrastructure of IT, between districts
2. High variance for human resource, between districts
3. Commitment of local government (district level) for coordination

Networking with Spatial Approach

(for educational planning)

Center of Education Statistic
Ministry of National Education of Indonesia
Hanoi-Vietnam, December 4-6 2006

Introduction:

The related Issue to education of national and globalization push us to identify and look for the symmetrical points so that can bring into contact the two matter seems differ (without intersection), that the educational of Indonesia have an implication to national and global.
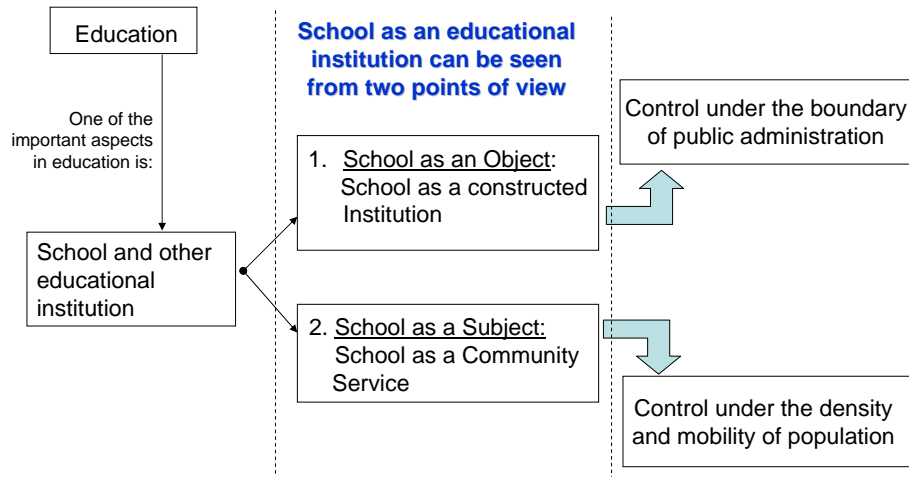
The impact of globalization force many states to revise their understanding and knowledge to nation concept, not even because the boundaries factor of territorial geographical, but also defense of culture and another aspect which sustain their existence as nation state don't have the absolute immunity from globalization current.

For that, we needed the coordination and the same understanding to concerning development and management of education between district, province and national.

One of the key of coordination is commitment and intensity from coordination itself.
And E-learning is one of the methods to support coordination.

Background:

Education

One of the important aspects in education is:

School and other educational institution

School as an educational institution can be seen from two points of view

1. School as an Object:
School as a constructed Institution

2. School as a Subject:
School as a Community Service

Control under the boundary of public administration

Control under the density and mobility of population

Comparison:

Control under the boundary of public administration	Control under the density and mobility of population
The Scope of Policy: **school management**	The Scope of Policy: **society management**

School management refers to the number of students

-How many schools
-How many teachers
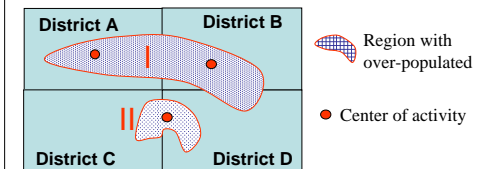-How many books
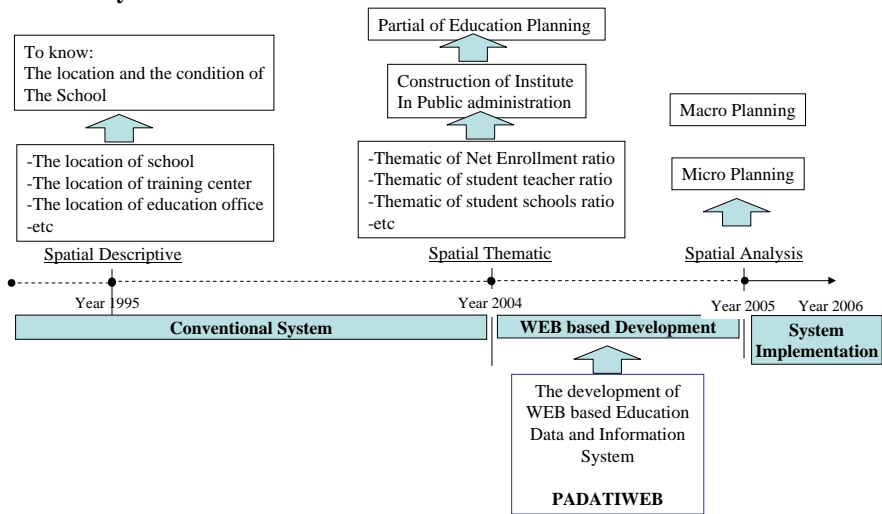-How many classes
-etc

are needed?
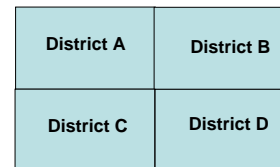
Society management refers to the number of residents in the region. While the nature of the population is mobility and reside within the activity center.

In terms of the efficiency of a region,
The next questions are where the school should be located and how many school are needed?.

District A	District B
District C	District D

Every district has a plan to manage education for constructed institution

District A	District B
District C	District D

Region with over-populated

Center of activity

To cover the education in region I: A, B, and C districts, the district must have an integrated plan.
This also apply for C and D districts each must have an integrated plan to cover the education in region II.
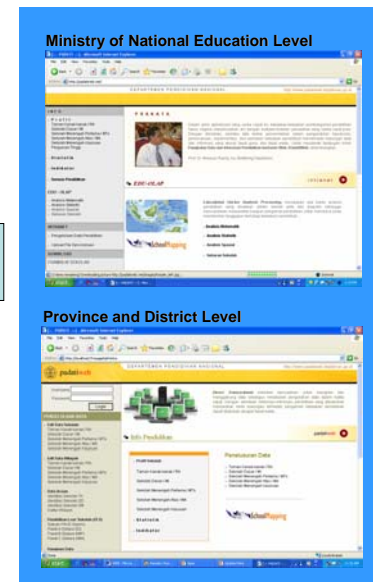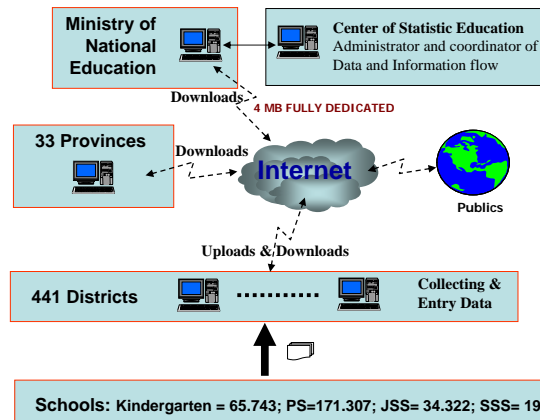
The Development of the Educational Mapping in The Ministry of National Education

To know:
The location and the condition of The School

-The location of school
-The location of training center
-The location of education office
-etc

Partial of Education Planning

Construction of Institute In Public administration

-Thematic of Net Enrollment ratio
-Thematic of student teacher ratio
-Thematic of student schools ratio
-etc

Macro Planning

Micro Planning

Spatial Descriptive | Spatial Thematic | Spatial Analysis

Year 1995 | Year 2004 | Year 2005 | Year 2006

| Conventional System | WEB based Development | System Implementation |

The development of WEB based Education Data and Information System

PADATIWEB

PADATIWEB: the education data system based on WEB able to operate in internet or intranet

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Website of PADATIWEB

Address:
http://padatiweb.depdiknas.go.id/
or
http://padatiweb.net/

Ministry of National Education

Center of Statistic Education
Administrator and coordinator of Data and Information flow

Downloads

4 MB FULLY DEDICATED

33 Provinces

Downloads

Internet

Publics

Uploads & Downloads

441 Districts .... Collecting & Entry Data

Schools: Kindergarten = 65.743; PS=171.307; JSS= 34.322; SSS= 19.250; HE= 3.045

Ministry of National Education Level

Province and District Level

Example of Macro Planning:

The mobilization Mapping of school age population in Yogyakarta Province
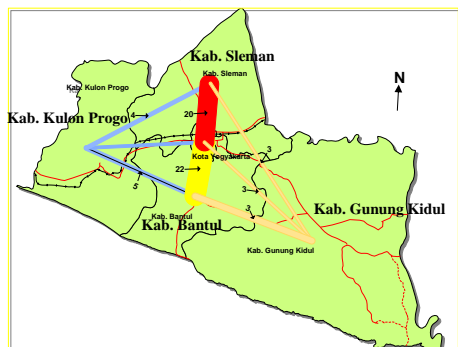
Gravitation Models

Function of:
• Number of population
• Distance between two places

| No	Districs	NER
1	Kab. Bantul	90.94
2	Kab. Sleman	91.42
3	Kab. Gunung Kidul	89.40
4	Kab. Kulon Progo	93.31
5	Kota Yogyakarta	144.70

The rate of school age population in Yogyakarta city is high, this condition is influenced by the mobilization of a number of school age population from Sleman district and Bantul district (index 20 and 22).

The mobilization Mapping of Teachers, Schools, and school age population in Central Java Province
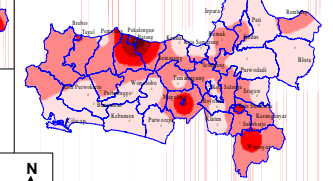
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Function of:
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Potency of Teacher at Primary Educ.
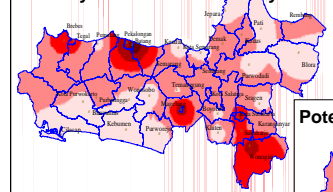
Teachers are not equally distributed
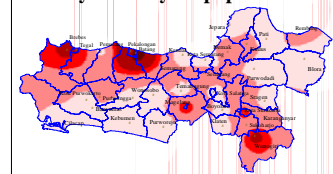
Potency of Schools at Primary Educ.

Schools are not equally distributed

Potency of 7-12 year population

By Nature, The inequality of the distributions is caused by the inequality of the population distribution.

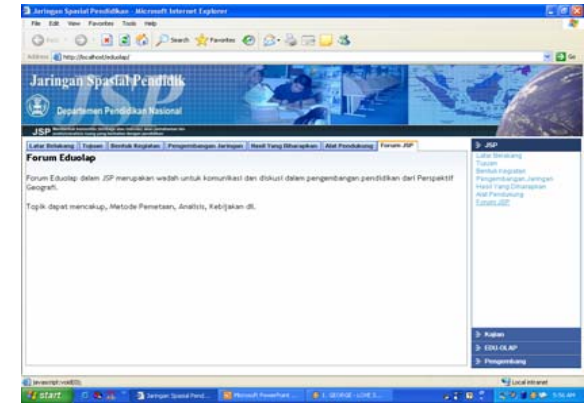**Website of Networking of Spatial Approach (NSA)**

Address:
http://eduolap.padatiweb.depdiknas.go.id/
or
http://eduolap.padatiweb.net/

Includes:
1. Introduction to NSA

Website of Networking of Spatial Approach (NSA)

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Includes:
2. Forum for discussion

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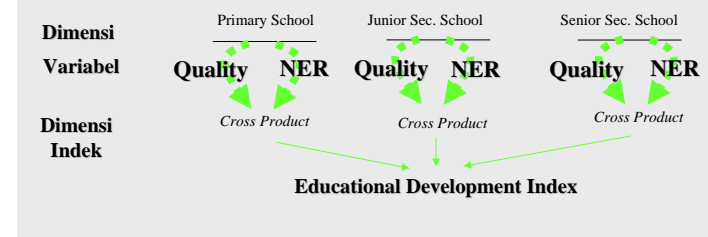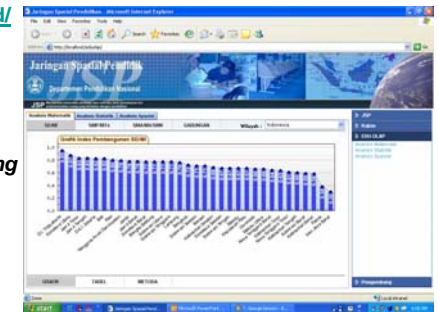or
http://eduolap.padatiweb.net/

Includes:
3. Study of Spatial Analysis
   a. Regional Analysis
   b. National Analysis
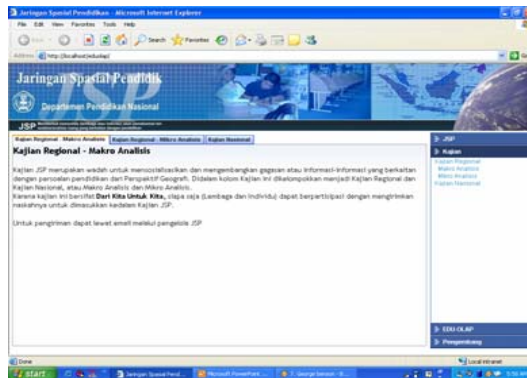
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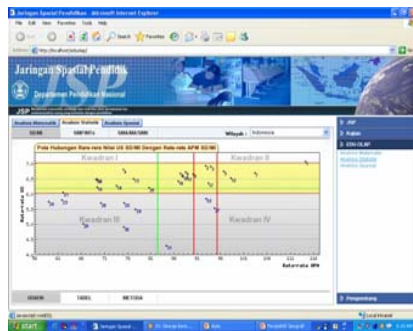4. EDU-OLAP
   Educational Online Analysis Processing
      a. Mathematical Analysis
      b. Statistical Analysis
      c. Spatial Analysis

Dimensi	Primary School	Junior Sec. School	Senior Sec. School
Variabel	Quality NER	Quality NER	Quality NER
Dimensi Indek	Cross Product	Cross Product	Cross Product

Educational Development Index

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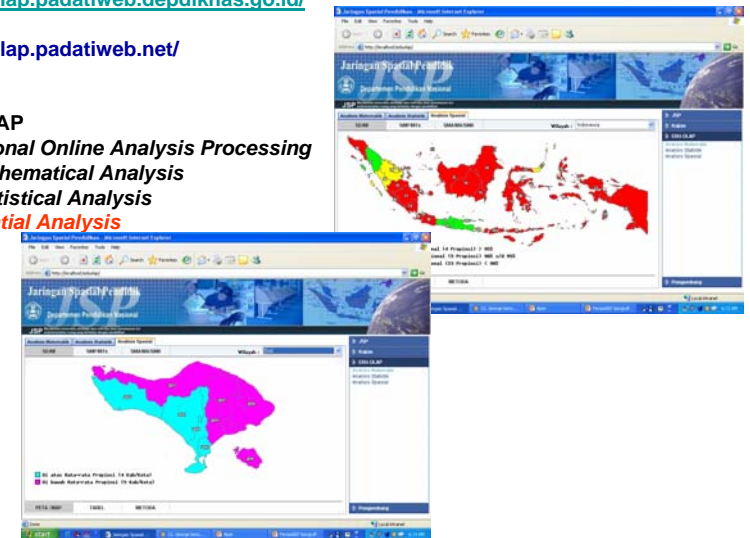   **4. EDU-OLAP**
      Educational Online Analysis Processing
         a. Mathematical Analysis
         b. Statistical Analysis
         c. Spatial Analysis

To implement the System, we used E-Learning Method.

Reasons using e-learning are:

1. Geographical condition » Indonesia comprises of : 33 Province, 441 Districts would in urban and rural area.
2. Globalization
3. Acceleration of the frequency of coordination / face to face activities
   a. Coordination in educational data and mapping
   b. Coordination in sharing the Spatial Method

Challenges:
1. High variance in the provision Infrastructure of IT, among districts
2. High variance for human resource, among districts
3. Commitment of local government (district level) in coordination

Thank You for Your Attention

Center of Education Statistic
Ministry of National Education of Indonesia
Hanoi-Vietnam, December 4-6 2006