Collection and Analysis of Educational Statistics Data for the Era of Big Data:
From the Perspective of SDG 4 M&E System

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Contents

I. Education in 2030

II. The effective M&E system

III. Educational Statistics, M&E system, and Big Data
Incheon Declaration and the SDG 4

- Providing Comprehensive Quality Education for All
- Terms regarding participation by Multi-Stakeholder
- The Promotion of Lifelong Learning
- Sustainable Development
Education in 2030

- Rapid Social Change and the SDG 4: 2000~2015 and 2015~2030
  Not the same 15 years
  - Fast pace
  - Broad scale
  - Fundamental influence
Effective M&E System

- Data Revolution
  : Plan to bridge the gap in data

  - Joint Efforts efforts to develop methodologies
  - Development effort for new data source
  - Development expertise
Effective M&E System

- M&E System in Korea: Towards synergy level
  - Major M & E system construction and operation
    : National Education Information System (NEIS), Educational Statistics Survey, Nationwide Academic Achievement Assessment, School Evaluation, Teacher Assessment, Educational Information Disclosure System, etc.
  - Coordination and quality management of educational statistics
  - Linkage of raw data, educational statistics, information disclosure and policy information

I. Overview of the Study
Effective M&E System

- Success Factors and Improvement Projects

  - Major M&E construction and operation of the individual systems: Standardization
  - Laws and system for linkage and adjustment
  - Proper investment budget and performance management
Educational Statistics, M&E system, and Big Data

- Function and Role of Educational Statistics in the M&E System
  - Collection of reliable data
  - Development and analysis of indicators of high policy relevance
  - Ensuring adequate budget and professional staff
Changes in the Survey Environment and Improvement tasks for Education Statistics

- Increase in demand (materials) for Education Statistics: Research recurrence or increase in survey items
- Increase in survey burden of respondents or agencies
- Personal privacy protection expansion: Denying to participate in surveys and creating negative environment
Possibility of Using Big data for Education Statistics Production

- Expansion of public information disclosure and sharing
- Creation and accumulation of data in unimaginable scale and velocity
- Data and information with different characteristics than before
- Possibility of overcoming the measurement issues
- Possibility of developing new educational indicators
  : Possibility of providing new policy information
Educational Statistics, M&E system, and Big Data

- Potentials and Risks of Big Data

  - Feature of big data: Volume, Variety, Complexity, and Velocity
  
  - Possibility of creating new values
    : New natural resources, Engine of the social development
  
  - Tremendous budget to maintain the status quo due to the increasing volume of data
    : Natural disasters
Preparation for the Use of Big Data

- Understanding of the Changing Environment and Cooperative Attitude

- Data scientist
  - A clear sense of what to analyze
  - Integrative thinking and interpretation skills

- Efforts to address issues related to privacy protection
Innovation of Educational Statistics for Effective M&E

- Efforts for making policy considering the future prospect
  - Measurement of policy objectives and efforts for collecting data

- Efforts for producing of educational statistics information utilizing big data
  - Utilization of administrative DB

- Efforts for excavating new educational statistics data
  - Utilization of unstructured big data
Thank you very much!