The Use of Technology for Large-Scale Education Planning and Decision-Making

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Objectives or purposes
Technological innovation providing relevant education indicators and data for real-time applied use by local education planners is a measure of the trajectory that “Education for All” can pivot towards. A technological platform that maps and visually displays school-related data in order to support data-driven education planning, decision-making and budgeting at the local level was created as part of a collaboration between the Office of the Senior Special Assistant to the President of Nigeria on the MDGs (OSSAP-MDGs) and The Earth Institute, Columbia University. The creation of the Nigeria MDG Information System (NMIS) illustrates the integration of educational and technological innovations and demonstrates ways in which challenges related to Education Management Information Systems (EMIS) can be overcome. This objective of this paper is to showcase the development process of NMIS in relation to the education sector and how such a technological platform can support local level education planning, school governance, and policy-making, while also highlighting the uses and challenges of EMIS.

Main perspective or theoretical/conceptual framework
The main perspective in this paper is that a technological platform, such as NMIS, can serve as a practical repository and tool for local education planners, as was carried out in two rounds of evidence-based proposals submitted through the OSSAP-MDGs Conditional Grants Scheme (CGS) in Nigeria. The synthesis of NMIS data, contextual knowledge, data from external sources, and a situation analysis allows for a nuanced understanding of the education needs of each local government area (LGA). Through use of NMIS, local planners and school administrators will be able to track the effect of their investments with respect to addressing education gaps and have increased involvement in managing the educational needs.

Analytical methods, research design, modes of inquiry
NMIS is a repository of quantitative data indicators. To develop this repository, the Earth Institute team conducted multiple interviews with in-country stakeholders, which included OSSAP-MDGs and other organizations such as the Education Sector Support Programme in Nigeria. Focus groups were also conducted with the Technical Assistants who comprise part of the OSSAP-MDGs team deployed in the LGAs. Data itself was collected by OSSAP-MDGs using surveys programmed on an Android phone. Therefore, following a sequential study starting with qualitative data informed the design of NMIS. This was followed by quantitative data collection using survey methods. Data was then processed in the form of indicators then displayed on NMIS.

Data sources or evidence
Evidence for this paper was sourced from the technical advisors’ experience in working with the OSSAP-MDGs CGS program which entailed review of the grant proposals which were developed by local level planners, from training and providing feedback to Technical Assistants and from the process of developing NMIS. Discussion in the paper on EMIS stems from sources in the reference list.
Results and/or conclusions
The analysis shows that NMIS meets the many planning, budgeting, policy, accountability, monitoring and evaluation needs EMIS responds to and provides strategies to address some deficiencies in EMIS. The fact that data is presented spatially and after analysis as indicators means that NMIS can bypass the lack of data analysis that some EMIS face. Triangulated data NMIS presents by combining GPS locations, pictures, and population level and facility-level data is a rarity in EMIS. While NMIS aids in planning, funding decisions and data transparency, its effective use is iterative.

Significance of study to field of comparative or international education
An education program framework has steps which often include planning, designing programs, implementation, informing policy, monitoring, and advocacy. Access to and technical use of numerical data, indicators, and visual data in tandem with an education program framework can provide a multi-layered approach for involved actors and agencies at the local, state, federal, and international levels. In Nigeria, a developing and emerging country, such an approach has been used through NMIS and CGS with the objective of pioneering policy-making in order to improve educational quality for primary and junior secondary students. This paper, *The Use of Technology for Large-Scale Education Planning and Decision-Making*, contributes to the need for continuing inventive ideas and approaches to addressing basic education in tandem with policy-making, with the ultimate goal of achieving education for all.