Using Lot Quality Assurance Sampling to Monitor the Implementation of Early Grade Reading Instruction: Lessons learned from a pilot in Ghana

A Ghana pilot study demonstrated that Lot Quality Assurance Sampling (LQAS) is a promising alternative for monitoring the quality of reading instruction in primary schools in developing countries. LQAS seems to provide a rigorous alternative to more costly methods or (the default current situation) no monitoring at all.

Information from routine monitoring ideally should be used to revise project approaches and/or provide additional support where ongoing programs are not as successful as hoped. However, traditional evaluation of programs and projects can be quite costly and, as a result, may happen infrequently. Ministries often rely on in-person school inspections, which do not happen with optimal frequency due to financial and other resource constraints, and which focus primarily on school inputs and not on the quality of instruction. Also, school inspectors may not all use the same principles for assessment or have standardized assessment checklists. Similarly, projects routinely rely on baseline studies at the beginning of an activity and then midterm or end-of-project evaluations. When these evaluations are conducted, results often are not available for months and actions meant to address identified problems are not implemented for even longer amounts of time. In addition, traditional evaluation approaches tend to produce aggregate findings, making it difficult to target precise assistance where it is most needed. National assessment programs, for example, often do not provide precise measures at sub-regional levels such as the district and, thus, district managers do not have the data they need to guide management decisions, to target interventions, or to monitor progress.

By contrast, lot quality assurance sampling is a technique that allows relatively low-cost, routine, and quick monitoring that provides disaggregated, actionable data needed to target needy areas or institutions in a timely manner. The LQAS technique was first developed in the 1920s in the manufacturing industry as a way to monitor the quality of production. A small sample of items was randomly selected from each production lot and examined for any imperfections. If the number of defective items was greater than a pre-set threshold level, then the lot was rejected (Robertson et al., 1997, p. 199). Application of the method has since spread beyond manufacturing into the social sciences, primarily the health sector (Valadez, 1991)and has been gaining popularity as a way to efficiently monitor programs over time. LQAS has more recently been introduced into the education sector[1] as a way of monitoring program performance and identifying areas that need additional support. As this approach is a classification tool it requires much smaller sample sizes.

A 2013 pilot application in Ghana monitoring the quality of reading instruction in the early grades demonstrated the relevance and applicability of LQAS as a monitoring methodology for education programs, particularly in developing countries that lack existing mechanisms to efficiently and routinely assess performance at sub-national levels. This pilot showed that the LQAS approach could be easily adopted to effectively, routinely, and sustainably monitor the quality of instruction at the local level.

LQAS is particularly appealing for the education sector as more and more governments strive to decentralize education responsibilities. District-level managers need a way to monitor the programs or communities in their district and determine which ones are "meeting particular targets and goals" (Robertson et al., 1997, p. 199). This information can then be used to target assistance to those schools or districts that are struggling. LQAS scoring is simple and can be done using paper and pencil methods. This simple scoring allows the assessor to share the findings of the school visit with the teacher and head teacher on the day of the school observation. District level summaries of the data can also be carried out locally using simple paper and pencil summary sheets. Unlike many assessments, where data goes to the central or national level for processing and reporting, with LQAS, actionable data are immediately available locally. This makes LQAS an ideal methodology for routine monitoring of subdistricts, districts, or schools.

References

ROBERTSON, S. E., ANKER, M., ROISIN, A. J., MACKLAI, N. & ENGSTROM, K. 1997. The lot quality technique: a global review of applications in the assessment of health services and diseases surveillance. *World Health Statistical Quarterly,* 50**,** 199-209.

VALADEZ, J. J. 1991. *Assessing Child Survival Programs in Developing Countries: Testing Lot Quality Assurance Sampling,* Cambridge, Harvard University Press.

[1] USAID's Uganda Program for Human and Holistic Development (UPHOLD) project is an example.