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# Assessment of pedagogical practices and processes in low and middle income countries: Findings from secondary school classrooms in Uganda

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## HIGHLIGHTS

- Developed classroom observation tool useful for international contexts.
- Demonstrated rater reliability.
- Discovered unique and meaningful factor structure.
- Demonstrated concurrent validity with student academic performance measures.

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## ABSTRACT

This article outlines the development and validation of a classroom observation instrument for use in low and middle income countries. The Teacher Instructional Practices and Processes System© (TIPPS) was designed to be a rigorous research instrument as well as a practical feedback tool. Based on data from 197 Ugandan secondary schools, we were successful in assessing the quality of instructional practices and classroom processes in this context. The results reveal a 3-factor structure, good rater reliability, and concurrent validity with in biology, English, and mathematics scores. Strengths and limitations as well as future directions of the study are discussed.



**Contents**



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## 1. Introduction

Governments and policy makers around the world are calling for answers on how to produce learning for all (see, e.g., Pritchett, 2013; Spaull & Taylor, 2015; Winthrop & McGivney, 2015). Much of the global discourse has begun to focus on classrooms, where the "action" takes place, as well as on teachers, who are key facilitators of the classroom experience. This focus on classrooms is consistent with various social settings frameworks (Cohen, Raudenbush, & Ball, 2003; Pianta & Hamre, 2009; Tseng & Seidman, 2007), which posit that learning and development rests with students' daily experiences with teachers and peers in the classrooms (Seidman & Tseng, 2011; Wolf, et al., 2017). Similarly, a focus on teacher quality is equally critical given that teachers, more so than schools, have been identified as the greatest source of variance in student academic outcomes (Hanushek, 2002; Nye, Kostanopoulos, & Hedges, 2004). In fact, teacher quality is estimated to account for 23 percent of variation in student tests scores in the US, while in areas like Sub-Saharan Africa this figure rises to 27 percent (Rockoff, 2004).

Yet in spite of this knowledge, it has become clear that the professional development needed to support teachers and how effectively they function within classrooms is often lacking or ineffective. In many parts of the globe, teachers who need the most professional development (e.g., new or underqualified) often receive the least (Organization for Economic Co-operation and Development [OECD], 2008). Moreover, learning opportunities are not focused on where they matter most – in the classroom – but apart from their classrooms and students, often in one-off workshops or trainings outside of their schools (Burns & Lawrie, 2015).

Furthermore, the evidence we are accumulating with regard to the impact of pedagogical interventions remains insufficient (Damon, Glewwe, Wisniewski, & Sun, 2016). Where benefits of pedagogical interventions are evident, pinpointing the source of those gains remain elusive. A meta-analysis by Conn (2017) reports "large pooled effect size estimates" (p. 87), but laments that "there are too few studies reporting information on the pedagogical technique … to be able to analyze this mechanism further" (p. 87). Furthermore, we often find that "… none of the evaluation methodologies isolated specific interventions and their linkages with the observed results" (United States Agency for International Development [USAID], 2013, p.13). In other words, evidence on how classrooms and teachers in developing countries matter is critically lacking while the need for educators, scientists, and policymakers to understand how teacher practices and classroom processes affect student academic and psychosocial learning outcomes is growing (Jagers, Harris, & Skoog, 2015).

In this vein, there is fast-growing interest in classroom observational measures as the means of unlocking the "black box" of classroom quality (Cohen et al., 2003; Pianta & Hamre, 2009; Tseng & Seidman, 2007). Concomitantly, there is a need for classroom observational tools that are not only reliable, valid, and cost effective but that can also provide nuanced feedback to further improve teaching practices. This article focuses on the development and validation of such a quality classroom observational tool – one that will be 1) appropriate for use low-resource contexts and 2) that can also be used to provide teachers with granular feedback for improving practice. These findings are based on data collected from secondary school classrooms in Uganda. First, we describe the emergence of classroom observation tools followed by a description of the principles we employed in the development of a classroom observation tool for use in low-and middle-income countries (LMICs), as classified by the World Bank (n.d.).

### 1.1. Emergence of classroom observational tools

Internationally, we have witnessed the development and use of a variety of classroom observational tools. Though there has been a long history in the measurement of pedagogical practices and processes (Bell et al., 2012; Gettinger, Schienebeck, Seigel, & Vollmer, 2011; Hamre & Pianta, 2010), it was only two decades ago that researchers began to highlight the need for classroom observation instruments that are: a) applicable in diverse settings, b) permit international comparisons, and c) can be tailored to the need of specific country's classroom and policy interests (Schaffer, Nesselrodt, & Stringfield, 1994). A multitude of instruments for use in LMICs have emerged (Chesterfield, 1997; Stallings, 1978; USAID, 2010), most in the form of frequency-based checklists, not quality assessment tools.

A review of classroom research in developing countries supported by the World Bank (Venäläinen, 2008) continues to echo the recommendations of Schaffer et al. (1994) and outlines the need for improved instruments and methodologies to gauge elements of classroom quality. For example, aspects of the classroom environment such as student engagement or how effectively instructional strategies have been utilized are elements of a classroom that cannot be gleaned from the purview of a "snapshot." Furthermore, attention to emotional factors that support child development in developing countries remains indistinct. Inclusiveness or acceptance of individual or group differences is also critical in developing countries. These are factors that are purported to have great significance in promoting child resilience and the ability to overcome