Using a Common Lens to View Rigor and Design Rigorous Tasks:
A Brief Summary of Findings
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The recent emphasis in educational reform has stressed a need for greater academic rigor in schools (Washor & Mojkowski, 2007; Wraga, 2011), the findings from numerous studies have concluded that classroom tasks often lack cognitive demand or rigor (Hess, Carlock, Jones, & Walkup, 2009; Manthey, 2005; Marzano & Toth, 2014; Maye, 2013. See also Joftus & Berman, 1993). However, the definition of rigor has varied depending on who is using it (Williamson & Blackburn, 2012), and to what it is in reference to (Blackburn, 2013; Bower & Powers, 2009), which has likely contributed to a lack of clarity in understanding academic rigor (Hess, 2014).

To explore and address this challenge in a public middle school setting, an insider action research design was employed that included three iterations focused on defining academic rigor, exploring teachers' understanding of it, and training them to use it in the classroom. Methods in iteration-I included an extensive literature review, teacher interviews, and classroom observations to determine teachers' understanding of rigor. Iteration-II was a teacher-oriented instructional intervention that used the **Hess Cognitive Rigor Matrix** (2013) combined with a three-step planning process, and an Implementation Rigor Rubric (designed by the researcher), as the theoretical framework to guide 14 teachers in deliberately designing and implementing rigor in classroom tasks that demanded higher-level student thinking. Data was gleaned from numerous sources that included classroom observations, participant logs, and weekly rigor-planning matrices to determine whether teachers' designing and implementing of rigor increased as a result of the instructional intervention. Five teachers were also later trained to use a concept-based unit-planning tool called the Unit Planning Process to Ensure Rigor (UPPER) to incorporate rigor systematically into a unit of study.

Results from the teacher interviews in iteration-I indicated that the participants' understanding of academic rigor varied, and that they were initially confused and unclear about rigor, and although they were able to define it using various attributes, most stated that were less able to operationalize it. As such, the classroom observations revealed that six of the 10 were categorized as level one or two (out of four) thinking with five of the overall observations being categorized in the lower half of Bloom's Revised Taxonomy on the Hess Matrix (2013).

Following the instructional intervention in iteration-II, all of the participant teachers reported in individual post-iteration interviews and weekly logs that their understanding of rigor and how to operationalize it in their instructional practice had increased, and they were much clearer on how to view rigor and how to design and implement tasks that foster students' higher level thinking capacities. This was verified by the classroom observations using the Hess Matrix (2013) that yielded an increase in task rigor scores.

The teachers involved in the planning intervention in iteration-III were also able to systematically incorporate and develop rigor by designing two concept-based units of study (also using the Hess Matrix) that originated from unpacking content standards for Science Standards and Social Studies. Each of the four unit plans submitted for scoring achieved a minimum score of three out of a possible four on the UPPER rubric.

As such, the Hess Matrix and the other rigor-centric tools provided the teachers and observers with a common, workable lens in which to view rigor, and together, these tools were reported by the majority of teacher participants to be very helpful in supporting their designing of rigorous tasks, and implementing them for greater cognitive demand. The findings also revealed that explicit attention and focus was needed to support teachers to better interpret and use these tools during weekly planning meetings to enhance their instructional practice when designing rigorous classroom tasks.