Teacher Practical Arguments

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A Framework for K-12 Science Education that embodies three intertwined “dimensions of science learning” has been considered pivotal for STEM higher learning and careers. For teacher professional change, Gary Fenstermacher’s philosophical discourse on the theory of practical arguments that encourages teachers to think more deliberatively and robustly about their pedagogical practices seems defensible. The theory of practical arguments is guided by value, situational, empirical, and stipulative premises, which together, represent an intention of actions. The “Other” plays a critical role in the elicitation, appraisal, and reconstruction of practical arguments. Recent classroom studies provide evidence of teachers’ practical arguments. A study is being developed to understand the sorts of practical arguments scientists and engineers advance as they educate the Detroit Area science teachers and translate their experiences from working with teachers into their own teaching practices in university classrooms.

Jazlin Ebenezer is Professor of Science Education, Chair of Curriculum and Instruction Doctoral Studies. She has been conducting science classroom-based studies since 1987. Her most recent study on the relationship between innovative technologies and scientific inquiry research in Detroit area schools, supported by NSF-TEST funds, has resulted in several International conference presentations and publications in the top tier journals in her field. She is currently involved in developing research proposals with multi-disciplinary and multi-institutional partners, including businesses/industries and laboratories to address issues surrounding the most recently released “A Framework for K-12 Science Education” and “Next Generation Science Standards” that have integrated engineering and technology as a distinct discipline in science education. This proposed research is guided by the theory of teacher practical arguments to improve teaching and learning.