Position paper overview -

My position on success in science education looks at the critical need for improved education reform—where efforts focus explicitly on both student diversity and culture. Existing science education reform emphasizes and promotes the concept of “science for all” however with the growing diversity of K-12 students, coupled with differential science performance among demographic groups; the science education community has fallen short of providing equitable science learning opportunities to “all” students.

The science education community has employed numerous approaches and teaching strategies, such as inquiry based instruction to address the continued inequities and gaps in science achievement between mainstream and nonmainstream students; however just as Lee and Luykx argue, I too reason that inquiry based instruction without culturally relevant pedagogy may not be sufficient to support nonmainstream students in learning science. To teach all children well, schools, teachers, principals, and administrators must know the particular values, traditions, communication patterns, and learning styles of all students. It is important to recognize and understand that culturally responsive teaching is difficult and demanding work and if it was easy everyone would do it; for a growing body of literature documents the success of culturally responsive teaching and how it contributes to the academic achievement of students from culturally diverse backgrounds.

To help us reach destination science success we must employ culturally responsive approaches. Culturally responsive teaching should not be seen as a quick fix as it is more than just heroes and holidays. Instead culturally responsive teaching is an active process of thinking, a state of mind, a way of seeing and learning that is shaped and influenced by beliefs of value, cultural relationships, and cultural competency.

A common doctrine in education is that it takes a village to raise a child, this belief also rings true here as it takes a village, the entire school community (teachers, principals, administrators, etc.) working cooperatively and collaboratively to create conditions that foster culturally responsive teaching.

I once read “good science education is true to the child, true to life, and true to science.” In being true to the child, success in science education must first recognize the child – acknowledging their cultural existence and experiences as well as his/her abilities. In being true to life, success in science education must understand science is knowledge and knowledge is power; and with power comes wisdom and liberation. Science has the potential to be helpful or harmful, emancipative or oppressive – successful science education ensures an emancipative role in the lives of students providing both equity and excellence to all. And finally, in being true to science, success in science education provides cooperative, collaborative, and community-oriented learning as it affords all students access to and opportunities in science education. In closing, it does not take a genius to figure out that solid investments and the interest you earn will result in favorable returns; therefore if we make solid investments in the success of science education today by putting stock into the importance and value of teaching a cultural practice and concentrate our efforts on student diversity in science classrooms, the interest we stand to earn will result in enormous returns in our children’s future.