Chapter 8

Black Girls STEAMing Through Dance:
Inspiring STEAM Literacies, STEAM Identities, and Positive Self-Concept

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ABSTRACT

Black Girls STEAMing through Dance (BGSD) leverages a transdisciplinary partnership among four Black women professors in urban education, dance, industrial/ product design, and computing to engage Black girls in a STEAM-infused program to inspire STEAM literacies, STEAM identities, and positive self-concept. BGSD is in its third year of existence and operates across several contexts, including an

after-school program for 7- to 12-year-old Black girls, a co-curricular mini course program for 5th and 6th grade girls, and a professional development course for teachers. This chapter highlights how the program was developed and how the use of dance to integrate STEAM is a promising platform to encourage engaged STEAM participation amongst underrepresented Black girls.

INTRODUCTION

Black women and girls are severely underrepresented in Science, Technology, Engineering and Mathematics (STEM) fields across both educational and career continuums (Marra, Rogers, Shen, & Bogue 2009; Pinkard, Erete, Martin, & McKinney de Royston, 2017; Towns, 2010). Their access to STEM pipeline opportunities which could lead them on a path towards future STEM majors and career trajectories lags significantly behind their White female and male counterparts (Farinde & Lewis, 2012). Meanwhile, the United States has an urgent need for a highly skilled and innovative STEM workforce and STEM leaders in order to stay competitive in a global marketplace (Diekman, Steinberg, Brown, Belanger, & Clark, 2017). Nearly 25% of all STEM fields are comprised of women (Simon, Wagner, & Killion, 2017), and the numbers are even more alarming for Black women. According to the National Science Foundation's National Center for Science and Engineering Statistics (2019), Black women graduates represent 4.5% of the biological sciences, 2.2% of computer science, 2.5% of physical sciences, 2.1% of mathematics and statistics, and 1.0% of engineering conferred degrees. Although there have been gains in access to STEM education earlier in students' schooling experiences (Lindeman, Jabot, & Berkley, 2014; Murray, 2019), there remains grave inequities across socio-economic, racial/ethnic and gender lines, particularly as it relates to Black girls (Ireland, et al., 2018; King, 2017; King & Pringle, 2018; Marra, et al., 2009; Young, Tolliver, Young, & Ford, 2017). Some scholars have even deemed this lack of access to STEM opportunities at the early onset and throughout Black girls' education, a civil rights issue (Espinosa, 2011; Mensah, & Jackson, 2018; Tate, 2001), and there has been little progress toward comprehensively and systematically eradicating these gaps and challenges (Ireland, et al.,2018).

STEM education access in formal and informal learning spaces is limited for Black girls as a whole and often representative of compounding socio-political issues of racism, sexism, and generational poverty which keep Black girls pushed out of transformative learning experiences (Morris, 2015). Even if STEM education is available, these opportunities are often disconnected from the historical, cultural, gendered, and daily lives of Black girls, and the cultivation of a STEM identity

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