A NARRATIVE INQUIRY OF *GEMS* WOMEN'S EXPERIENCE WITH STEM

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Historically, women are underrepresented in science, technology, engineering, and mathematics (STEM) fields (Hill, Corbett, & Rose, 2010). To inspire girls to participate in STEM disciplines, many researchers have found that a variety of interventions, such as female role models, hands-on activities, and single-sex learning environments, can increase girls' interest and shape their identities in STEM areas (e.g., Chen et al., 2011; Holmes et al., 2012; Tyler-Wood et al., 2012). National efforts to engage girls in STEM disciplines have had mixed reviews. Between 1993 and 2015, the number of women in computer and mathematical sciences occupations increased by 173%. However, these fields have attracted relatively more men, whose participation increased by 239%. Thus, the overall proportion of women has declined from 31% to 26% (National Science Board [NSB], 2018). The NSB (2018) also reported that five years after receiving their highest degrees across all science and engineering areas, only 18% of females remained in these fields compared with 33% of males.

Corbett and Hill (2015) pointed out that although many studies have concentrated on factors contributing to the entry of women into STEM fields, far fewer have examined the question of why women leave these fields, often after years of preparation, and what factors could support them to remain in the fields. Through exploring the lived experiences of the women who participated in the first *Girls Excelling Math and Science* (*GEMS*) Club–an ongoing afterschool STEM program begun 26 years ago–this study will investigate the group of women's experiences with STEM. The study is guided by the research question: How have the original *GEMS* Club members' experiences in *GEMS* influenced their education, career selection, and lives, both personally and professionally? Specifically, a) How have their experiences in *GEMS* impacted their identity, including mathematics, STEM, and gender identities? And b) How have their experiences in *GEMS* influenced their sustained interest, engagement, and participation with STEM?

Given the purposes of this study, narrative inquiry is the methodology and form of analysis in the study (Clandinin & Connelly, 2000). Data is collected through a questionnaire and interviews. The questionnaire collects demographic information and experiences in the *GEMS* club from all women who have participated in the first *GEMS* Club. Respondents who have detailed memories of their *GEMS* experiences are interviewed in a sequence of three semi-structured interviews with each participant, as suggested by Seidman (2013).

Data analysis consists of both analysis of the narrative and narrative analysis (Polkinghorne, 1995) identify common themes that emerge across stories from different participants. The narrative analysis focuses on the social environment that shaped the stories, particularly from a feminist standpoint (Brooks, 2007; Harding, 1991). Using thick, rich descriptions within the three-dimensional inquiry space (Clandinin & Connelly, 2000), the study represents each participant's life story by laying out the events, configuring them into episodes, and constructing contextual explanations by drawing from common themes across each participant's story.

The findings are used to create more effective informal STEM learning environments for girls, thereby empowering women in STEM.

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