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Gender in physics education: Looking back and looking forward

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A decades-long body of physics education research (PER) has sought gender differences in students participation, performance, or attitudes toward physics. Though valuable, this work tends to rely on quantitative comparisons between binary and opposed groups. This framework is well suited for drawing attention to inequities in access or classroom support. However, such a "first order" approximation omits many details of students' experiences and identities, and presupposes unbiased instruments to measure learning–a claim that is often untested. To address the pervasive challenges of sexism in our classrooms, whether entering from wider society or in physics-specific manifestations, we must broaden our understanding of gender. I will discuss some past trends and under-studied areas of gender-focused PER, and supplement with work from science education, gender studies, or more recent PER that breaks the mold of earlier studies. These alternate approaches showcase the power of qualitative methods, question the binary deficit-based model of gender, and explore complexities of identity such as the intersection of race and gender. I will conclude by suggesting new physics investigations that might grow from an expanded gender framework.