Chapter 1
The Difficult Relationship Between Science Education and CSP:
Are We Heading Towards Separation?

Curtis O'Dwyer
https://orcid.org/0009-0003-1818-4215
University of Wisconsin-Madison, USA

Lindsay B. Wells
https://orcid.org/0009-0003-6891-9996
University of Wisconsin-Madison, USA

Leema G. Berland
https://orcid.org/0000-0002-1702-6835
University of Wisconsin-Madison, USA

ABSTRACT

This chapter uses relationships as a metaphor to explore the alignments and tensions between STEM education (with a focus on the authors' area of expertise: science education; SE) and Culturally Sustaining Pedagogies (CSP). The chapter offers an imagined therapy session in which SE and CSP explain to their "therapist" their past and present interactions. The therapist then suggests that the way towards sustainable co-existence of SE and CSP is through a pluralistic approach to sensemaking; an approach that recognizes that different approaches to understanding, adapting to, and adapting, our world (i.e., different approaches to "scientific sensemaking"), can serve different, equally valuable and necessary, purposes. The chapter concludes

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by exploring how this pluralistic approach might look in the classroom and then stepping out of the metaphor to offer a "reality check" regarding the feasibility of the long-term co-existence of SE and CSP.

1. INTRODUCTION

Today, "When Somebody Loves You Back" by Teddy Pendergrass, could be considered a timeless RnB classic. It expresses the desire for, and satisfaction of, being in a relationship where partners give "not seventy-thirty, not sixty-forty, ... (but) fifty-fifty love" (Pendergrass, 1978). Movies, news, television, and social media are rife with stories that depict this kind of give-and-take nature in a relationship. They highlight the beginnings and endings, the make-ups and break-ups, looking past, or ignoring, complexities in the "messy middle." In this chapter, we argue that the relationship between Science Education (SE) and Critical Pedagogy (CP), historically, and Culturally Sustaining Pedagogies (CSP) today, has similar challenges.

That is, the pervading discourse around SE and CP similarly simplifies a complex relationship, by depicting a "standoff" in which it seems two positions are in opposition. For instance, there has been a long-standing belief that science—and hence SE— maintains its prestige and relationship to society by *not* being accessible. This discriminatory logic is evidenced by the ways SE has historically identified and differentiated between the non/potential scientists, un/scientific, and un/healthy students (Kirchgasler, 2023; Rudolph, 2019). CPs, on the other hand, were introduced to cultivate students' connections to, and opportunities for, learning, in addition to their sense of belonging, knowledge of self and others, and critical reading of and response to the course content in relationship to the world in which they're immersed (Muhammad, 2020). Some in education argue that for SE to be more equitable, or even more accessible, it needs to expand (Mutegi, 2011), potentially beyond what some might recognize as "scientific." In contrast, others argue that CP's view of expansion is a deviation from SE's commitment to develop appreciation of the discipline and continue feeding future scientists and technical workers into the science "pipeline." We will show that these two narratives are oversimplified and create a false, either/or binary. The dichotomy pitting rigor against equity and accessibility makes it hard to see a both/and reality where SE and CPs can work together to provide more equitable, just science education.

Thus, for this edited volume, our chapter uses the metaphor of a committed relationship to illuminate some of these complexities while we explore the tensions straining the connection between the two perspectives: Science Education and Culturally Sustaining Pedagogy, an offspring of Critical Pedagogy. We depict the complexity of this relationship by imagining them in a counseling setting, directly