
Critical Pedagogy in Practice in the Computing Classroom

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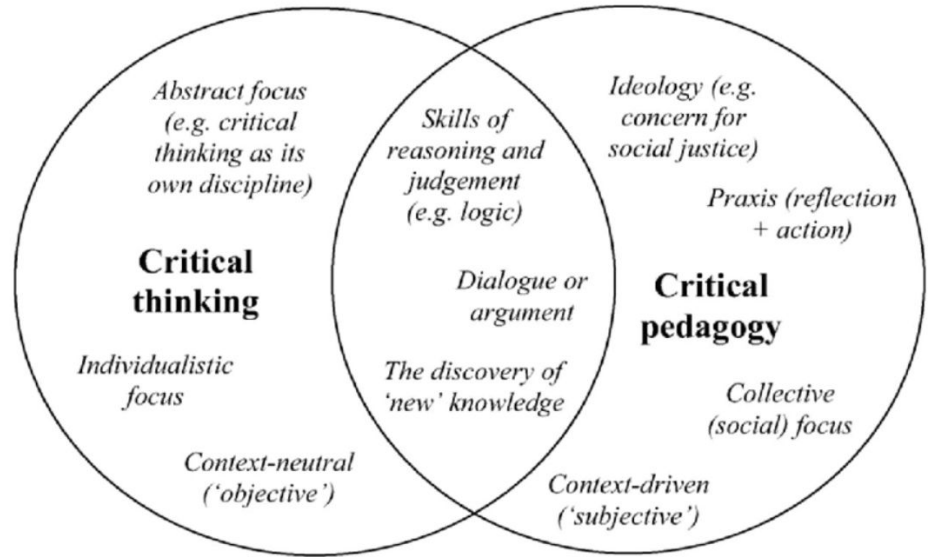
**how information is
shared in society?**

■ New Visitor ■ Returning Visitor



Critical pedagogy (CP)

- About teaching students to think critically and question the information they are given.
- Examine power structures and patterns of inequality through an awakening of critical consciousness



Source from [Rodwell Makombe](#)



Abstract

- interviewed 13 computing educators who are influenced by critical pedagogy.
- present three vignettes:
 - a. raising students' critical consciousness to see structures of oppression
 - b. helping students learn technology that supports their activism
 - c. changing what it means to do computer science by integrating social and political —forces

Introduction: why does it matter?

- 5,500 students feel less of a commitment to social justice than students in other majors

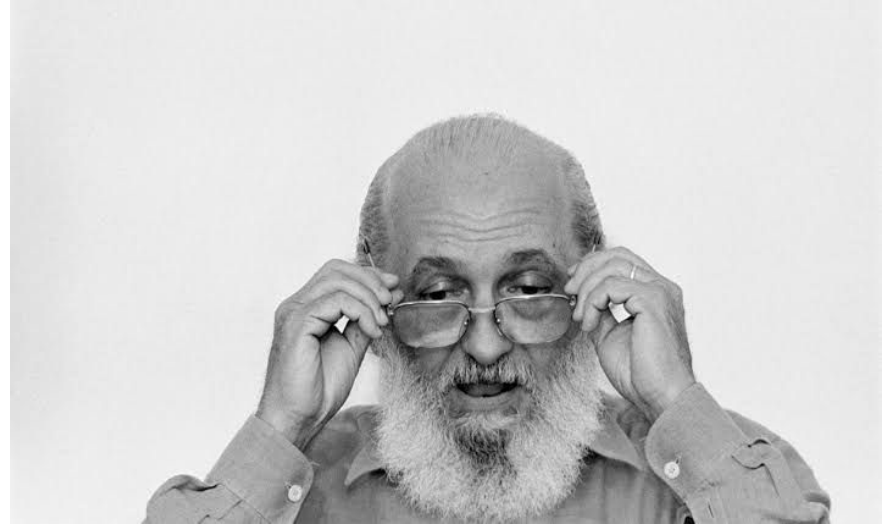


Background

Pedagogy of the Oppressed

literacy education in 1960s Brazil

Banking model vs students and
teachers collaborate to learn together



Research Question



for CS educators who are inspired by CP, what instructional interventions do they describe using when teaching CS critically?

Methodology

Qualitative research

“achieve an understanding of how people make sense of their lives, delineate the process (rather than the outcome or product) of meaning-making, and describe how people interpret what they experience”

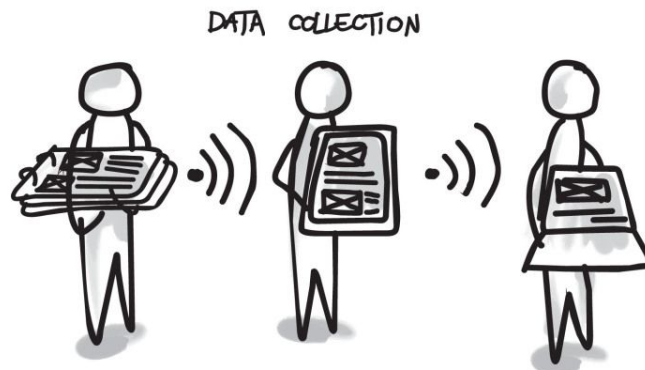
Data Collection

Participant recruitment:

Participants background:

Interview format:

- (1) What is your teaching philosophy?
- (2) What is your understanding of CP?
 - (a) What is not part of your understanding of CP?
 - (b) How did you first learn about CP?
 - (c) Does your teaching philosophy connect to CP? If yes, how?
- (3) To you, what are the necessary elements of CP?
- (4) Let's go through each element of CP you listed one at a time. Can you elaborate on each item and explain to me how you incorporate this item in your teaching?

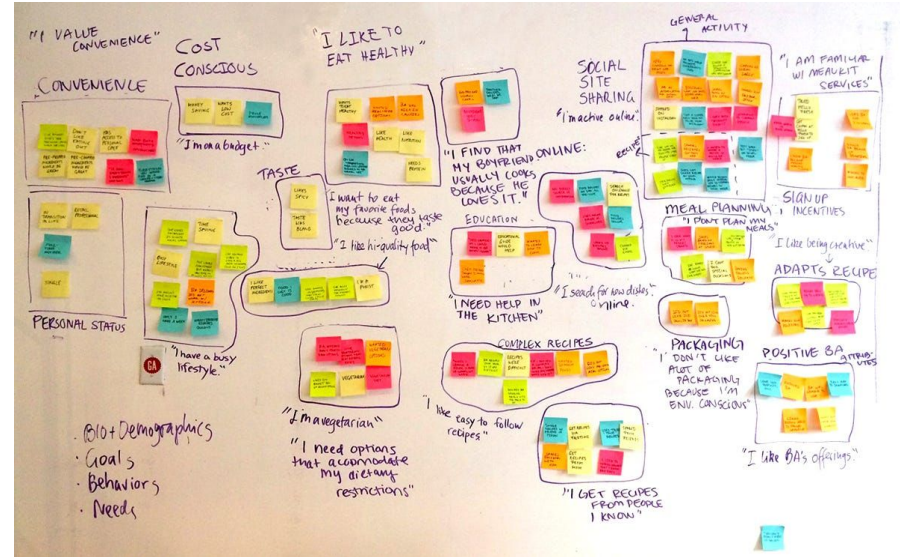


Method (cont.)

Transcripts are analyzed to find the commonalities

Grouped using affinity mapping

Three participant interviews to highlight contrasting visions of critical computer science education



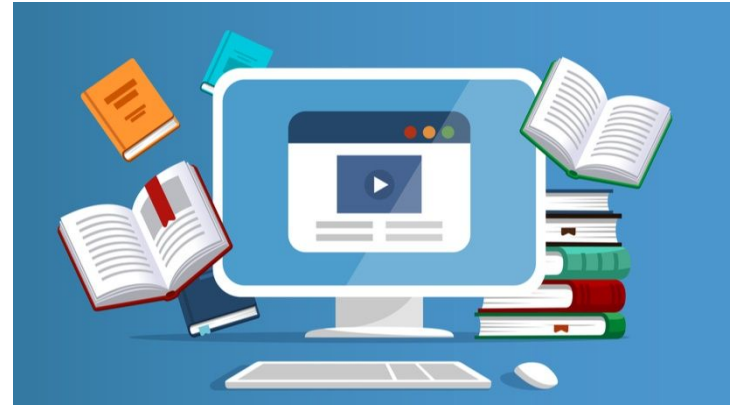
Result

1. raising student awareness to systems of power
2. helping students regain access to unfairly seized resources
3. changing the disciplinary norms of computer science to be more critica

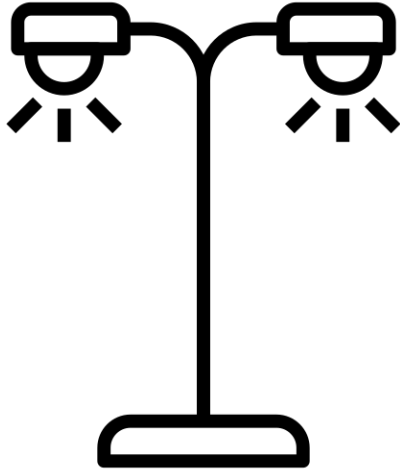
Vignette 1: Raising students' critical consciousness

“created this whole curriculum where we analyzed the social, historical and political processes that shaped the way their community is now”

create an interactive fictional story (a.k.a. choose-your-own-adventure story) that provides a counternarrative of the students or their community, to be shared on the Scratch online platform.



Vignette 2: Helping students escape the punishment of poverty



create a documentary and leaflet for the community about how to safely create those illegal connections

workshop are tangible, hands-on resources for students and their community to resist the cruel punishment of poverty

Vignette 3: Changing what it means to be a computer scientist



expose students to a sociological perspective of computing is through assignments

Irish immigration into New York City from the 19th century

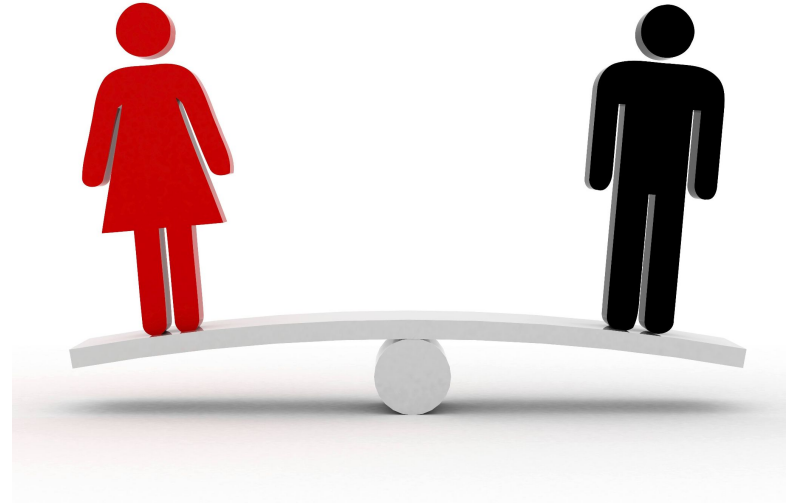
how these immigration admittors' biases become encoded in the dataset

Discussion and Limitation

Raising awareness is insufficient on its own to make meaningful social change. Instead, awareness raising must be complemented with clear calls to action if social change is the goal

Educators of different genders differ in how they bring criticality in their teaching

Many educators feel nervous about getting political in the classroom



Conclusion

The authors hope this paper provides a starting path for or supports educators to make this change and find more resources on their journey towards critical CS education
