




Learning, Education, and Families

Xinru Tang and Sophie van Genderen



A Systematic Review of Empowerment in Child- Computer Interaction Research

Overview

- Systematic review of papers from IDC and IJCCI
- Goal: understanding how empowerment has been articulated in CCI literature over time
 - Finding trends and tendencies within CCI literature to mature the research field and support the increasing use of “empowerment”
- Takeaways
 - Set of 3 questions
 - Call to action



Background

- History
 - 1960s and 1970s
 - 1980s
 - Mid 1990s
 - Early 2000s
- Empowerment in CCI research
 - Computing Education
 - PD
- Different articulations of empowerment
 - Framework by Kinnula and colleagues



The Framework

- Functional Empowerment
- Educational Empowerment
- Democratic Empowerment
- Mainstream Empowerment
- Critical Empowerment



Methods

- Papers from IDC and IJCCI
- Coding using framework
- Limitations

Why is developing your own protocol considered a limitation?



Results

- Prevalence of the term empowerment over time
- Mixed methods
- Empowerment has been used in CCI since the early days
- Increase in papers containing term “empower*”

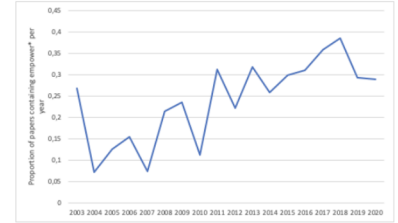


Figure 2: Proportion of papers containing empower* per year.

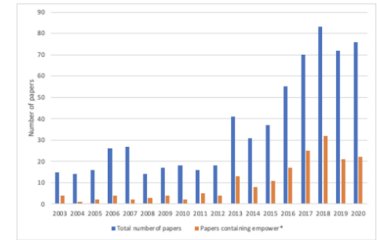


Figure 1: Total number of papers (blue) and number of papers containing empower* (orange).

Results

- How empowerment has been articulated across the corpus over time
- Quantitative analysis
- Unequal distribution of how empower* is used in IDC and IJCCI papers
- Changes over time

What could be the cause of these changes? Just a change of interest, did new knowledge come into play which caused the increase/decrease of some forms?

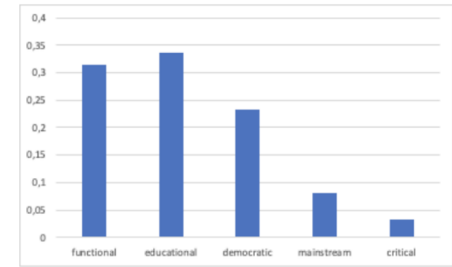


Figure 3: The distribution of papers according to category

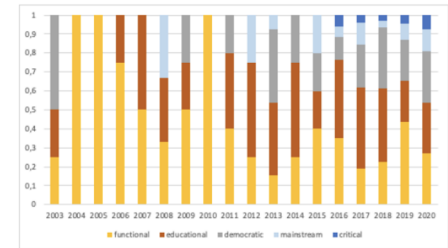


Figure 4: Proportions of categories used in papers and represented per year.

Discussion

- Lack of definitions
- Several interpretations of empowerment
- Shift from functional → more even distribution
- Phases of CCI

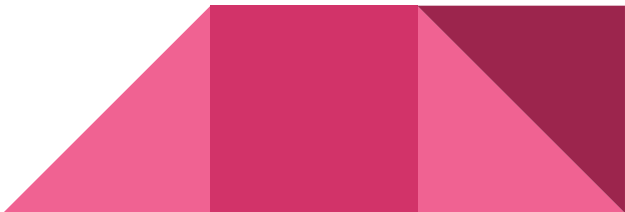
Why did the authors decided to name the phases this way? Does it describe the growth of the field of CCI or is it because of something else?




Contributions

- Empirical
- 3 questions
 - “What is your definition or conceptualization of empowerment?”
 - “Who are you aiming to empower, how (i.e., the means) and to what end?”
 - “How do you account for and evaluate if you have reached your goals?”
- Call to action

What do you think of these questions? How do they help reach the authors' goals? Are they enough to guide researchers?





Two Stances, Three Genres, and Four Intractable Dilemmas for the Future of Learning at Scale

Contributions

a synthesis of large-scale learning technologies

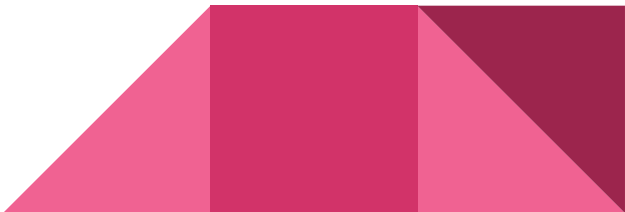
- classification of large-scale learning tech
- ❖ making predictions about the performance of a new large-scale learning tech
- ❖ understanding what is genuinely innovative in a new system
- identification of four challenges that large-scale learning tech faced

Blending @ Scale

The theme of this year's conference is Blending @ Scale. Read more about it in the [call for submissions](#). We are inviting the following types of submissions this year:

- research papers
- **synthesis papers**
- work-in-progress papers
- demonstrations
- workshops

The [call for submissions](#) is released and provides details on deadlines, format, topics of submission, and our open science values.



Two stances

- 1) the charismatic stance: the rhetoric of “**disruptive** innovation” to describe how emerging technologies can offer a new value proposition that leads to the **wholesale transformation** of existing systems.
- 1) **tinkerer**: improvements come from many years of **incremental** changes to existing institutions rather than from wholesale renewal

Blending @ Scale

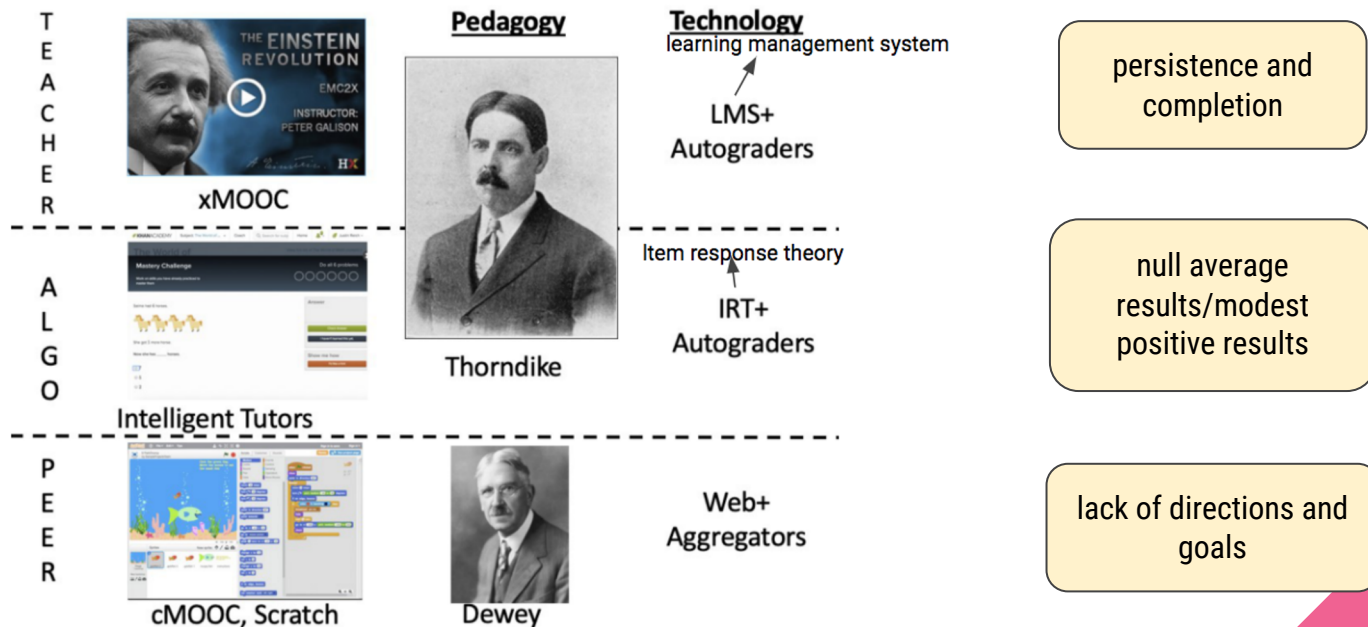
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Three genres



In the early years, researchers began by investigating **proxy outcomes for learning**, such as measures of participation, persistence, completion, satisfaction, and activity...As the field and tools mature, however, we have increasing expectations for new and established measures of learning. As L@S research expands, we aim for **more direct measures of student learning**. (L@S 2022)



Four dilemmas

- the curse of the familiar
- the edtech Matthew effect
- the trap of routine assessment
- toxic power of data and experiments

Do you agree that educational technologies are facing these challenges?

What are the most significant challenges that are faced by learning tech?

What are the most significant challenges that are faced by the educational system?

