

(Off-)Loading the Boat even more? Using Cognitive Load Theory to Frame Attempts of School Improvement

Research Overview

We introduce an international comparative approach focused on the question, how demands that challenge leaders' and others' capacities for school improvement can be met, and how support structures can be developed, by synthesizing school improvement research with approaches from learning theory focusing on working memory capacities and cognitive load.

Background

Research shows that school leaders are often overwhelmed by the requirements of school improvement, and feel less efficacious in this task than in other leadership duties. This has been found worldwide, but the reasons for overwhelm vary across countries, depending on systemic conditions such as leaders' education or working requirements (Klein et al., 2022).

So far, this phenomenon has been considered mainly from a perspective analyzing school structures, processes, and cultures that facilitate or exacerbate school improvement. This research is less on ***understanding why*** engaging in school improvement poses a challenge for leaders.

On the other hand, school improvement is a learning occasion in which leaders process new information, integrate it into existing knowledge, and reorganize it. The demands that this learning places on them has hardly been conceptualized systematically. There are, however, approaches in learning theory that could contribute decisively to a better understanding of the demands facing leaders and thus be helpful in developing support structures. One of these is Cognitive Load Theory (Sweller, van Merriënboer & Paas, 2019). Its central assumptions, that during learning or problem solving, working memory is loaded by three types of cognitive demands (intrinsic, extraneous and germane load) that sum up and, when exceeding cognitive resources, can lead to overload, can well be applied to the load that leaders face during school improvement processes.

Purpose

Our interdisciplinary group brings together scholars from school improvement and cognitive load research from Chile, Germany and the US. The presentation will start with a short explanation of the main ideas of the two fields and then offer four impulses from diverging perspectives. We will first focus on the perspective of school improvement research and how collective agency and educators' ability to cope with demands depend upon demand complexity. We will then zoom in the perspective of cognitive load theory, and discuss how the load of leaders and teachers can be perceived as the motivational cost of their respective tasks. Finally, we will discuss the cognitive load of leaders in the light adult learning and problem solving in the context of continuous improvement.

We will then present a study that aims to shed light on the question how school improvement programs can offload school leaders.

Research Methods and Results

A questionnaire was developed assessing cognitive load and other of the above-mentioned demands for school principals enrolled in a German support initiative for children struggling with basic competencies. For this continuous program, trained teacher students support small groups of children. School leaders must, for instance, decide on participating children, organize rooms, or coordinate communication within the school. In other words, we investigated, whether the program actually facilitates school improvement efforts rather than being an additional burden for leaders. We used 21 items (7-point) across 9 scales (load, infrastructural aspects, distribution of roles and tasks, communication, perceived benefits of the program).

As of current, the questionnaire was answered by 13 leaders at whose schools ~750 children have taken part in the program. All leaders reported comparably low invested load ($1.67 < M < 2.33$), while this load was higher for pedagogical staff who were assigned with the coordination ($4.00 < M < 4.33$). Among the scales, the highest load was associated with infrastructural aspects (organizing rooms, choosing children), distribution of tasks (e.g., main contact person) and communication overall (with colleagues, universities, students).

All leaders perceived the program to be highly beneficial for the children ($M=5.73$), and they did not differ in this perception. They also indicated above-average benefits of the program for the teaching staff at their schools (in terms of offloading them; $M=4.73$), and again, these perceptions did not differ. At the same time, they perceived the program as a relief for their personal work ($M=5.00$) and for their school in general ($M=4.91$).

Discussion

School improvement is a challenging task worldwide, and simply starting well-meant support programs is not a silver bullet in itself. Successfully implementing them requires conditions on the schools' side, among which a certain level of infrastructure, engagement (*continuous improvement*; Chilean contribution), commitment (*collective agency*; US contribution) and a stable culture of communication (German contribution) are only a few. The impact of either of these may vary strongly across continents and countries (Klein et al., 2022).

The presentation will finish with an outlook on how the study will be continued in the three countries involved and an overview on how the different perspectives can be merged for an international view on school improvement, leadership, and cognitive load.