# Promoting Self-Regulated Learning and 21st-Century Skills with Task-Centered Microlearning
## (Poster)

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## מכוונות עצמית בלמידה ומיומנויות המאה ה-21 באמצעות מיקרו-למידה מוכוונת משימה
### (פוסטר)

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## Abstract

As educators, we need to prepare and train K-12 students for jobs that have not yet been created and problems that have not yet been anticipated. We need our instructional methods to consider skills and competencies that are required for their career mobility as grownups. These skills, often referred to as 21st-century skills, include self-regulated learning (SRL), critical thinking, collaboration, and more (Ananiadou & Claro, 2009). The need for SRL was intensified during COVID-19 worldwide spread, which drove school systems to online learning and required students to learn by themselves.

Microlearning is a set of small 5-10 min chunks learning units called microunits. A microunit can include, for example, a short movie followed by a short activity for self-evaluation. (Hug, 2007). Using the video controls (e.g., play, pause, replay) and embedded tasks, the student controls his learning environment and monitors his progress, both pillars of self-regulated learning (Zimmerman, 2002). Furthermore, microlearning may reduce some of the cognitive load involved as the units are structured in short segments (Plass et al., 2010).

Nevertheless, microlearning alone may not be sufficient when there is a need to acquire complex concepts. A single microunit covers only a fragment of a curriculum concept, yet the student needs to relate between sets of microunits and put them into the appropriate larger context. An organizing task may help the student cognitively assemble different learning units and engage him in the learning activity by providing meaning and motivation (Merrill, 2012). In addition, timely teacher interventions and facilitation are crucial for students' progress (Goodyear & Dudley, 2015).

We developed a task-centered microlearning framework with 18 microunits centered around a team's task of creating a digital escape room. As part of our pilot research, 23 8th grade students used the framework for learning the human impact on earth resources. Eighteen of the students (78%) reported high enjoyment and high interest in the technical aspects of their task. Thirteen of the students (55%) reported practicing one or more aspects of SRL, such as controlling and

replaying the videos while self-evaluating their learning and overcoming obstacles by using their colleagues', teachers', or parents' help. In addition, fourteen of the students (60%) reported the collaborative work contributed to their self-understanding of the learned topic. Our research intends to examine further how the task-centered microlearning framework may promote self-regulated learning and collaborative working skills along with other 21st-century skills.

**Keywords:** Microlearning, COVID-19, PBL, Task-Centered Learning, Self-Regulated Learning, 21st-century skills, Collaborative Learning, Blended Learning.

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