

Design and Technology in Education

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The section includes six articles, each presenting interesting perspectives of promoting design and technology in education.

In the first article, *Using linkography to understand the social, conceptual and physical cognitive mechanisms during the design process* Nicolaas Blom and co-authors examine how Grade 8 technology learners interacted with information sources in the early phases on their design process. Besides guiding the learners' social, conceptual, and physical cognitive mechanisms during the process, the study makes a methodological contribution by illustrating how linkography can be utilised to analyse the design cognition used by learners during design activities.

Gerald van Dijk and co-authors introduce an online video catalogue for teaching design dialogue in their article *Fostering Creative Design Dialogue: A research based online catalogue of video clips*. The catalogue was formed around important qualities of design dialogue, identified through a literature study, interviews, and observations in higher education institutions. The videotaped observations were also used for creating thirty-six video clips for the catalogue, each showing one relevant quality of a design dialogue.

In their article, *The Process Models of Design Thinking - A Literature Review and Consideration from the Perspective of Craft, Design and Technology Education*, Satu Grönman and Eila Lindfors search for common ground between the design thinking process and the learning process in craft, design and technology education. Through a narrative literature review and analysis of three design thinking process models, the authors identify the elements and phases of the design thinking process. Further, they discuss the possibilities to nurture the holistic craft process, a commonly used concept in craft, design and technology education in Finland.

The next article *Developing Student Agency to Support Student Application and Implementation of Design Thinking. Phase One* presents a study by Toni Marie Mapuana Kaui and her co-authors. They investigated teacher's activities for promoting student agency and changes in student agency over time in a high school emphasizing the STEAM approach and Native Hawaiian cultural practices. The overall aim is to provide teachers with instructional practices to promote student agency, especially in populations underrepresented in STEAM careers.

In their article, *Design Feedback that Stimulates Children's Creative Thinking: a Feedback Intervention* Alice Schut and co-authors report a design feedback intervention during a primary school design project. Their findings provide detailed understanding of the successes and obstacles within feedback dialogues, and indicate that young novice designers can be supported in engaging in constructive design feedback dialogues that support their creative thinking.

Markus Stoor and Oleg Popov compare the Swedish curriculum to Norwegian, Finnish, and Estonian curricula in their article *Societal aspects of technology - the Swedish lower secondary school curricula in international comparison*. Their study focuses on the societal aspects of technology found in the curricula, how it relates to design and making, and how much flexibility the syllabi offer to the teachers contentwise. They conclude that the Swedish content stands out both as the most extensive and the least design related.