



Executive Summary



There is increasing acknowledgement, due to growing inequality and increased uncertainty in the fast-changing world, that there is a need for children to develop a more holistic set of skills and competencies for them to thrive in the present and future. For children to thrive in this fast-changing world and be equipped to create a better world, learning needs to be more than just a matter of memorising facts. Evidence from research suggests that play is a fundamental mechanism for children to develop, and it is increasingly being perceived among caregivers and educators as critical for engagement, positive relationships and learning (The LEGO Foundation, 2022). Similarly, according to UNICEF (2018) learning through play can enhance learners' mastery of academic concepts and build motivation to learn.

In this report we provide an overview of the research insights gathered during the implementation of a mini-Tinkering intervention in the Sandbox schools. The Sandbox Schools Project is the Edhub's flagship research project, that trials approaches to competency-embedded education in South African public schools. The aim of the Sandbox is to test these teaching and learning practices within the context of a 'typical' public school in order to gather evidence on which practices and models are best suited to the South African schooling system.

Tinkering is a sensory-filled experience in the classroom that encourages learners to interact with, be hands-on with and manipulate building blocks and various other materials. The NECT Edhub implemented the Tinkering intervention at two primary schools, which are part of the Sandbox Schools Project, in Limpopo.

The LEGO Foundation donated the tinkering kits, and 16 teachers were trained on how to use them in the classroom. Teachers were then given full autonomy to decide on when and how they chose to introduce tinkering into their lessons. The primary objective of the intervention was to obtain an understanding of how teachers perceive and experience the use of tinkering kits in South African public school classrooms. After two months of implementing tinkering in the classrooms, semi-structured interviews were conducted with the teachers to gather data on their perspectives and in-class experiences using tinkering kits in grades 1, 3, 4, 6 and 7 lessons.

The main findings from the thematic analysis of the qualitative data are as follows:

- Tinkering kits can be used across different grades and subjects
- Tinkering was described by the majority of teachers as a fun, creative, hands-on way of learning that promotes self-learning, creativity, collaboration and deeper learning through play
- Tinkering benefits learners with learning difficulties by enhancing their engagement and creativity
- Tinkering is not a one-size-fits-all approach to teaching and learning
- Tinkering can be further improved in the classroom

The intervention is referred to as a mini-intervention because it was implemented over a short period of time (ran over a period of 2 months) and the sample size was small (16 teachers in 2 schools).