

## **Language and Communication Challenges when Learning Science in a lower Primary School: Using Lego to develop multiple ways of communicating**

Sibusiso Cliff Ndlangamandla and Irene Kimani

### **Abstract**

The language policy in Kenya makes provision for the use of mother tongue (L1) as the medium of instruction from pre-Primary to Grade 3 while gradually transitioning to English as a Second Language (L2). Due to the linguistic diversity and cultural heterogeneity of settlers in urban areas, Kiswahili is used as a language of instruction. Recently, a program of using Lego to teach STEM subjects was introduced in some schools. Therefore, the objectives of this study were to explore the use of Kiswahili and English in Lego gaming and robotics instruction and describe the language and communication challenges in learning coding and programming skills in children aged 6-9 years in Nakuru Town, Kenya. This is a small scale pilot study that was conducted after a 12 weeks program of introducing LEGO to 12 learners aged between 6 and 9. Focus group discussions and participant observations were conducted with 3 mentors and the 12 learners. Integrational and thematic analysis was conducted to organize the major themes from the data for interpretation. The study was anchored in code switching, and translation and resulted in both failures and successes. Language use and development through gamefulness reveals multifarious means of communication. The participation, dispositions and interactions during the game are important signifiers that go beyond the sociolinguistic 'code', and the translation 'myth' held by language teaching pedagogy. This invites an integrational analysis of processes of contextualization involving the game, the tutor and the learner. The findings were that learners show creativity by using the LI for various purposes during the lessons and that teachers perceive challenges when translating scientific concepts.

**Keywords:** Translation; codeswitching; mother tongue; Integrational Linguistics