

# Environmental Science and Language Competencies through Local Wisdom: A Study on Technology and Sasirangan Integration in Senior High Schools

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Sasirangan, a traditional cloth in Kalimantan Selatan, has been widely applied in subjects such as natural sciences, social sciences, and mathematics. However, its utilization in English language learning—particularly when combined with technology—remains limited. It holds significant potential as a contextual learning resource that links academic content to students' real-life experiences. Despite previous studies on local wisdom integration and learning applications in education, research combining Green ELT (English Language Teaching) principles, technology, and local cultural resources such as Sasirangan in English language learning for senior high schools remains underresearched. This study employed quantitative cross-sectional research as a preliminary study of research & development to find out students' needs, lacks, and wants. The data was collected from a questionnaire. It involved 624 participants from six senior high schools in South Kalimantan, Indonesia. The researchers applied the Structural Equation Modeling (SEM) statistical analysis through SmartPLS 3.0. The findings demonstrate that Sasirangan value integration (SVI) significantly and positively impacts language competence, indicating that local cultural content enhances engagement and understanding in language learning. Technology integration (TI) is a major predictor of SVI, but it does not directly affect language competence. This suggests that technology works best as a facilitator when it is combined with cultural content. Critical thinking and problem-solving (CTPS) and value & pro-environmental behavior (VPB) also have a big impact on both TI and SVI. This shows how important it is to have 21st-century skills and environmental awareness. All in all, this study confirms that local wisdom-based learning, supported by technology and environmental values, significantly contributes to language competence. Further studies are expected to explore longitudinal classroom-based interventions.

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