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AI-Aided Language Translation Apps for Education Equity in South Africa: A Methodological Exploration

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Abstract

Language barriers in South Africa present a significant educational challenge, particularly for non-English speaking students who require translation apps to access educational materials and resources effectively. The methodology involves a systematic review of current language translation technologies, an assessment of user needs through surveys, and the design and testing of prototype apps. Statistical analysis will be employed to evaluate app performance based on predefined metrics. A preliminary study revealed that over 70% of respondents preferred apps with higher accuracy rates in translating between Zulu and English compared to existing options. The development of AI-assisted language translation apps for education in South Africa represents a novel approach towards enhancing educational equity by reducing language barriers. Further research should focus on refining app functionality, addressing user privacy concerns, and evaluating long-term impact on student engagement and learning outcomes. AI translation, education access, language barriers, South Africa, educational technology Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2,$ with performance evaluated using out-of-sample error.

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