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## **HOW COMPUTER-BASED AND PAPER-BASED MODES OF LEARNING AFFECT STUDENT PERFORMANCE IN THE ESL CLASSROOM**

### **Abstract:**

The authors of this paper examined how paper-based vs. computer-based modes of learning affected student performance on vocabulary tests for new and unknown words. First-year Japanese university students were tested on various TOEIC vocabulary items to see how the mode of learning affected student performance. The test results showed all students, including higher ability students, performed better with paper-based over computer-based modes of learning. This performance increase is carried through all levels of ability until students become familiar with the vocabulary and their cognitive load is decreased. This indicates that all students when challenged by new and unknown data would initially perform better with paper-based modes of learning, which has implications for the teaching of new TOEIC vocabulary.

### **Keywords:**

TOEIC, computer-based modes of learning, paper-based modes of learning, student performance, English as a Second Language (ESL), vocabulary learning/testing, cognitive load, CALL (Computer Assisted Language Learning),