

## **A direct, tablet-based test of language development for French toddlers usable in non-lab settings**

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Available measurement tools constitute a hard limit for experimental protocols. In this study, we aimed to fill in a gap in available language tests for young children usable outside the lab, by developing a reliable direct language measure for French toddlers that was quick, automatized and administrable by non-researchers for use in larger-scale studies. Our touchscreen-based test measured vocabulary comprehension (similar to Friend & Keplinger, 2003, 2008), and novel word learning abilities, in 25 minutes. Trained support staff tested 175 20-28 month-olds ( $M_{age}=25$ ), in their daycare centers, accompanied by an educator. Parents filled in the online version of the French MBCDI productive vocabulary questionnaire. Our test showed high compliance rates (children answered 90% of trials), and increasing accuracy with age (see Figure). Although our novel word learning task showed mixed results and requires additional work to be adapted to younger children, scores to our vocabulary task showed good psychometric properties. Analyses revealed good convergent validity between our two tablet measures and the MBCDI (Pearson  $r_{vocabulary}=0.43$ ,  $p < .001$ ). The low variability of our sample did not allow us to assess sensitivity to individual variation although we did find trends of increased accuracy with higher SES or monolinguals. One important application of our tool is the use as a pre-post measure in interventional contexts, and we therefore developed 2 versions of our test matched in difficulty. A pre-post measurement separated by 4 months showed that pre-test vocabulary scores significantly predicted post-test scores ( $p < .001$ ). Taken together, these results show the usability of our touchscreen test with children as young as 20 months. Moreover, its high portability, minimal training requirements and short length allowed us to use it in a RCT language intervention based in 35 daycare centers, demonstrating its adaptedness to larger-scale naturalistic settings.