

**Title:** The Influence of Working Memory on Reading and Creative Writing Processes in a Second Language

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### **Summary:**

The main purpose of this study is to measure both the process and storage functions of working memory (WM) and to investigate whether WM in low order and high order writing processes. The researchers assumed that if they could link into a person's WM processes and figure out what decides one's writing skills, improving the skills of weaker writers would be possible. The rationale for the Second Language (L2) is that, in one's L2, linguistic processes and problems can often be detected because a central processing deficit will cause similar difficulties in both languages.

Because younger subjects would better deal with L2, 47 high school students were selected and assigned to take two types of tests. First, Test of Written Language was used to measure a comprehensive standardized measure of writing ability, consisting of 10 subtests (spelling, vocabulary, style, logical sentences, sentence combining, thematic maturity, contextual vocabulary, syntactic maturity, contextual spelling, contextual style.) Second, WM - Reading Comprehension test was used to determine the subjects' WM; they read two passages and answered four questions without rereading the text. The first question concerned the pronoun reference while, in the first passage, the distance between the pronoun and its referent was two sentences and, in the second passage, it was six sentences. Two of the other questions asked to recall a fact from the passage. The last question was thematic. In addition, there was no time limit.

These tests revealed four major results.

1. There was a significant correlation between the WM task and the subtests and total Test of Written Language (total test result correlation  $r = 0.54$ ,  $P < 0.001$ ).
2. The distance between a pronoun and its referent had a marginal impact on the subjects' ability to recall the referent, indicating that the individual's working memory works here.
3. Based on the Thematic Maturity subtest, which measured the instances where the subject used names of characters, objects and so on, there

was one weak correlation; one's written proficiency and WM are not necessarily displayed by the use of proper names and objects.

4. A number of subjects forgot words in the dictation and substituted "a" for "the" and vice versa. For example, in the second passage, when the answer was "Wayne" who is the speaker's best friend, some wrote "my best friend," others wrote "his best friend," and yet others wrote a distortion of the name Wayne.