Both native speakers and second language learners of French struggle with the written production of gender inflection. This dissertation investigates the acquisition of this type of grammatical inflection in written language production by both groups of language users. The experiments revealed that the syntactic complexity of sentences influences the accuracy of written inflections and that the phonological expression of gender inflection does not have an effect on the written production of French. To test whether some French digital spelling checkers could be of help for the educational practice to improve writing accuracy, their performance at correcting grammatical inflection has been evaluated. The findings described in this dissertation are relevant for professionals working in language education.