People who suffer a traumatic brain injury (TBI) often complain that reading comprehension and the ability to organize projects have become more difficult. Researchers have pinpointed working memory problems as a source of these difficulties.

A group of researchers decided to investigate the effects of a TBI on children’s working memory. They used two different tasks – one focusing on a semantic word task and the other on a phonological task. These tasks were also done with a group of children without brain injuries.

Children who had suffered a TBI showed impaired working memory. The researchers found that TBI had a selective effect on the ability to match letters, but not on the ability to match rhyming letters. As well, children with TBI were more likely to give “false alarms”. The researchers suggest that these false alarms indicate diminished inhibition in children, a side effect often seen in certain brain-injured patients.

“It is well known that children or adults who have suffered a traumatic brain injury will be likely to sustain memory problems,” says Dr. Harry Bawden, a pediatric neuropsychologist at the IWK Grace Health Centre in Halifax. “This study explores a particular kind of working memory and is another indicator that we should pay attention to the memory abilities of individuals with TBI and help them deal with the problems.”

Dr. Bawden adds that there is a pressing need for more long-term services and supports for brain-injured children once they leave the hospital.

He further suggests that brain-imaging techniques be used to explore how different areas of the brain may be affected by TBI. “Imaging studies would certainly help in understanding what certain areas of the brain do and what tasks involve which areas.”