Short-term and working memory

The concept of working memory (WM) evolved from the concept short-term memory (STM). In the literature these concepts are sometimes used as synonyms. Dr. Alan Baddeley uses STM to refer simple temporary storage of information in contrast to WM, which implies the combination of storage and manipulation WM as mental workspace, e.g.

STM: repeating number series immediately (6-5-3…6-5-3)

WM: repeating number series backwards (6-5-3… 3-5-6)

Working memory scores predict and correlate to:

- Academic ability, including literacy
- Mathematics
- Language comprehension
- Teacher ratings of children's general abilities at school entry
- WM scores are effective predictors of scholastic attainments over the subsequent school years
- Deficits of WM are found in children with learning difficulties in literacy and mathematics –very seldom in children without learning difficulties
- Short term memory (STM) skills are much more weakly associated with general academic and cognitive performance than working memory skills (WM)
- One important specific link – between Verbal STM and learning of new sound patterns of new words in both the native language and second language at all ages!
- Children with poor verbal memory have specific problems in learning the phonological structures of new vocabulary items – that's why they are learning new words slower rate than other children

Children with Specific Language Impairment (SLI) have problems both in STM and WM. E (Cathercole & Alloway, 2006)