| **38** CHANDLER COMMUNITY.ORG September 2008 **CHANDLER YOUTH**  | The Connection Between Memory and LearningWORKING MEMORY DEFICITS OFTEN CONFUSED WITH LACK OF MOTIVATION |
| --- | --- |
| WRITTEN BYLYNN CARAHALY, MA, CCC-SLP,TRACEY GRAVES, PHD, CCC-SLPHaving a limited working memorycapacity often results in losingcrucial information when tryingto follow instructions and detailsof what to do next. If informationis not stored properly, or at all,a child most certainly cannotretrieve this information forinformation for learning.Children with working memoryfuture tasks or build upon priordeficits demonstrate difficultyremembering information fromone lesson to the next.**Children with working memory deficits often:****Get poor grades in reading****and math****Are easily distracted****Have problems finishing****classroom assignments****Have trouble following****directions from teachers****Are reluctant to answer****questions in class** |

|  |
| --- |
| **C** |

hildren who receive poor gradesin reading and mathematics,have problems finishing schoolwork,and have a hard time payingattention are often labeled“unmotivated” by parents and teachers. Thechallenge may not actually be a lack of intelligenceor even a lack of motivation for manystruggling students, but simply a poor memory,in particular a poor working memory. Working Memory is a critical cognitive function that refers to the ability of the brain to hold and manipulate verbal and visual information in the mind for brief periods of time. An example of working memory is remembering a telephone number or remembering someone’s name 30 seconds after they have introduced themselves. Working memory precedes short term memory. It workslike a mental notepad to help us store importantinformation to carry out tasks. Children with working memory deficitsare easily distracted, struggle to rememberinstructions, and have difficulty starting, prioritizingand finishing tasks. Studies have shown that they also have difficulty in school, particularly with reading comprehension and math, due to their inability to hold in mind sufficient information to allow them tocomplete the task at hand. Studies conducted at York University concludedthat working memory skills at 4 years old are excellent predictors of children’s achievements three years later on national assessments in reading, writing and mathematics. Children with good working memoryskills perform better in school. In contrast, children who did not achieve at expected levels in national assessments in literacy and mathematics typically have weaker working memory skills compared to their agematched peers. Many researchers in the field of cognitiveskills related to academics believe workingmemory is the most important predictor oflearning, much more so than a student’s overallIQ score. Working memory gives us an isolatedmeasurement of what a student iscapable of learning. It measures a child’spotential to learn and not just what they havealready learned. Working memory plays a key role in Attention Deficit Disorders. Poor working memory leads to poor attention, and good working memory results in good attention. | A girl reading a bookMany children diagnosed with AD/HD alsohave a limited working memory capacity.Research shows that children with AD/HDhave an average working memory levelroughly equal to that of a non-AD/HD sevenyear old. Strengthening working memory canhelp to reduce the social, academic and otherchallenges that children with AD/HD faceevery day. There is good news for students with poorworking memory skills: there is somethingthat can be done about it. The human brainhas the ability to reshape and rewire itself.This is called neuroplasticity. Neuroplasticity,also referred to as brain plasticity or corticalre-mapping, is the brain’s ability to changeshape and re-network, creating new connectionsbetween neurons, as well as establishingnew neurological pathways in the brain.Working memory impairments can beaddressed using a combination of researchbasedworking memory training techniques toactually create a neurological change in thebrain’s ability to expand working memorycapacity, and directly teaching and implementingmemory strategies in the classroomand everyday life. *For further information on working**memory deficits and interventions,**please visit www.listening-ears.com or**email Lynn Carahaly, MA, CCC-SLP at**info@listening-ears.com. ©* |