

Πρόγραμμα Μεταπτυχιακών Σπουδών Εξειδίκευσης
` του Τμήματος Ελληνικής Φιλολογίας του Δημοκριτείου Πανεπιστημίου Θράκης
σε συνεργασία με το
ΕΚΕΦΕ Δημόκριτος – Ινστιτούτο Πληροφορικής και Επικοινωνιών
με τίτλο: «Εξειδίκευση στις Τ.Π.Ε. και Ειδική Αγωγή-Ψυχοπαιδαγωγική της ένταξης»

**ΕΝΙΣΧΥΣΗ ΤΩΝ ΕΚΤΕΛΕΣΤΙΚΩΝ ΛΕΙΤΟΥΡΓΙΩΝ ΣΕ ΠΑΙΔΙΑ ΜΕ ΕΙΔΙΚΕΣ
ΕΚΠΑΙΔΕΥΤΙΚΕΣ ΑΝΑΓΚΕΣ ΜΕΣΩ ΕΦΑΡΜΟΓΩΝ ΚΙΝΗΤΩΝ ΤΗΛΕΦΩΝΩΝ**

**STRENGTHENING EXECUTIVE FUNCTIONS IN CHILDREN WITH SPECIAL
EDUCATIONAL NEEDS THROUGH MOBILE PHONE APPLICATIONS**

της

Αλεξανδροπούλου Βασιλικής

Μεταπτυχιακή διατριβή που υποβάλλεται
στην τριμελή επιτροπή για την απόκτηση του μεταπτυχιακού τίτλου του
Προγράμματος Μεταπτυχιακών Σπουδών Εξειδίκευσης
του Τ.Ε.Φ-Δ.Π.Θ. σε συνεργασία με το Ε.Κ.Ε.Φ.Ε. Δημόκριτος – Ινστιτούτο
Πληροφορικής και Επικοινωνιών
με τίτλο: «Εξειδίκευση στις Τ.Π.Ε. και Ειδική Αγωγή – Ψυχοπαιδαγωγική της ένταξης»

Εγκεκριμένο από την τριμελή επιτροπή:

1ος Επιβλέπων: Δρίγκας Αθανάσιος, Ερευνητής Α' βαθμίδας, Ι.Π.Τ. Ε.Κ.Ε.Φ.Ε.
«ΔΗΜΟΚΡΙΤΟΣ».

2η Επιβλέπουσα: Συριοπούλου-Δελλή Χριστίνα, Καθηγήτρια, Πανεπιστήμιο Μακεδονίας.

3η Επιβλέπουσα: Καραμπατζάκη Ζωή, Συνεργαζόμενη Ερευνήτρια, Ι.Π.Τ. Ε.Κ.Ε.Φ.Ε.
«ΔΗΜΟΚΡΙΤΟΣ».

Κομοτηνή/Αθήνα

2020

ΠΕΡΙΛΗΨΗ

Τα άτομα με ειδικές εκπαιδευτικές ανάγκες φαίνεται να παρουσιάζουν μειωμένες εκτελεστικές λειτουργίες, με αποτέλεσμα να κινδυνεύουν από χαμηλές σχολικές επίδοσεις, παραμονή στην ίδια τάξη ή/και εγκατάλειψης του λυκείου αλλά και κοινωνικό αποκλεισμό. Τα κινητά τηλέφωνα ως εργαλείο στην εκπαίδευση των ατόμων αυτών μπορούν να συνεισφέρουν με τον καλύτερο δυνατό τρόπο στην ανάπτυξη των δεξιοτήτων τους, την οικοδόμηση της απαιτούμενης γνώσης και την εξασφάλιση ίσων ευκαιριών στην κοινωνική ζωή τους με αποτέλεσμα την ενίσχυση της ανεξαρτησίας τους και της αυτοεκτίμησης τους και συνεπώς την βελτιώση της σχολικής τους επίδοσης και της ένταξη τους στην κοινωνία. Η παρούσα έρευνα βασίστηκε σε άρθρα επιστημονικών περιοδικών και σε εξειδικεύμενα βιβλία, με σκόπο να διερευνήσει με ποιον τρόπο μπορούν τα κινητά τηλέφωνα να συμβάλλουν στην ενίσχυση των εκτέλεστικών λειτουργιών και άρα στη σχολική επίδοση ατόμων αυτών. Τα αποτελέσματα έδειξαν ότι τα κινητά τηλέφωνα αποτελούν ένα φιλόδοξο εργαλείο ενίσχυσης των λειτουργιών αυτών αλλά και ανάπτυξης των κατάλληλων προγραμμάτων εκπαίδευσης, αφού μπορούν να προσαρμοστούν στις ανάγκες των ατόμων με ειδικές εκπαιδευτικές ανάγκες.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ: Εκτελεστικές λειτουργίες/δεξιότητες, Εργαζόμενη μνήμη, Ανασταλτικός έλεγχος, Μεταγνώση, Ενσυναίσθηση, Κινητά τηλέφωνα

μόνο στην αγγλική γλώσσα. Τέλος, οι αναφορές των διεθνών οργανισμών έχουν εξαιρετικά μεγάλη έκταση και δεν ήταν δυνατό να διερευνηθούν εις βάθος στο χρονικό διάστημα που διεξήχθη η έρευνα

ΠΡΟΤΑΣΕΙΣ ΓΙΑ ΜΕΛΛΟΝΤΙΚΗ ΕΡΕΥΝΑ

Από την παρούσα εργασία προκύπτουν οι εξής προτάσεις για μελλοντική έρευνα:

- Να πραγματοποιηθούν περισσότερες μελέτες για τη χρήση των κινητών τηλεφώνων στα ελληνικά ειδικά σχολεία.
- Να πραγματοποιηθούν μελέτες για τις παραπάνω εφαρμογές σε μεγαλύτερο πληθυσμό, ώστε να παραχθούν εγκυρότερα αποτελέσματα.

ΒΙΒΛΙΟΓΡΑΦΙΑ

Ahmad, I. S., Parhizkar, B., & Pillay, S. O. (2016). Engaging Children with ADHD using Mobile Based Games. International Journal of Communication and Networking System, 6(1), 11–15. <https://doi.org/10.20894/ijcnes.103.006.001.003>.

Alexopoulou, A., Batsou, A. & Drigas, A. (2020). Mobiles and Cognition: The Associations Between Mobile Technology and Cognitive Flexibility. International Journal of Interactive Mobile Technologies, 14, 146-156.

Alghabban, W. G., Salama, R. M., & Altalhi, A. H. (2017). Mobile cloud computing: An effective multimodal interface tool for students with dyslexia. Computers in Human Behavior, 75, 160–166. DOI: 10.1016/j.chb.2017.05.014.

Alloway, R. G., & Alloway, T. P. (2015). The Working Memory Benefits of Proprioceptively Demanding Training: A Pilot Study. Perceptual and Motor Skills, 120(3), 766–775. <https://doi.org/10.2466/22.PMS.120v18x1>.

Alloway, T. P., & Archibald, L. (2008). Working memory and learning in children with developmental coordination disorder and specific language impairment. Journal of learning disabilities, 41(3), 251–262. <https://doi.org/10.1177/0022219408315815>.

- Alloway, T. P., Gathercole, S. E., & Pickering, S. J. (2006). Verbal and visuo-spatial short-term and working memory in children: Are they separable? *Child Development*, 77, 1698–1716.
- Allport, A., & Wylie, G. (2000). Task switching, stimulus-response bindings, and negative priming. *Control of cognitive processes: Attention and performance XVIII*, 35-70.
- Andersen, P. N., Skogli, E. W., Hovik, K. T., Geurts, H., Egeland, J., & Øie, M. (2015). Working memory arrest in children with high-functioning autism compared to children with attention-deficit/hyperactivity disorder: results from a 2-year longitudinal study. *Autism: the international journal of research and practice*, 19(4), 443–450. <https://doi.org/10.1177/1362361314524844>
- Anderson, P. (2002). Assessment and development of executive function (EF) during childhood. *Child neuropsychology*, 8(2), 71-82.
- Archibald, L. D., & Gathercole, S. (2007). Nonword repetition in specific language impairment: more than a phonological short-term memory deficit. *Psychonomic Bulletin & Review*, 14(5), 919e924. doi: 910.3758/bf03194122.
- Archibald, L. M., & Gathercole, S. E. (2006). Short-term and working memory in specific language impairment. *International journal of language & communication disorders*, 41(6), 675–693. <https://doi.org/10.1080/13682820500442602>.
- Ardila, A. (2008). On the evolutionary origins of executive functions. *Brain and cognition*, 68(1), 92-99.
- Aronen, E. T., Vuontela, V., Steenari, M. -R., Salmi, J., & Carlson, S. (2005). Working memory, psychiatric symptoms, and academic performance at school. *Neurobiology of Learning and Memory*, 83, 33–42.
- Bacon, A. M., Parmentier, F. B., and Barr, P. (2013). Visuospatial memory in dyslexia: evidence for strategic deficits. *Memory*, 21, 189–209. doi:10.1080/09658211.2012.718789.

- Baddeley, A. D. (1978). The trouble with levels: A reexamination of Craik and Lockhart's framework for memory research. *Psychological Review*, 85, 139–152.
- Baddeley, A. D. (2000). The episodic buffer: a new component of working memory? *Trends in Cognitive Sciences*, 4, 17-23.
- Baddeley, A. D. (2012). Working memory theories, models, and controversies. *Annual review of psychology*, 63, 1-29.
- Baddeley, A., & Hitch, G. (1974). Working memory. In G. A. Bower (Ed.), *The psychology of learning and motivation* (pp. 47–89). New York: Academic Press.
- Baddeley, A., & Wilson, B. (1988). Frontal amnesia and the dysexecutive syndrome. *Brain and Cognition*, 7, 212–230.
- Banich, M. T. (2009). Executive function: The search for an integrated account. *Current Directions in Psychological Science*, 18(2), 89-94.
- Barendse, E. M., Hendriks, M. P., Jansen, J. F., et al. (2013). Working memory deficits in high-functioning adolescents with autism spectrum disorders: neuropsychological and neuroimaging correlates. *Journal of Neurodevelopmental Disorders*, 5: 14.
- Barkley, R. (1997). Behavioral inhibition, sustained attention, and executive functions: Constructing a unifying theory. *Psychological Bulletin*, 121, 65–94.
- Behbahani, P. A., & El-Nasr, M. S. (2011). The effect of privacy on social presence in location-based mobile games. In *International Conference on Entertainment Computing* (pp. 307-318). Springer Berlin Heidelberg.
- Beilock, S.L., & De Caro, M. S. (2007). From poor performance to success under stress: Working memory, strategy selection, and mathematical problem solving under pressure. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 33, 983–998.
- Beneventi, H., Tønnessen, F. E., Ersland, L. & Hugdahl, K. (2010). Executive working memory processes in dyslexia: Behavioral and fMRI evidence. *Scandinavian Journal of Psychology*, 51, 20–27.

Journal of Psychology, 51, 192–202. DOI: 10.1111/j.1467-9450.2010.00808.x.

Best, J. R & Miller, P. H. (2010), A developmental perspective on executive function. Child Development Perspectives 81: 1641–1660.

Best, J. R., & Miller, P. H. (2010). A developmental perspective on executive function. Child development, 81(6), 1641-1660.

Bindman, S., Pomerantz, E., Roisman, G. (2015). Children's Executive Functions Account for Associations Between Early Autonomy-Supportive Parenting and Achievement Through High School. Journal of Educational Psychology, 107(3): 756–770. doi: 10.1037/edu0000017.

Bishop, D. M. V. (2006). What causes specific language impairment in children? Current Directions in Psychological Science, 15(5), 217–221. DOI: 10.1111/j.1467-8721.2006.00439.x.

Bishop, D.V.M., & Adams, J. A. (1990). A prospective study of the relationship between specific language impairment, phonological disorders and reading retardation. Journal of Child Psychology and Psychiatry, 31, 1027–1050.

Blair, C. (2006). How similar are fluid cognition and general intelligence? A developmental neuroscience perspective on fluid cognition as an aspect of human cognitive ability. Behavioral and Brain Sciences, 29, 109–125.

Blair, C., Zelazo, P. D., & Greenberg, M. T. (2005). The measurement of executive function in early childhood. Developmental Neuropsychology, 28(2), 561–571.

Brock, L. L., Rimm-Kaufman, S. E., Nathanson, L., & Grimm, K. J. (2009). The contributions of 'hot' and 'cool' executive function to children's academic achievement, learning-related behaviors, and engagement in kindergarten. Early Childhood Research Quarterly, 24(3), 337-349.

Bryce, D., Whitebread, D., & Szűcs, D. (2015). The relationships among executive

functions, metacognitive skills and educational achievement in 5 and 7 year-old children. *Metacognition and Learning*, 10(2), 181-198.

Bull, R., & Scerif, G. (2001). Executive functioning as a predictor of children's mathematics ability: Inhibition, switching, and working memory. *Developmental Neuropsychology*, 19(3), 273–293. https://doi.org/10.1207/S15326942DN1903_3.

Bull, R., Espy, K. A., & Wiebe, S. A. (2008). Short-term memory, working memory, and executive functioning in preschoolers: Longitudinal predictors of mathematical achievement at age 7 years. *Developmental Neuropsychology*, 33(3), 205–228. <https://doi.org/10.1080/87565640801982312>.

Carlson, S. M., & Moses, L. J. (2001). Individual differences in inhibitory control and children's theory of mind. *Child development*, 72(4), 1032-1053.

Carretti, B., Borella, E., Cornoldi, C., & De Beni, R. (2009). Role of working memory in explaining the performance of individuals with specific reading comprehension difficulties: A meta-analysis. *Learning and Individual Differences*, 19(2), 246–251. <https://doi.org/10.1016/j.lindif.2008.10.002>.

Case, R. (1985). *Intellectual development: Birth to adulthood*. Academic Pr.

Case, R. (1992). Neo-Piagetian theories of child development. *Intellectual development*, 161-196.

Catts, H., Fey, M., Tomblin, J., & Zhang, X. (2002). A longitudinal investigation of reading outcomes in children with language impairments. *Journal of Speech, Language, and Hearing Research*, 45, 1142–1157.

Church, K., Hoggan, E., & Oliver, N. (2010, October). A study of mobile mood awareness and communication through MobiMood. In *Proceedings of the 6th Nordic Conference on Human-Computer Interaction: Extending Boundaries* (pp. 128-137). ACM. <https://doi.org/10.1145/1868914.1868933>.

Cleary, T. J., & Zimmerman, B. J. (2004). Self-regulation empowerment program: A

school-based program to enhance self-regulated and self-motivated cycles of student learning. *Psychology in the Schools*, 41(5), 537-550.

Collins, A., & Koechlin, E. (2012). Reasoning, learning, and creativity: frontal lobe function and human decision making. *PLoS Biology*, 10 (3). Ανακτήθηκε Αύγουστος 2, 2020, από <https://journals.plos.org/plosbiology/article/file?id=10.1371/journal.pbio.1001293&type=printable>.

Conti-Ramsden, G. (2003). Processing and linguistic markers in young children with specific language impairment (SLI). *Journal of Speech, Language, and Hearing Research*, 46(5), 1029-1037. [https://doi.org/10.1044/1092-4388\(2003/082\)](https://doi.org/10.1044/1092-4388(2003/082)).

Conti-Ramsden, G., Durkin, K., Simkin, Z., & Knox, E. (2009). Specific language impairment and school outcomes. I: identifying and explaining variability at the end of compulsory education. *International journal of language & communication disorders*, 44(1), 15–35. <https://doi.org/10.1080/13682820801921601>.

Coolidge, F. L., & Wynn, T. (2005). Working memory, its executive functions, and the emergence of modern thinking. *Cambridge archaeological Journal*, 15(1), 5-26.

Corbett, B. A., Constantine, L. J., Hendren, R., Rocke, D., & Ozonoff, S. (2009). Examining executive functioning in children with autism spectrum disorder, attention deficit hyperactivity disorder and typical development. *Psychiatry research*, 166(2), 210-222.

Couse, L. J., & Chen, D. W. (2010). A tablet computer for young children? Exploring its viability for early childhood education. *Journal of Research on Technology in Education*, 43(1), 75–96.

Crone, E. A., Somsen, R. J., Zanolie, K., & Van der Molen, M. W. (2006). A heart rate analysis of developmental change in feedback processing and rule shifting from childhood to early adulthood. *Journal of Experimental child psychology*,

95(2), 99-116.

Cuperus, J., Vugs, B., Scheper, A., Hendriks, M. (2014). Executive function behaviours in children with specific language impairment. International Journal of Developmental Disabilities 60: 132–43.

Davidson, M. C., Amso, D., Anderson, L. C., & Diamond, A. (2006). Development of cognitive control and executive functions from 4 to 13 years: Evidence from manipulations of memory, inhibition, and task switching, Neuropsychologia, 44(11), 2037-2078.

De Frias, C., Dixon, R., & Strauss, E. (2006). Structure of four executive functioning tests in healthy older adults. Neuropsychology, 20(2), 206–214.

de Urturi, Z. S., Zorrilla, A. M., & Zapirain, B. G. (2011). Serious Game based on first aid education for individuals with Autism Spectrum Disorder (ASD) using android mobile devices. In Computer Games (CGAMES), 2011 16th International Conference on (pp. 223-227). IEEE.

Deák, G. O., & Wiseheart, M. (2015). Cognitive flexibility in young children: General or task-specific capacity? Journal of Experimental Child Psychology, 138, 31–53.
<https://doi.org/10.1016/j.jecp.2015.04.003>.

Dehaene-Lambertz, G., & Spelke, E. S. (2015). The infancy of the human brain. Neuron, 88(1), 93-109.

Dempster, F. N. (1991). Inhibitory processes: a neglected dimensions of intelligence. Intelligence, 15(2), 157-173.

Diamond, A. (2013). Executive functions. Annual review of psychology, 64, 135-168.

Diamond, A. (2013). Executive functions. Annual Review of Psychology, 64(1), 135–168.
<https://doi.org/10.1146/annurev-psych-113011-143750>.

Diamond, A. (2014). Executive functions: Insights into ways to help more children thrive. Zero to three, 35(2), 9-17.

Dodwell, K., & Bavin, E. L. (2008). Children with specific language impairment: An

investigation of their narratives and memory. International Journal of Language and Communication Disorders, 43, 201–218. doi:10.1080/13682820701366147.

Drigas, A. & Papoutsi, Ch. (2015). ICTs for Assessment and Intervention on Cultivation of Empathy. International Journal of Emerging Technologies in Learning, 10, 10–15.

Drigas, A., Ioannidou, R. E., Kokkalia, G., & Lytras, M. D. (2014). ICTs, mobile learning and social media to enhance learning for attention difficulties. J. UCS, 20(10), 1499-1510.

Drigas, A. & Papoutsi, Ch. (2017). Empathy and Mobile Applications. International Journal of Interactive Mobile Technology, 11(3): 57-66.

Drigas, A., Dede, D. E. & Dedes, S. (2020). Mobile and other applications for mental imagery to improve learning disabilities and mental health. International Journal of Computer Science Issues, 17(4), 18–23. <http://doi.org/10.5281/zenodo.3987533>

Duncan, J., Emslie, H., Williams, P., Johnson, R., & Freer, C. (1996). Intelligence and the frontal lobe: the organization of goal-directed behavior. Cognitive Psychology, 30(3), 257–303.

Duncan, J., Johnson, R., Swales, M., & Freer, C. (1997). Frontal lobe deficits after head injury: Unity and diversity of function. Cognitive Neuropsychology, 14, 713–741.

Espy, K. A., & Bull, R. (2005). Inhibitory processes in young children and individual variation in short-term memory. Developmental neuropsychology, 28(2), 669-688.

Espy, K. A., Mc Diarmid, M. M., Cwik, M. F., Stalets, M. M., Hamby, A., & Senn, T. E. (2004). The contribution of executive functions to emergent mathematic skills in preschool children. Developmental Neuropsychology, 26(1), 465–486. https://doi.org/10.1207/s15326942dn2601_6

- Fernández-López, Á., Rodríguez-Fortiz, M. J., Rodríguez-Almendros, M. L., & Martínez-Segura, M. J. (2013). Mobile learning technology based on iOS devices to support students with special education needs. *Computers & Education*, 61, 77-90. <https://doi.org/10.1016/j.compedu.2012.09.014>.
- Flavell, J. H. (1976). Metacognitive aspects of problem solving. The nature of intelligence, 231-235.
- Flax, J. F., Realpe-Bonilla, T., Hirsch, L. S., Brzustowicz, L. M., Bartlett, C. W., & Tallal, P. (2003). Specific language impairment in families: Evidence for co-occurrence with reading impairments. *Journal of Speech, Language, and Hearing Research*, 46(3), 530–543. [https://doi.org/10.1044/1092-4388\(2003/043\)](https://doi.org/10.1044/1092-4388(2003/043)).
- Fletcher, J. (1996). Executive functions in children: Introduction to the special series. *Developmental Neuropsychology*, 12, 1–3.
- Forssman, L. (2012). Attention and the Early Development of Cognitive Control: Infants' and Toddlers' Performance on the A-not-B-task. Uppsala University, Department of Social Studies.
- Friedman, N.P., & Miyake, A. (2004). The relations among inhibition and interference control functions: A latent-variable analysis. *Journal of Experimental Psychology: General*, 133, 101–135.
- Friedman, P. N., Miyake, A., Young, E. S. , DeFries, C. J., Corley, P. R . & Hewitt, K. J. (2008). Individual Differences in Executive Functions Are Almost Entirely Genetic in Origin. *Journal of Experimental Psychology*, 137, 2, 201–225.
- Fuggetta, G.P. (2006). Impairment of Executive Functions in Boys with Attention Deficit/ Hyperactivity Disorder. *Child Neuropsychology*, 12, 1-21.
- Fuster, J. M. (1997). The prefrontal cortex—anatomy, physiology, and neuropsychology of the frontal lobe (3rd ed). Philadelphia: Lippincott-Raven.
- Garcia-Villamistar, D., & Sala,S.D.(2002). Dual-task performance in adults with autism. *Cognitive Neuropsychiatry*, 7, 63–74. <http://dx.doi.org/10.1080/>

13546800143000140

Garon, N., Bryson, S. E., & Smith, I. M. (2008). Executive function in preschoolers: a review using an integrative framework. *Psychological bulletin*, 134(1), 31.

Gathercole S.E., Alloway T.P., Kirkwood H.J., Elliott J.G., Holmes J., Hilton K.A. (2008) Attentional and executive function behaviours in children with poor working memory, 214-223.

Gathercole, S. (2008). Working memory in the classroom. Presented at her presidents' award lecture at the annual conference. *The Psychologist*, 21, 382–385.

Gathercole, S. E. & Baddeley, A. D. (1993). Working memory and language: Hillsdale, NJ: Lawrence Erlbaum.

Gathercole, S. E. (1998). The development of memory. *The Journal of Child Psychology and Psychiatric and Allied Disciplines*, 39(1), 3-27.

Gathercole, S. E., & Pickering, S. J. (2000). Working memory deficits in children with low achievements in the national curriculum at 7 years of age. *British Journal of Educational Psychology*, 70(2), 177–194.
<https://doi.org/10.1348/000709900158047>.

Gathercole, S. E., Lamont, E., & Alloway, T. P. (2006). Working memory in the classroom. In S. Pickering & G. Phye (Eds.), *Working memory and education* (pp. 219–240). US: Academic Press.

Gathercole, S. E., Pickering, S.J., Ambridge, B., & Wearing, H. (2004). The structure of working memory from 4 to 15 years of age. *Developmental psychology*, 40(2), 177.

Gay, G., Pollak, J. P., Adams, P., & Leonard, J. P. (2011). Pilot study of Aurora, a social, mobile-phone-based emotion sharing and recording system. *Journal of diabetes science and technology*, 5(2), 325-332.
<https://doi.org/10.1177/193229681100500219>.

- Geurts, H. M., Verte, S., Oosterlaan, J., Roeyers, H., & Sergeant, J. A. (2004). How specific are executive functioning deficits in attention deficit hyperactivity disorder and autism? *Journal of Child Psychology and Psychiatry*, 45, 836–854.
- Gillotti, L., Kenworthy, L., Sirian, S., Black, D. O., & Wagner, A. E. (2002). Adaptive skills and executive function in autism spectrum disorders. *Child Neuropsychology*, 8, 241–248.
- Gioia, G., Isquith, P., Guy, S. & Kenworthy, L. (2000). BRIEF – Behavior Rating Inventory of Executive Function. Professional manual. Odessa, FL: Psychological Assessment Resources.
- Godefroy, O., Cabaret, M., Petit-Chenal, V., Pruvo, V. P., & Rousseaux, M. (1999). Control functions of the frontal lobes: modularity of the central-supervisory system? *Cortex*, 35, 1–20.
- Goswami, U. (2008). Cognitive development: The learning brain.
- Gray S. (2003). Diagnostic accuracy and test-retest reliability of nonword repetition and digit span tasks administered to preschool children with specific language impairment. *Journal of communication disorders*, 36(2), 129–151. [https://doi.org/10.1016/s0021-9924\(03\)00003-0](https://doi.org/10.1016/s0021-9924(03)00003-0)
- Gray S. (2006). The relationship between phonological memory, receptive vocabulary, and fast mapping in young children with specific language impairment. *Journal of speech, language, and hearing research : JSLHR*, 49(5), 955–969. [https://doi.org/10.1044/1092-4388 \(2006/069\)](https://doi.org/10.1044/1092-4388 (2006/069))
- Halford, G. S., Wilson, W. H., & Phillips, S. (1998). Processing capacity defined by relational complexity: Implications for comparative, developmental, and cognitive psychology. *Behavioral and Brain Sciences*, 21(6), 803-831.
- Hari, R., & Renvall, H. (2001). Impaired processing of rapid stimulus sequences in dyslexia. *Trends in cognitive sciences*, 5(12), 525–532. [https://doi.org/10.1016/s1364-6613\(00\)01801-5](https://doi.org/10.1016/s1364-6613(00)01801-5).

- Hassan, A., Shafi, M., & Khattak, M. I. (2016). Multi-touch collaborative gesture recognition based user interfaces as behavioral interventions for children with autistic spectrum disorder: A review. *Mehran University Research Journal of Engineering & Technology*, 35(4), 543. <https://doi.org/10.22581/muet1982.1604.06>.
- Henry, J. D., & Crawford, J. R. (2004). A meta-analytic review of verbal fluency performance following focal cortical lesions. *Neuropsychology*, 18(2), 284e295. <http://dx.doi.org/10.1037/0894-4105.1018.1032.1284>.
- Henry, L. A., Messer, D. J., & Nash, G. (2012). Executive functioning in children with specific language impairment. *Journal of child psychology and psychiatry, and allied disciplines*, 53(1), 37–45. <https://doi.org/10.1111/j.1469-7610.2011.02430.x>.
- Henry, Lucy A.; Messer, David J. and Nash, Gilly (2015). Executive functioning and verbal fluency in children with language difficulties. *Learning and instruction*, 39 pp. 137–147. DOI: <https://doi.org/10.1016/j.learninstruc.2015.06.001>.
- Hongwanishkul, D., Happaney, K. R., Lee, W. S., & Zelazo, D. (2005). Assessment of hot and cool executive function in young children. Age-related changes and individual differences. *Developmental neuropsychology*, 28(2), 617-644.
- Houde, O., & Borst, G. (2014). Measuring inhibitory control in children and adults brain imaging and mental chronometry. *Frontiers in psychology*, 5, 616.
- Hughes, C., Russell, J., & Robbins, T. W. (1994). Evidence for executive dysfunction in autism. *Neuropsychologia*, 32, 477–492.
- Hughes, D. M., Turkstra, L. S., & Wulfeck, B. B. (2009). Parent and self-ratings of executive function in adolescents with specific language impairment. *International journal of language & communication disorders*, 44(6), 901–916. <https://doi.org/10.1080/13682820802425693>.
- Huizinga, M., & Smidts, D. P. (2011). Age-related changes in executive function:a normative study with the dutch version of the behavior rating

inventory of executive function (BRIEF). *Child Neuropsychology*, 17, 51–66.
DOI: 10.1080/09297049.2010.509715.

Huizinga, M., Dolan, C. V., & van der Molen, M. W. (2006). Age-related change in executive function: Developmental trends and a latent variable analysis. *Neuropsychologia*, 44(11), 2017–2036.

Hyghe, C. (1998). Executive function in preschoolers: Links with theory of mind and verbal ability. *British Journal of Developmental Psychology*, 16(2), 233–253.

Imbo, I., Vandierendonck, A. & Vergauwe, E. The role of working memory in carrying and borrowing. *Psychological Research* 71, 467–483 (2007).
<https://doi.org/10.1007/s00426-006-0044-8>

Im-Bolter, N., Johnson, J., & Pascual-Leone, J. (2006). Processing limitations in children with specific language impairment: The role of executive function. *Child Development*, 77 (6), 1822–1841.
DOI: 10.1111/j.1467-8624.2006.00976.x.

Ionescu, T. (2012). Exploring the nature of cognitive flexibility. *New Ideas in Psychology*, 30 (2), 190–200.
<https://doi.org/10.1016/j.newideapsych.2011.11.001>

Ireland, D., Farr-Wharton, G., Bradford, D.K. (2018). Social fringe dwellers: can chatbots combat bullies to improve participation for children with autism? *The Journal of Community Informatics*, 14(1), 105–119. Retrieved from <http://128.163.188.57/index.php/ciej/article/view/1454>.

Jacob, R., & Parkinson, J. (2015). The potential for school-based interventions that target executive function to improve academic achievement: A review. *Review of Educational Research*, 85(4), 512–552.B

Jeffries, S., & Everatt, J. (2004). Working memory: Its role in dyslexia and other specific learning difficulties. *Dyslexia*, 10, 196–214.

Jurado, M. B., & Rosselli, M. (2007). The elusive nature of executive functions: a review

- of our current understanding. *Neuropsychology review*, 17(3), 213-233.
- Kalantarian, H., Jedoui, K., Washington, P., & Wall, D. P. (2020). A Mobile Game for Automatic Emotion-Labeling of Images. *IEEE transactions on games*, 12(2), 213–218. <https://doi.org/10.1109/tg.2018.2877325>
- Kapa, L., Plante, E., Doubleday, K. (2017). Applying an Integrative Framework of Executive Function to Preschoolers With Specific Language Impairment. *Journal of Speech, Language, and Hearing Research*, Vol. 60, 2170–2184.
- Kazakou, M., Soulis, S., Morfidi, E., & Mikropoulos, T. A. (2011). Phonological awareness software for dyslexic children. *Themes in Science and Technology Education*, 1(4), 35–54.
- Kercood, S., Grskovic, J.A., Banda, D.R., & Begeske, J. (2014). Working memory and autism: A review of literature. *Research in Autism Spectrum Disorders*, 8, 1316-1332.
- Kimberg, D.Y., D'Esposito, M., & Farah, M.J. (1997). Cognitive functions in the prefrontal cortex: working memory and executive control. *Current Directions in Psychological Science*, 6(6), 185–192.
- Klingberg, T., Fernell, E., Olsesen, P. J., Johnson, M., Gustafsson, P., Dahlstrom, K., et al. (2005). Computerized training of working memory in children with ADHD—A randomized, controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry*, 44, 177–186.
- Knapp, K., & Morto, J.B. (2013). Brain Development and Executive Functioning. In Morton. *Executive functions*. (pp.6-11). *Encyclopedia of Early Childhood Development*.
- Kokkalia, G. & Drigas, A. (2015). Working Memory and ADHD in Preschool Education. The Role of ICT'S as a Diagnostic and Intervention Tool: An Overview. *International Journal of Emerging Technologies in Learning (iJET)*, 10(5), 4-9.

Kyllonen, P. C., & Christal, R. E. (1990). Reasoning ability is (little more than) working memory capacity? *Intelligence*, 14 (4), 389-433.

Laasonen, M., Lahti-Nuutila, P., Leppämäki, S., Tani, P., Wikgren, J., Harno, H., Oksanen-Hennah, H., Pothos, E., Cleeremans, A., Dye, M., Cousineau, D., & Hokkanen, L. (2020). Project DyAdd: Non-linguistic Theories of Dyslexia Predict Intelligence. *Frontiers in human neuroscience*, 14, 316. <https://doi.org/10.3389/fnhum.2020.00316>.

Lai, E. R. (2011). Motivation: A literature review. Person Research's Report.

Latzman, R. D., Elkovich, N., Young, J., & Clark, L. A. (2010). The contribution of executive functioning to academic achievement among male adolescents. *Journal of Clinical and Experimental Neuropsychology*, 32(5), 455–462. <https://doi.org/10.1080/13803390903164363>.

Lee, D., Frey, G., Cheng, A., & Shih, P. (2018). Puzzle Walk: A Gamified Mobile App to Increase Physical Activity in Adults with Autism Spectrum Disorder. 2018 10th International Conference on Virtual Worlds and Games for Serious Applications (VS-Games), 1-4.

Lehto, J. (1996). Are executive function tests dependent on working memory capacity? *Quarterly Journal of Experimental Psychology*, 49(1), 29–50.

Lehto, J. E., Juujarvi, P., Kooistra, L., Pulkkinen, L. (2003). Dimensions of executive functioning: Evidence from children. *British Journal of Developmental Psychology*, 21(1), 59–80.

Leonard, L. (1998). Children with specific language impairments. Cambridge, MA: MIT Press.

Lewandowski, L., Wood, W., & Miller, L. A. (2016). Technological Applications for Individuals with Learning Disabilities and ADHD. In *Computer-Assisted and Web-Based Innovations in Psychology, Special Education, and Health*. Elsevier Inc. <https://doi.org/10.1016/B978-0-12-802075-3.00003-6>.

Lezak, M. D. (1995). Neuropsychological Assessment (3rd ed.). New York: Oxford University Press.

Liao, C. C., Chen, Z. H., Cheng, H. N., Chen, F. C., & Chan, T. W. (2011). My "Mini" Pet: a handheld pet nurturing game to engage students in arithmetic practices. *Journal of Computer Assisted Learning*, 27(1), 76-89. <https://doi.org/10.1111/j.1365-2729.2010.00367.x>.

Lim, M. Y., Deshmukh, A., Janarthanam, S., Hastie, H., Aylett, R., & Hall, L. (2016). A Treasure Hunt With An Empathic Virtual Tutor. In Proceedings of the 2016 International Conference on Autonomous Agents & Multiagent Systems (pp. 1477-1478). International Foundation for Autonomous Agents and Multiagent Systems.

Lind, S. E. & Williams, D. M. (2011). Behavioural, biopsychosocial, and cognitive models of autism spectrum disorders. In: Matson J. L and Sturmey P. (eds) International Handbook of Autism and Pervasive Developmental Disorders. 1st ed. New York: Springer, pp. 99–114.

Liu, Q., Zhu, X. Ziegler, A., & Shi, J. (2015). The effects of inhibitory control training for preschoolers on reasoning ability and neural activity. *Scientific reports*, 5, 14200.

Lopez, B. R., Lincoln, A. J., Ozonoff, S., & Lai, Z. (2005). Examining the relationship between executive functions and restricted, repetitive symptoms of autistic disorder. *Journal of Autism and Developmental Disorders*, 35, 445–460. <http://dx.doi.org/10.1007/s10803-005-5035-x>.

Luciana, M., & Nelson, C. A. (1998). The functional emergence of prefrontally-guided working memory systems in four-to-eight-year-old children. *Neuropsychologia*, 36(3), 273-293.

Luciana, M., Conklin, H. M., Hooper, C. J., & Yanger, R. S. (2005). The development on nonverbal working memory and executive control processes in adolescents. *Child development*, 76(3), 697-712.

- Lum, J. A., Conti-Ramsden, G., Page, D., & Ullman, M. T. (2012). Working, declarative and procedural memory in specific language impairment. *Cortex* 48, 1138–1154. DOI: 10.1016/j.cortex.2011.06.001.
- Lunt, L., Bramham, J., Morris, R. G., Bullock, P. R., Selway, R. P., Xenitidis, K., & David, A. S. (2012). Prefrontal cortex dysfunction and “jumping to conclusions”: bias or deficit? *Journal of Neuropsychology*. 6, 65–78.
- Luo, L., Luk, G., & Bialystok, E. (2010). Effect of language proficiency and executive control on verbal fluency performance in bilinguals. *Cognition*, 114(1), 29e41. <http://dx.doi.org/10.1016/j.cognition.2009.1008.1014>.
- Ivisaker, M., Szekeres, S. & Hartwick, P. (1992). Cognitive rehabilitation following traumatic brain injury in children, in M.G. Tramontana, & S.R. Hooper (Eds), *Advances in child neuropsychology*, 168-218.
- Magalhães, S., Carneiro, L., Limpo, T., & Filipe, M. (2020). Executive functions predict literacy and mathematics achievements: The unique contribution of cognitive flexibility in grades 2, 4, and 6. *Child neuropsychology : a journal on normal and abnormal development in childhood and adolescence*, 26(7), 934–952. <https://doi.org/10.1080/09297049.2020.1740188>
- Martinussen, R., & Tannock, R. (2006). Working memory impairments in children with ADD with and without comorbid language learning disorders. *Journal of Clinical and Experimental Neuropsychology*, 28, 1073–1094.
- Marton, K. (2008). Visuo-spatial processing and executive functionsin children with specific language impairment. *InternationalJournal of Language & Communication Disorders*, 43(2), 181–200, DOI:10.1080/16066350701340719.
- Marton, K., Kelmenson, L., & Pinkhasova, M. (2007). Inhibition control andworking memory capacity in children with SLI. *Psychologia*, 50, 110–121. doi:10.2117/psysoc.2007.110.

- McCabe, D. P., Roediger, H. L., McDaniel, M. A., Balota, D. A., & Hambrick, D. Z. (2010). The relationship between working memory capacity and executive functioning: evidence for a common executive attention construct. *Neuropsychology*, 24(2), 222–243.
- McDougall, S., Hulme, C., Ellis, A., & Monk, A. (1994). Learning to read: The role of short-term memory and phonological skills. *Journal of Experimental Child Psychology*, 58, 112–133.
- McKenna, R., Rushe, T., & Woodcock, K. A. (2017). Informing the Structure of Executive Function in Children: A Meta-Analysis of Functional Neuroimaging Data. *Frontiers in human neuroscience*, 11, 154. <https://doi.org/10.3389/fnhum.2017.00154>.
- Mellies, D., & Lehalle, H. (2005). Psychologie du développement. Enfance et adolescence. Cours et exercices. Paris: Dunod.
- Meltzer, L. (Ed.). (2011). Executive function in education: From theory to practice. Guilford Press.
- Menghini, D., Finzi, A., Carlesimo, G. A., & Vicari, S. (2011). Working memory impairment in children with developmental dyslexia: is it just a phonological deficit? *Developmental neuropsychology*, 36(2), 199–213. <https://doi.org/10.1080/87565641.2010.549868>.
- Miller, C. A., Kail, R., Leonard, L. B., & Tomblin, J. B. (2001). Speed of processing in children with specific language impairment. *Journal of Speech, Language, and Hearing Research*, 44, 416–433.
- Miller, E. K., & Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annual Review of Neuroscience*, 24(1), 167–202. <https://doi.org/10.1146/annurev.neuro.24.1.167>.
- Milner, B. (1964). Some effects of frontal lobectomy in man. *The frontal granular cortex and behavior*, 313-334.

- Miyake, A., & Friedman, N. P. (2012). The nature and organization of individual differences in executive functions: Four general conclusions. *Current directions in psychological science*, 21(1), 8-14.
- Miyake, A., Friedman, N. P., Emerson, M. J., Witzki, A. H., Howerter, A., & Wager, T. D. (2000). The unity and diversity of executive functions and their contributions to complex “frontal lobe” tasks: A latent variable analysis. *Cognitive psychology*, 41(1), 49-100.
- Miyake, A., Friedman, N. P., Rettinger, D. A., Shah, P., & Hegarty, M. (2001). How are visuospatial working memory, executive functioning, and spatial abilities related? A latent-variable analysis. *Journal of Experimental Psychology: General*, 130(4), 621–640.
- Monette, S., Bigras, M., & Guay, M.-C. (2011). The role of the executive functions in school achievement at the end of grade 1. *Journal of Experimental Child Psychology*, 109(2), 158–173. <https://doi.org/10.1016/j.jecp.2011.01.008>.
- Monsell, S. (1996). Control of mental processes. In V. Bruce (Ed.), *Unsolved mysteries of the mind: Tutorial essays in cognition* (pp. 93–148). Hove, UK: Erlbaum.
- Montgomery, J. W., Magimairaj, B. M., & Finney, M. C. (2010). Working memory and specific language impairment: an update on the relation and perspectives on assessment and treatment. *American journal of speech-language pathology*, 19(1), 78–94. [https://doi.org/10.1044/1058-0360\(2009/09-0028\)](https://doi.org/10.1044/1058-0360(2009/09-0028)).
- Morasch, K. C., & Bell, M. A. (2011). The role of inhibitory control in behavioral and physiological expressions of toddler executive function. *Journal of experimental child psychology*, 108(3), 593-606.
- Morris, M. E., Kathawala, Q., Leen, T. K., Gorenstein, E. E., Guilak, F., DeLeeuw, W., & Labhard, M. (2010). Mobile therapy: case study evaluations of a cell phone application for emotional self-awareness. *Journal of medical Internet research*, 12(2), e10. <https://doi.org/10.2196/jmir.1371>.

Morton, J. B. (2013). Executive functions. Encyclopedia of Early Childhood Development.

Morton, J. B., Bosma, R., & Ansari, D. (2009). Age-related changes in brain activation associated with dimensional shifts of attention an fmri study. *Neuroimage*, 46(1), 249-256.

Munoz, R., Morales, C., Villarriel, R., Quezada, A., & Hugo, V.C. (2019). Developing a software that supports the improvement of the theory of mind in children with autism spectrum disorder.

NAEYC (2012). Technology and Interactive Media as Tools in Early Childhood Programs Serving Children from Birth through Age 8. Washington, DC: National Association for the Education of Young Children.

Nakahachi, T., Iwase, M., Takahashi, H., Honaga, E., Sekoyama, R., Ulai, S., et al. (2006). Discrepancy of performance among working memory-related tasks in autism spectrum disorders was caused by task characteristics, apart from working memory, which could interfere with task execution. *Psychiatry & Clinical Neurosciences*, 60, 312–318. <http://dx.doi.org/10.1111/j.1440-1819.2006.01507.x>

NCATE (2008). Professional Standards for the Accreditation of Teacher Preparation Institutions. Washington, DC: National Council for Accreditation of Teacher Education.

Norman, D. A., & Shallice, T. (1986). Attention to action: willed and automatic control of behavior. In R. J. Davidson, G. E. Schwartz, & D. Shapiro (Eds.), *Consciousness and self-regulation: advances in research and theory*. New York: Plenum.

Obermeyer, I. (2018). Executive function for school-age students. *SIS Quarterly Practice Connections*, 3(4), 2–5.

Oosterlaan, J., & Sergeant, J. A. (1996). Inhibition in ADHD, aggressive, and anxious children: A biologically based model of child psychopathology. *Journal of*

Abnormal Child Psychology, 24(1), 19–36.

<https://doi.org/10.1007/BF01448371>

Ozonoff, S., & McEvoy, R. E. (1994). A longitudinal study of executive function and theory of mind development in autism. *Development and Psychopathology*, 6, 415–431.

Ozonoff, S., & Strayer, D. L. (2001). Further evidence of intact working memory in autism. *Journal of Autism and Developmental Disorders*, 31, 257–263.

Ozonoff, S., Pennington, B. F., & Rogers, S.J. (1991). Executive function deficits in high-functioning autistic individuals: Relationship to theory of mind. *Journal of Child Psychology and Psychiatry*, 32, 1081–1105.

Papoutsi, C., & Drigas, A. (2017). Empathy and Mobile Applications. *International Journal of Interactive Mobile Technologies (Ijim)*, 11(3), 57–66.

Parkin, A., & Java, R. (1999). Deterioration of frontal lobe function in normal aging: influences of fluid intelligence versus perceptual speed. *Neuropsychology*, 9, 304–312.

Pascual-Leone, J. (1970). A mathematical model for the transition rule in Piaget's developmental stages. *Acta psychologica*, 32, 301-345.

Passolunghi, M. C., Mammarella, I. C., & Altoè, G. (2008). Cognitive abilities as precursors of the early acquisition of mathematical skills during first through second grades. *Developmental Neuropsychology*, 33(3), 229–250.
<https://doi.org/10.1080/87565640801982320>.

Paulesu, E., Demonet, J. F., Fazio, F., McCrory, E., Chanoine, V., Brunswick, N., et al. (2001). Dyslexia: Cultural diversity and biological unity. *Science*, 291, 2165–2167.

Pauls, L. J., & Archibald, L. M. (2016). Executive Functions in Children With Specific Language Impairment: A Meta-Analysis. *Journal of speech, language, and hearing research*: JSLHR, 59 (5), 1074–1086.

https://doi.org/10.1044/2016_JSLHR-L-15-0174.

Pelphrey, K. A., & Resnick, J. S. (2003). Working memory in infancy. *Advances in child development and behavior*, 31, 175-231.

Pennington, B. F., & Ozonoff, S. (1996). Executive functions and developmental psychopathology. *Journal of Child Psychology and Psychiatry*, 37(1), 51–87.

Pennington, B. F., & Ozonoff, S. (1996). Executive functions and developmental psychopathology. *Journal of child psychology and psychiatry, and allied disciplines*, 37(1), 51–87. <https://doi.org/10.1111/j.1469-7610.1996.tb01380.x>

Pennington, B. F., & Ozonoff, S. (1996). Executive functions and developmental psychopathology. *Journal of Child Psychology and Psychiatry*, 37(1), 51–87. <https://doi.org/10.1111/j.1469-7610.1996.tb01380.x>

Pennington, B. F., Bennetto, L., McAleer, O., & Roberts, R. J. (1996). Executive functions and working memory: Theoretical and measurement issues. In R. G. Lyon and N. A. Krasnegor (Eds.), *Attention, memory, and executive function* (pp. 327–348). Baltimore, MD: Paul H. Brookes.

Perner, J., & Lang, B. (1999). Development of theory of mind and executive control. *Trends in cognitive sciences*, 3(9), 337-344.

Poulose, M. S. (2012). Program evaluation of an executive functions intervention at a middle school setting.

Prigatano, G. P., & Gray, J. A. (2008). Predictors of performance on three developmentally sensitive neuropsychological tests in children with and without traumatic brain injury. *Brain injury*, 22(6), 491–500. <https://doi.org/10.1080/02699050802084902>

Purić, D., & Pavlović, M. (2012). Executive function of shifting: Factorial structure and relations to personality and intelligence domains. *Suvremena psihologija*, 15(2), 191-192.

- Raghubar, K. P., Barnes, M. A., & Hecht, S. A. (2010). Working memory and mathematics: A review of developmental, individual difference, and cognitive approaches. *Learning and Individual Differences*, 20(2), 110–122. <https://doi.org/10.1016/j.lindif.2009.10.005>.
- Rahman, F. A., Mokhtar, F., Alias, N. A., & Saleh, R. (2012). Multimedia elements as instructions for dyslexic children. *International Journal of Education and Information Technologies*, 6(2), 193-200.
- Rapport, M. D., Chung, K. M., Shore, G., Denney, C. B., & Isaacs, P. (2000). Upgrading the science and technology of assessment and diagnosis: laboratory and clinic-based assessment of children with ADHD. *Journal of Clinical Child and Adolescent Psychology*, 29(4), 555–568.
- Reeve, R. A., & Brown, A. L. (1985). Metacognition reconsidered: Implications for intervention research. *Journal of Abnormal Child Psychology*, 13(3), 343-356.
- Reiter, A., Tucha, O., & Lange, K. W. (2005). Executive Functions in Children with Dyslexia. *Dyslexia: An International Journal of Research and Practice*, 11(2), 116–131. <https://doi.org/10.1002/dys.289>.
- Rennie, D. A., Bull, R., & Diamond, A. (2004). Executive functioning in preschoolers: Reducing the inhibitory demands of the dimensional change card sort task. *Developmental psychology*, 26(1), 423-443.
- Roebers, C. M., Cimeli, P., Röthlisberger, M., & Neuenschwander, R. (2012). Executive functioning, metacognition, and self-perceived competence in elementary school children: An explorative study on their interrelations and their role for school achievement. *Metacognition and Learning*, 7(3), 151-173.
- Rueda, M. R., & Paz-Alonso, P. M (2013).Executive Function and Emotional Development. In Executive functions. (pp.17-21). Encyclopedia of Early Childhood Development.
- Ruff, R. M., Light, R. H., Parker, S. B., & Levin, H. S. (1997). The psychological construct of word fluency. *Brain and language*, 57(3), 394–405.

[https://doi.org/10.1006/brln.1997.1755.](https://doi.org/10.1006/brln.1997.1755)

Russell, J., Jarrold, C., & Henry, L. (1996). Working memory in children with autism and with moderate learning difficulties. *Journal of Child Psychology and Psychiatry*, 37, 673–686.

Salthouse, T. A., Atkinson, T. M., & Berish, D. E. (2003). Executive functioning as a potential mediator of age-related cognitive decline in normal adults. *Journal of Experimental Psychology: General*, 132(4), 566–594.

Salthouse, T. A., Fristoe, N. M., Guthry, K. E., & Hambrick, D. Z. (1998). Relation of task switching to speed, age, and fluid intelligence. *Psychology and aging*, 13(3), 445.

Schachar, R., & Logan, G. D. (1990). Impulsivity and inhibitory control in normal development and childhood psychopathology. *Developmental Psychology*, 26(5), 710–720. <https://doi.org/10.1037/0012-1649.26.5.710>.

Schachar, R., Tannock, R., Marriott, M., Logan, G., (1995). Deficient inhibitory control in attention deficit hyperactivity disorder. *Journal of Abnormal Child Psychology*. 23, 411–437.

Senderecka, M., Grabowska, A., Szewczyk, J., Gerc, K., & Chmylak, R. (2012). Response inhibition of children with ADHD in the stop-signal task: an event-related potential study. *International journal of psychophysiology: official journal of the International Organization of Psychophysiology*, 85 1, 93-105.

Shallice, T. (1982). Specific impairments of planning. *Philosophical Transactions of the Royal Society, Series B*, 298, 199–209.

Shallice, T., & Burgess, P. (1993). Supervisory control of action and thought selection. In A. D. Baddeley & L. Weiskrantz (Eds.), *Attention: selection, awareness, and control* (pp. 171–187). Oxford, UK: Oxford University Press.

Sinzig, J., Morsch, D., Bruning, N., Schmidt, M. H., & Lehmkuhl, G. (2008). Inhibition, flexibility, working memory and planning in autism spectrum disorders with

and without comorbid ADHD-symptoms. Child and adolescent psychiatry and mental health, 2(1), 4. <https://doi.org/10.1186/1753-2000-2-4>.

Skiada, R., Soroniati, E., Gardeli, A., & Zisis, D. (2014). EasyLexia: A Mobile Application for Children with Learning Difficulties. *Procedia Computer Science*, 27. doi: 10.1016/j.procs.2014.02.025

Smith-Spark, JH, Fisk, JE, Fawcett, AJ and Nicolson, RI (2003). Investigating the central executive in adult dyslexics: Evidence from phonological and visuospatial working memory performance. *European Journal of Cognitive Psychology*. 15 (4), pp. 567-587. <https://doi.org/10.1080/09541440340000024>.

Somsen, R. J. (2007). The development of attention regulation in the Wisconsin Card Sorting Task. *Developmental science*, 10(5), 664-680.

Sonne, T., Marshall, P., Müller, J., Obel, C., & Grønbæk, K. (2016). A follow-up study of a successful assistive technology for children with ADHD and their families. *Proceedings of IDC 2016 - The 15th International Conference on Interaction Design and Children*, 400–407. <https://doi.org/10.1145/2930674.2930704>.

Spaulding, T. J., Plante, E., & Vance, R. (2008). Sustained selective attention skills of preschool children with specific language impairment: Evidence for separate attentional capacities. *Journal of Speech, Language, and Hearing Research*, 51, 16–34.

St Clair, M. C., Pickles, A., Durkin, K., & Conti-Ramsden, G. (2011). A longitudinal study of behavioral, emotional and social difficulties in individuals with a history of specific language impairment (SLI). *Journal of communication disorders*, 44(2), 186–199. <https://doi.org/10.1016/j.jcomdis.2010.09.004>.

St Clair-Thompson, H. L., & Gathercole, S. E. (2006). Executive functions and achievements in school: Shifting, updating, inhibition, and working memory. *Quarterly Journal of Experimental Psychology*, 59(4), 745–759. <https://doi.org/10.1080/17470210500162854>.

- Stuss, D. T., & Alexander, M. P. (2000). Executive functions and the frontal lobes: A conceptual review. *Psychological Research*, 63(3–4), 289–298.
- Stuss, D. T., & Benson, D. F. (1986). The frontal lobes. New York: Raven Press.
- Swanson, H. L. (2006). Cross-sectional and incremental changes in working memory and mathematical problem solving. *Journal of Educational Psychology*, 98(2), 265–281. <https://doi.org/10.1037/0022-0663.98.2.265>.
- Swanson, H. L., & Jerman, O. (2006). Math disabilities: A selective meta-analysis of the literature. *Review of Educational Research*, 76(2), 249–274. <https://doi.org/10.3102/00346543076002249>.
- Swanson, H. L., Kehler, P., & Jerman, O. (2010). Working memory, strategy knowledge, and strategy instruction in children with reading disabilities. *Journal of learning disabilities*, 43(1), 24–47. <https://doi.org/10.1177/0022219409338743>.
- Swanson, H. L., Xinhua Zheng, & Jerman, O. (2009). Working memory, short-term memory, and reading disabilities: a selective meta-analysis of the literature. *Journal of learning disabilities*, 42(3), 260–287. <https://doi.org/10.1177/0022219409331958>.
- Swanson, H. L., Zheng, X., & Jerman, O. (2009). Working memory, short-term memory, and reading disabilities. *Journal of Learning Disabilities*, 42(3), 260–287. <https://doi.org/10.1177/0022219409331958>.
- Takacs, Z. K., Swart, E. K., & Bus, A. G. (2015). Benefits and pitfalls of multimedia and interactive features in technology-enhanced storybooks: A meta-analysis. *Review of educational research*, 85(4), 698–739. <https://doi.org/10.3102/0034654314566989>

Tarricone, P. (2011). Γνωστική Ψυχολογία, εκδόσεις Ατραπός.

Teuber, H. L. (1972). Unity and diversity of frontal lobe functions. *Acta Neurobiologiae Experimentalis* (Warsaw), 132(2), 615–656.

Thompson, J. M., Hamilton, C. J., Gray, J. M., Quinn, J. G., Mackin, P., Young, A. H., & Ferrier, I. N. (2006). Executive and visuospatial sketchpad resources in euthymic bipolar disorder: Implications for visuospatial working memory architecture. *Memory*, 14, 437–451.

Van der Sluis, S., de Jong, P. F., & van der Leij, A. (2004). Inhibition and shifting in children with learning deficits in arithmetic and reading. *Journal of Experimental Child Psychology*, 87(3), 239–266.
<https://doi.org/10.1016/j.jecp.2003.12.002>.

Van der Wildenberg, W. P., & Van der Molen, M. W. (2004). Developmental trends in simple and selective inhibition of compatible and incompatible responses. *Journal of experimental child psychology*, 87(3), 201-220.

Varvara, P., Varuzza, C., Sorrentino, A. C., Vicari, S., & Menghini, D. (2014). Executive functions in developmental dyslexia. *Frontiers in human neuroscience*, 8, 120. <https://doi.org/10.3389/fnhum.2014.00120>.

Vugs, B., Cuperus, J., Hendriks, M., & Verhoeven, L. (2013). Visuospatial working memory in specific language impairment: a meta-analysis. *Research in developmental disabilities*, 34(9), 2586–2597.
<https://doi.org/10.1016/j.ridd.2013.05.014>.

Vugs, B., Hendriks, M., Cuperus, J., and Verhoeven, L. (2014). Working memory performance and executive function behaviors in young children with SLI. *Res. Dev. Disabil.* 35, 62–74. doi: 10.1016/j.ridd.2013.10.022

Waller, R., Hyde, L., Baskin-Sommers, A., Olson S. (2017 April). Interactions between callous unemotional behaviors and executive function in early childhood predict later socioemotional functioning. *Journal of Abnormal Child Psychology*, 45(3): 597–609. doi:10.1007/s10802-016-0184-2.

- Welsh, M. C. (2002). Developmental and clinical variations in executive functions. In D. L. Molfese & V. J. Molfese (Eds.), *Developmental variations in learning: Applications to social, executive function, language, and reading skills* (p. 139–185). Lawrence Erlbaum Associates Publishers.
- White, S., Milne, E., Rosen, S., Hansen, P., Swettenham, J., Frith, U., et al. (2006). The role of sensorimotor impairments in dyslexia: A multiple case study of dyslexic children, *Developmental Science*, 9, 237–269.
- Willcutt, E. G., Pennington, B. F., Olson, R. K., Chhabildas, N., & Hulslander, J. (2005). Neuropsychological analyses of comorbidity between reading disability and attention deficit hyperactivity disorder: in search of the common deficit. *Developmental neuropsychology*, 27(1), 35–78.
https://doi.org/10.1207/s15326942dn2701_3.
- Wittke, K., Spaulding, T. J., & Schechtman, C. J. (2013). Specific language impairment and executive functioning: parent and teacher ratings of behaviour. *Am. J. Speech Lang. Pathol.* 22, 161–172. doi: 10.1044/1058-0360(2012/11-0052).
- Yeniad, N., Malda, M., Mesman, J., van IJzendoorn, M. H., & Pieper, S. (2013). Shifting ability predicts math and reading performance in children: A meta-analytical study. *Learning and Individual Differences*, 23(1), 1–9.
<https://doi.org/10.1016/j.lindif.2012.10.004>.
- Ylvisaker, M. & Feeney, T. (2002). Executive functions, self-regulation, and learned optimism in paediatric rehabilitation: a review and implications for intervention. *Pediatric Rehabilitation*, 5, 2, 51-70.
- Zelazo, P. D., & Müller, U. (2002). Executive function in typical and atypical development.
- Zillmer, E. A., & Spiers, M. V. (2001). *Principles of neuropsychology*. Belmont, CA: Wadsworth.
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into practice*, 41(2), 64-70.

Zoerner, D., Schütze, J., Kirst, S., Dziobek, I., & Lucke, U. (2016, July). Zir-kus Empathico: Mobile Training of Socio-Emotional Competences for Children with Autism. In Advanced Learning Technologies (ICALT), 2016 IEEE 16th International Conference on (pp. 448- 452). IEEE

Κωσταρίδου-Ευκλείδη, Α. (1997). Ψυχολογία της σκέψης. Αθήνα: Ελληνικά Γράμματα.

Κωτσόπουλος, Σ. (2007). Η νευροβιολογία του αυτισμού. Ψυχιατρική, 18:225–238.