

**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»**

**ΝΕΕΣ ΕΞΕΛΙΞΕΙΣ ΣΤΗΝ ΚΑΤΑΝΟΗΣΗ ΚΑΙ ΣΤΗΝ ΑΝΑΠΤΥΞΗ ΤΗΣ
ΧΑΡΙΣΜΑΤΙΚΟΤΗΤΑΣ
NEW TRENDS IN THE UNDERSTANDING AND DEVELOPMENT OF
GIFTEDNESS**

της
Κοντόσταυλου Ειρήνης - Ζωής

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:

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

2^{ος}: Σπυρίδων Ρίζος, Συνεργαζόμενος Ερευνητής Ι.Π.Τ. Ε.Κ.Ε.Φ.Ε. «ΔΗΜΟΚΡΙΤΟΣ»

3^η: Ζαχαρούλα Ταβουλάρη, Συνεργαζόμενη Ερευνήτρια Ι.Π.Τ. Ε.Κ.Ε.Φ.Ε.
«ΔΗΜΟΚΡΙΤΟΣ»

Αθήνα 2020

ΠΕΡΙΛΗΨΗ

Οι χαρισματικοί μαθητές, αν και έχουν υψηλό δείκτη νοημοσύνης και υψηλές δυνατότητες, πολλές φορές αντιμετωπίζουν αρκετές δυσκολίες και προβλήματα, για αυτόν τον λόγο συμπεριλαμβάνονται στον τομέα της Ειδικής Αγωγής. Η χαρισματικότητα είναι μια έννοια που δύσκολα μπορεί να οριστεί με έναν μόνο ορισμό, διότι υπάρχουν πολλοί συντελεστές που την επηρεάζουν, όπως είναι οι γνωστικές και μεταγνωστικές δεξιότητες, οι εκτελεστικές λειτουργίες και η συνειδητότητα. Η παρούσα έρευνα έχει ως στόχο να διερευνήσει τις νέες εξελίξεις στην κατανόηση και στην ανάπτυξη της χαρισματικότητας. Αναλύονται οι βασικές θεωρίες της χαρισματικότητας, της μεταγνώσης, των εκτελεστικών λειτουργιών και της εκπαίδευσης του εγκεφάλου (brain training). Καθώς επίσης αναλύεται και η συμβολή της χρήσης των Τεχνολογιών Πληροφορικής και Επικοινωνίας (Τ.Π.Ε.) στην εκπαίδευση των χαρισματικών, αφού οι Τ.Π.Ε. αποτελούνται από πολλές τεχνικές και εργαλεία, τα οποία μπορούν να χρησιμοποιηθούν ως τρόποι παρέμβασης στους χαρισματικούς μαθητές. Η παρούσα μελέτη αποτελεί μια βιβλιογραφική ανασκόπηση που στηρίχθηκε σε επιστημονικά άρθρα υψηλού επιπέδου. Τα αποτελέσματα έδειξαν πως η χαρισματικότητα συνδέεται στενά με την έννοια της μεταγνώσης, η οποία αποτελεί σπουδαία έννοια για την ανάπτυξη του ατόμου. Τα χαρισματικά άτομα διαθέτουν αυξημένες μεταγνωστικές δεξιότητες και είναι σε θέση να αναπτύξουν τη συνειδητότητά τους.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ: χαρισματικότητα, χαρισματικοί μαθητές, μεταγνώση, μεταγνωστικές δεξιότητες, εκτελεστικές λειτουργίες, Τ.Π.Ε.

Βιβλιογραφία

- Ahmad, M., Badusah, J., Mnasor, A.Z, & Karim, A. A. (2014). The discovery of the traits of gifted and talented students in ICT. *International Education Studies*, 7(13), 92–101. <https://doi.org/10.5539/ies.v7n13p92>
- Ameis, S. H., Blumberger, D. M., Croarkin, P. E., Mabbott, D. J., Lai, M. C., Desarkar, P., Szatmari, P., & Daskalakis, Z. J. (2020). Treatment of Executive Function Deficits in autism spectrum disorder with repetitive transcranial magnetic stimulation: A double-blind, sham-controlled, pilot trial. *Brain Stimulation*, 13(3), 539–547. <https://doi.org/10.1016/j.brs.2020.01.007>
- Anguera, J. A., Boccanfuso, J., Rintoul, J. L., Al-Hashimi, O., Faraji, F., Janowich, J., Kong, E., Larraburo, Y., Rolle, C., Johnston, E., & Gazzaley, A. (2013). Video game training enhances cognitive control in older adults. *Nature*, 501(7465), 97–101. <https://doi.org/10.1038/nature12486>
- Baars, B., (1988). *A Cognitive Theory of Consciousness*. Cambridge: Cambridge University Press.
- Baars, B., (1997). *In the Theatre of Consciousness*. Oxford: Oxford University Press.
- Baas, D., Castelijns, J., Vermeulen, M., Martens, R., & Segers, M. (2015). The relation between assessment for learning and elementary students' cognitive and metacognitive strategy use. *British Journal of Educational Psychology*, 85(1), 33–46. <https://doi.org/10.1111/bjep.12058>
- Bakar, A. Y. A. (2016). "Digital Classroom": An Innovative Teaching and Learning Technique for Gifted Learners Using ICT. *Creative Education*, 07(01), 55–61. <https://doi.org/10.4236/ce.2016.71006>
- Ballesteros, S., Mayas, J., Prieto, A., Barrera, P. T., González, C. P., De León, L. P., Reales, J. M., & Waterworth, J. A. (2015). A randomized controlled trial of brain training with non-action video games in older adults: Results of the 3-month follow-up. *Frontiers in Aging Neuroscience*, 7(MAR), 1–12. <https://doi.org/10.3389/fnagi.2015.00045>
- Barfurth, M. A., Ritchie, K. C., Irving, J. A., & Shore, B. M. (2009). International Handbook on Giftedness. *International Handbook on Giftedness*, 397–417. <https://doi.org/10.1007/978-1-4020-6162-2>
- Berger, J. L., & Karabenick, S. A. (2016). Construct Validity of Self-Reported Metacognitive Learning Strategies. *Educational Assessment*, 21(1), 19–33. <https://doi.org/10.1080/10627197.2015.1127751>

- Besnoy, K. D., Dantzler, J. A., & Siders, J. A. (2012). Creating a Digital Ecosystem for the Gifted Education Classroom. *Journal of Advanced Academics*, 23(4), 305–325. <https://doi.org/10.1177/1932202X12461005>
- Bildiren, A. (2018). Developmental characteristics of gifted children aged 0–6 years: parental observations. *Early Child Development and Care*, 188(8), 997–1011. <https://doi.org/10.1080/03004430.2017.1389919>
- Blair, C. (2017). Educating executive function. *Wiley Interdisciplinary Reviews: Cognitive Science*, 8(1–2), 1–6. <https://doi.org/10.1002/wcs.1403>
- Blair, C., Zelazo, P. D., & Greenberg, M. T. (2005). The measurement of executive function in early childhood. *Developmental Neuropsychology*, 28(2), 561–571. https://doi.org/10.1207/s15326942dn2802_1
- Blakey, E., & Carroll, D. J. (2015). A short executive function training program improves preschoolers' working memory. *Frontiers in Psychology*, 6(NOV), 1–8. <https://doi.org/10.3389/fpsyg.2015.01827>
- Bryck, R. L., & Fisher, P. A. (2012). Training the Brain Practical Applications of Neural Plasticity From the Intersection of Cognitive Neuroscience, Developmental Psychology, and Prevention Science. *American Psychologist*, 67(2), 87–100. <https://doi.org/10.1037/a0024657>
- Bunce, D. M., Flens, E. A., & Neiles, K. Y. (2010). How long can students pay attention in class? A study of student attention decline using clickers. *Journal of Chemical Education*, 87(12), 1438–1443. <https://doi.org/10.1021/ed100409p>
- Cevik, M., & Senturk, C. (2019). Multidimensional 21th century skills scale: Validity and reliability study. *Cypriot Journal of Educational Sciences*, 14(1), 11–28. <https://doi.org/10.18844/cjes.v14i1.3506>
- Chen, J., Yun Dai, D., & Zhou, Y. (2013). Enable, Enhance, and Transform: How Technology Use Can Improve Gifted Education. *Roeper Review*, 35(3), 166–176. <https://doi.org/10.1080/02783193.2013.794892>
- Cobcroft, R., Towers, S., Smith, J., & Bruns, A. (2006). *Mobile Learning in Review: Opportunities and Challenges for Learners, Teachers, and Institutions*. 21–30.
- De Frias, C. M., Dixon, R. A., & Strauss, E. (2006). Structure of four executive functioning tests in healthy older adults. *Neuropsychology*, 20(2), 206–214. <https://doi.org/10.1037/0894-4105.20.2.206>
- Demetriou, E. A., DeMayo, M. M., & Guastella, A. J. (2019). Executive Function in Autism Spectrum Disorder: History, Theoretical Models, Empirical Findings, and Potential as an Endophenotype. *Frontiers in Psychiatry*, 10(November), 1–17. <https://doi.org/10.3389/fpsyg.2019.00753>

- Dixon, F., Cassady, J., Cross, T., & Williams, D. (2005). Effects of Technology on Critical Thinking and Essay Writing Among Gifted Adolescents. *Journal of Secondary Gifted Education*, 16(4), 180–189. <https://doi.org/10.4219/jsge-2005-482>
- Drigas, A. S., & Ioannidou, R. E. (2013). ICTs in Special Education: A Review. *Communications in Computer and Information Science*, 278, 357–364. https://doi.org/10.1007/978-3-642-35879-1_43
- Drigas, A. S., & Pappas, M. A. (2017). The Consciousness-Intelligence-Knowledge Pyramid: An 8x8 Layer Model. *International Journal of Recent Contributions from Engineering, Science & IT (IJES)*, 5(3), 14. <https://doi.org/10.3991/ijes.v5i3.7680>
- Drigas, A., Karyotaki, M., & Skianis, C. (2017). Success: A 9 Layered-based Model of Giftedness. *International Journal of Recent Contributions from Engineering, Science & IT (IJES)*, 5(4), 4. <https://doi.org/10.3991/ijes.v5i4.7725>
- Drigas, A. S., Karyotaki, M., & Skianis, C. (2018). An Integrated Approach to Neuro-development, Neuroplasticity and Cognitive Improvement. *International Journal of Recent Contributions from Engineering, Science & IT (IJES)*, 6(3), 4. <https://doi.org/10.3991/ijes.v6i3.9034>
- Drigas, A., & Karyotaki, M. (2018). Mindfulness Training & Assessment and Intelligence. *International Journal of Recent Contributions from Engineering, Science & IT (IJES)*, 6(3), 70. <https://doi.org/10.3991/ijes.v6i3.9248>
- Drigas, A., & Papoutsis, C. (2018). A new layered model on emotional intelligence. *Behavioral Sciences*, 8(5), 45.
- Drigas, A. S., & Karyotaki, M. (2019). “A Layered Model of Human Consciousness.” *International Journal of Recent Contributions from Engineering, Science & IT (IJES)*, 7(3), 41. <https://doi.org/10.3991/ijes.v7i3.11117>
- Drigas, A., & Mitsea, E. (2020). The Triangle of Spiritual Intelligence, Metacognition and Consciousness. *International Journal of Recent Contributions from Engineering, Science & IT (IJES)*, 8(1), 4. <https://doi.org/10.3991/ijes.v8i1.12503>
- Efklides, A. (2019). Gifted students and self-regulated learning: The MASRL model and its implications for SRL. *High Ability Studies*, 30(1–2), 79–102. <https://doi.org/10.1080/13598139.2018.1556069>
- Elliott, R. (2003). Executive functions and their disorders. *British Medical Bulletin*, 65, 49–59.
- Emmons, R. A. (2000). International Journal for the Psychology of Religion A Case Against Spiritual Intelligence. *The International Journal for the Psychology of Religion*, 10(1), 3–26. <https://doi.org/10.1207/S15327582IJPR1001>

- Coleman, E. B., & Shore, B. (1991). Problem-Solving Processes of High and Average Performers in Physics. *Journal for the Education of the Gifted*, 14(4), 366–379. <https://doi.org/10.1177/016235329101400403>
- Cross, D. R., & Paris, S. G. (1988). Developmental and instructional analyses of children's metacognition and reading comprehension. *Journal of Educational Psychology*, 80(2), 131–142. <https://doi.org/10.1037//0022-0663.80.2.131>
- Fernández Batanero, J. M., Reyes Rebollo, M. M., & Montenegro Rueda, M. (2019). Impact of ICT on students with high abilities. Bibliographic review (2008–2018). *Computers and Education*, 137(April), 48–58. <https://doi.org/10.1016/j.compedu.2019.04.007>
- Fisher, E. L., Barton-Hulsey, A., Walters, C., Sevcik, R. A., & Morris, R. (2019). Executive functioning and narrative language in children with dyslexia. *American Journal of Speech-Language Pathology*, 28(3), 1127–1138. https://doi.org/10.1044/2019_AJSLP-18-0106
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, 34(10), 906–911. <https://doi.org/10.1002/bit.23191>
- Friedman, N. P., Miyake, A., Young, S. E., Defries, J. C., Corley, R. P., & Hewitt, J. K. (2009). *Genetic in Origin*. 137(2), 201–225. <https://doi.org/10.1037/0096-3445.137.2.201.Individual>
- Friston, K. (2018). Am i self-conscious? (or does self-organization entail self-consciousness?). *Frontiers in Psychology*, 9(APR), 1–10. <https://doi.org/10.3389/fpsyg.2018.00579>
- Gagné, F. (1999). Gagné's Differentiated Model of Giftedness and Talent (DMGT). *Journal for the Education of the Gifted*, 22(2), 230–234. <https://doi.org/10.1177/016235329902200209>
- Gagné, F. (2000). Understanding the Complex Choreography of Talent Development Through DMGT-Based Analysis. *International Handbook of Giftedness and Talent*, October, 67–79. <https://doi.org/10.1016/b978-008043796-5/50005-x>
- Gagné, F. (2004). Transforming gifts into talents: The DMGT as a developmental theory. *High Ability Studies*, 15(2), 119–147. <https://doi.org/10.1080/1359813042000314682>
- Gardner, H. (1987). The theory of multiple intelligences. *Annals of Dyslexia*, 37(1), 19–35. <https://doi.org/10.1007/BF02648057>
- Gardner, H., & Hatch, T. (1989). Educational Implications of the Theory of Multiple Intelligences. *Educational Researcher*, 18(8), 4–10. <https://doi.org/10.3102/0013189X018008004>

- Gallant, S. N. (2016). Mindfulness meditation practice and executive functioning: Breaking down the benefit. *Consciousness and Cognition*, 40, 116–130. <https://doi.org/10.1016/j.concog.2016.01.005>
- Goleman, D. (2001). Emotional intelligence: Issues in paradigm building. In C. Cherniss & D. Goleman (Eds). *The emotionally intelligence workplace*. 13-16. San Francisco: Jossey Bass.
- Graham, T., & Schraw, G. (1997). Helping gifted students develop metacognitive awareness. *Roeper Review*, 20(1), 4–8. <https://doi.org/10.1080/02783199709553842>
- Green, C. S., & Bavelier, D. (2003). Action video game modifies visual selective attention. *Nature*, 423(6939), 534–537. <https://doi.org/10.1038/nature01647>
- Gross, M. U. M. (2006). Exceptionally gifted children: Long-term outcomes of academic acceleration and nonacceleration. *Journal for the Education of the Gifted*, 29(4), 404–429. <https://doi.org/10.4219/jeg-2006-247>
- Hardy, J. L., Nelson, R. A., Thomason, M. E., Sternberg, D. A., Katovich, K., Farzin, F., & Scanlon, M. (2015). Enhancing cognitive abilities with comprehensive training: A large, online, randomized, active-controlled trial. *PLoS ONE*, 10(9), 1–17. <https://doi.org/10.1371/journal.pone.0134467>
- Heller, K. A. (2005). The Munich Model of Giftedness and Its Impact on Identification and Programming. *Gifted and Talented International*, 20(1), 30–36. <https://doi.org/10.1080/15332276.2005.11673055>
- Heller, K. A. (2013). Findings from the Munich longitudinal study of giftedness and their impact on identification, gifted education and counseling. *Talent Development and Excellence*, 5(1), 51–64.
- Hook, P. (2004). ICT and Learning: The iPaint Experience. *Computers in New Zealand Schools*, 16 (3), pp.15-21.
- Jamali, U. A. Y. (2019). Fostering creativity using robotics among gifted primary school students. *Gifted and Talented International*, 34(1–2), 71–78. <https://doi.org/10.1080/15332276.2020.1711545>
- Jaynes, E. T. (1957). Information theory and statistical mechanics. *Physical review*, 106(4), 620. <https://doi.org/10.1103/PhysRev.106.620>
- Jolly, J. L. (2008). Lewis Terman: Genetic Study of Genius- Elementary School Students. *Gifted Child Today*, 31(1), 27–33.
- Jurado, M. B., & Rosselli, M. (2007). The elusive nature of executive functions: A review of our current understanding. *Neuropsychology Review*, 17(3), 213–233. <https://doi.org/10.1007/s11065-007-9040-z>

- Kahveci, M. (2010). Students' perceptions to use technology for learning: Measurement integrity of the modified Fennema-Sherman attitudes scales. *Turkish Online Journal of Educational Technology*, 9(1), 185–201.
- Kak, A., Gautam, A., & Kak, S. (2016). A three-layered model for consciousness states. *NeuroQuantology*, 14(2), 166–174. <https://doi.org/10.14704/nq.2016.14.2.935>
- Kandlhofer, M., Steinbauer, G., Menzinger, M., Halatschek, R., Kemeny, F., & Landerl, K. (2019). MINT-Robo: Empowering Gifted High School Students with Robotics. *Proceedings - Frontiers in Education Conference, FIE, 2019-October*. <https://doi.org/10.1109/FIE43999.2019.9028478>
- Kim, B., Park, H., & Baek, Y. (2009). Not just fun, but serious strategies: Using meta-cognitive strategies in game-based learning. *Computers and Education*, 52(4), 800–810. <https://doi.org/10.1016/j.compedu.2008.12.004>
- Kim, M. (2016). A Meta-Analysis of the Effects of Enrichment Programs on Gifted Students. *Gifted Child Quarterly*, 60(2), 102–116. <https://doi.org/10.1177/0016986216630607>
- Koch C. (2018). What Is Consciousness? *Nature*, 557: 8-12, https://doi.org/10.1007/0-387-25244-4_1
- Korpa, T., Skaloumbakas, C., Katsounas, M., Papadopoulou, P., Lytra, F., Karagianni, S., & Pervanidou, P. (2020). EF train: Development of an executive function training program for preschool and school-aged children with ADHD. *International Journal of Psychology and Psychological Therapy*, 20(1), 13–27.
- Κουτσελίνη, Μ. & Αγαθαγγέλου, Σ. (2009). Διαφοροποίηση Διδασκαλίας: Η Κοινωνική, η ακαδημαϊκή και η διδακτική πτυχή. Στο ΕΠΑ (2009). Τιμές Ένεκεν Μ.Ι.Μαραθεύτη, σ. 277-303.
- Ku, K. Y. L., & Ho, I. T. (2010). Metacognitive strategies that enhance critical thinking. *Metacognition and Learning*, 5(3), 251–267. <https://doi.org/10.1007/s11409-010-9060-6>
- Kuhn, D., & Dean, D. (2004). Metacognition: A Bridge Between. *Theory into Practice*, 43(4), 268–274. <https://doi.org/10.1207/s15430421tip4304>
- Landau, S. M., Harvey, D., Madison, C. M., Koeppe, R. A., Reiman, E. M., Foster, N. L., Weiner, M. W., & Jagust, W. J. (2011). Associations between cognitive, functional, and FDG-PET measures of decline in AD and MCI. *Neurobiology of Aging*, 32(7), 1207–1218. <https://doi.org/10.1016/j.neurobiolaging.2009.07.002>
- Leana-Tascilar, M. Z., Ozuaprak, M., & Yilmaz, O. (2016). An Online Training Program for Gifted Children's Parents in Turkey. *Eurasian Journal of Educational Research*, 16(65), 1–35. <https://doi.org/10.14689/ejer.2016.65.09>

- Lee, M. D., Steyvers, M., De Young, M., & Miller, B. (2012). Inferring Expertise in Knowledge and Prediction Ranking Tasks. *Topics in Cognitive Science*, 4(1), 151–163. <https://doi.org/10.1111/j.1756-8765.2011.01175.x>
- Lezak, M. D. (1982). Assessing Executive Functions. *International Journal of Psychology*, 17(1–4), 281–297. <https://doi.org/10.1080/00207598208247445>
- Λόξα Γ. (2004). Οδηγίες για τους εκπαιδευτικούς πρωτοβάθμιας και δευτεροβάθμιας εκπαίδευση. Η εκπαίδευση των μαθητών με ιδιαίτερες νοητικές ικανότητες και ταλέντα. Αθήνα: ΥΠΕΠΘ.
- Manning, S. (2006). Recognizing Gifted Students: A Practical Guide for Teachers. *Kappa Delta Pi Record*, 42(2), 64–68. <https://doi.org/10.1080/00228958.2006.10516435>
- Marcovitch, S., & Zelazo, P. D. (2009). *A hierarchical competing systems model of the emergence and early development of executive function. 1*, 1–18. <https://doi.org/10.1111/j.1467-7687.2008.00754.x>
- Martinez, M. E. (2006.). *What Is Metacognition?* Phi Delta Kappan, 87, (9), 696-699.
- Maslow, A. (1965). Self-actualization and beyond. *Conference of the Training of Counselors of Adults*, 1–27. <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED012056&site=ehost-live>
- Maslow, A. H. (1969). Various meanings of transcendence. *The Journal of Transpersonal Psychology*, 1(1), 56.
- Ματσαγγούρας, Η. (2008). Εκπαιδεύοντας Παιδιά Υψηλών Ικανοτήτων Μάθησης: Διαφοροποιημένη Συνεκπαίδευση. Αθήνα: Gutenberg.
- Mayer, R. E., Parong, J., & Bainbridge, K. (2019). Young adults learning executive function skills by playing focused video games. *Cognitive Development*, 49(July 2018), 43–50. <https://doi.org/10.1016/j.cogdev.2018.11.002>
- Mitsea, E., & Drigas, A. (2019). A journey into the metacognitive learning strategies. *International Journal of Online and Biomedical Engineering*, 15(14). <https://doi.org/10.3991/IJOE.V15I14.11379>
- Mitsea, E., Lytra, N., Akrivopoulou, A., & Drigas, A. (2020). *Metacognition , Mindfulness and Robots for Autism Inclusion Metacognition , Mindfulness and Robots for Autism Inclusion. June*. <https://doi.org/10.3991/ijes.v8i2.14213>
- 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. <https://doi.org/10.1006/cogp.1999.0734>

- Mooij, T. (2007). Design of educational and ICT conditions to integrate differences in learning: Contextual learning theory and a first transformation step in early education. *Computers in Human Behavior*, 23(3), 1499–1530. <https://doi.org/10.1016/j.chb.2005.07.004>
- Mooij, T. (2013). Designing instruction and learning for cognitively gifted pupils in preschool and primary school. *International Journal of Inclusive Education*, 17(6), 597–613. <https://doi.org/10.1080/13603116.2012.696727>
- Morawska, A., & Sanders, M. (2009). An evaluation of a behavioural parenting intervention for parents of gifted children. *Behaviour Research and Therapy*, 47(6), 463–470. <https://doi.org/10.1016/j.brat.2009.02.008>
- O'Brien, B. (2007). *Gifted geeks: The emergence and development of computer technology talent*. 253. <http://gradworks.umi.com/32/67/3267198.html>
- O'Brien, B., Friedman-Nimz, R., Lacey, J., & Denson, D. (2005). From bits and bytes to C++ and Web sites. *Gifted Child Today*, 28(3), 56–64.
- Olenchak, F. R., & Renzulli, J. S. (1989). The Effectiveness of the Schoolwide Enrichment Model on Selected Aspects of Elementary School Change. *Gifted Child Quarterly*, 33(1), 36–46. <https://doi.org/10.1177/001698628903300106>
- Pahor, A., Jaeggi, S. M., & Seitz, A. (2018). *Brain Training*. In: eLS. John Wiley & Sons, Chichester.
- Pappas, M. A., & Drigas, A. S. (2019). Computerized training for neuroplasticity and cognitive improvement. *International Journal of Engineering Pedagogy*, 9(4), 50–62. <https://doi.org/10.3991/ijep.v9i4.10285>
- Passler, M. A., Isaac, W., & Hynd, G. W. (1985). Neuropsychological Development of Behavior Attributed to Frontal Lobe Functioning in Children. *Developmental Neuropsychology*, 1(4), 349–370. <https://doi.org/10.1080/87565648509540320>
- Patterson, R. E., Blaha, L. M., Grinstein, G. G., Liggett, K. K., Kaveney, D. E., Sheldon, K. C., Havig, P. R., & Moore, J. A. (2014). A human cognition framework for information visualization. *Computers and Graphics (Pergamon)*, 42(1), 42–58. <https://doi.org/10.1016/j.cag.2014.03.002>
- Periathiruvadi, S., & Rinn, A. N. (2012). Technology in gifted education: A review of best practices and empirical research. *Journal of Research on Technology in Education*, 45(2), 153–169. <https://doi.org/10.1080/15391523.2012.10782601>
- Perkins, dn, & Salomon, G. (1989). Are Cognitive Skills Context-Bound? *Educational Researcher*, 18(1), 16–25. <https://doi.org/10.3102/0013189X018001016>

- Rabipour, S., & Davidson, P. S. R. (2015). Do you believe in brain training? A questionnaire about expectations of computerised cognitive training. *Behavioural Brain Research*, 295, 64–70.
<https://doi.org/10.1016/j.bbr.2015.01.002>
- Raes, A., Vanneste, P., Pieters, M., Windey, I., Noortgate, W. Van Den, & Depaepe, F. (2020). Computers & Education Learning and instruction in the hybrid virtual classroom : An investigation of students ' engagement and the effect of quizzes. *Computers & Education*, 143(September 2019), 103682.
<https://doi.org/10.1016/j.compedu.2019.103682>
- Ramli, R., Md. Yunus, M., & Ishak, N. M. (2011). Robotic teaching for Malaysian gifted enrichment program. *Procedia - Social and Behavioral Sciences*, 15, 2528–2532. <https://doi.org/10.1016/j.sbspro.2011.04.139>
- Renzulli J.S. (1986). The three-ring conception of giftedness: A developmental model for creative productivity. *Conceptions of Giftedness*, 53–92.
- Renzulli, J. S. (1990). A practical system for identifying gifted and talented students. *Early Child Development and Care*, 63(1), 9–18.
<https://doi.org/10.1080/0300443900630103>
- Renzulli, J. S. (2012). Reexamining the Role of Gifted Education and Talent Development for the 21st Century: A Four-Part Theoretical Approach. *Gifted Child Quarterly*, 56(3), 150–159. <https://doi.org/10.1177/0016986212444901>
- Rivers, W. P. (2001). Autonomy at all costs: An ethnography of metacognitive self-assessment and self-management among experienced language learners. *Modern Language Journal*, 85(2), 279–290. <https://doi.org/10.1111/0026-7902.00109>
- Ρίζος, Σπυρίδων (2011). «Η περίπτωση των χαρισματικών παιδιών: απόψεις των εκπαιδευτικών της πρωτοβάθμιας εκπαίδευσης σε θέματα αναγνώρισης και διαχείρισης της διαφορετικότητας των παιδιών αυτών.» Διδακτορική διατριβή. Αθήνα: Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών (ΕΚΠΑ).
- Rogers, C. R. (1974). A Theory of Therapy and Personality Change: As Developed in the Client-Centered Framework. *Perspectives in Abnormal Behavior*, 341–351.
<https://doi.org/10.1016/b978-0-08-017738-0.50039-9>
- Rowley, J. (2007). The wisdom hierarchy: Representations of the DIKW hierarchy. *Journal of Information Science*, 33(2), 163–180.
<https://doi.org/10.1177/0165551506070706>
- Royall, D. R., Lauterbach, E. C., Cummings, J. L., Reeve, A., Rummans, T. A., Kaufer, D. I., LaFrance, Jr., W. C., & Coffey, C. E. (2002). Executive Control Function. *The Journal of Neuropsychiatry and Clinical Neurosciences*, 14(4), 377–405.
<https://doi.org/10.1176/jnp.14.4.377>

- Sarıcam, H., & Ogurlu, U. (2015). Metacognitive awareness and math anxiety in gifted students. *Cypriot Journal of Educational Sciences*, 10(4), 2. <https://doi.org/10.18844/cjes.v10i4.154>
- Sharples, M., Taylor, J., & Vavoula, G. (2005). *Towards a theory of mobile learning*. In H. van der Merwe & T. Brown, Mobile technology: The future of learning in your hands, mLearn 2005 Book of Abstracts. Cape Town, South Africa: mLearn 2005.
- Sharples, M., Arnedillo-Sánchez, I., Milrad, M., & Vavoula, G. (2009). Mobile learning: Small devices, big issues. In S. Ludvigsen, N. Balacheff, T. D. Jong, A. Lazonder, & S. Barnes (Eds.), *Technology-enhanced learning: Principles and products* (pp. 233–249). Berlin, Germany: Springer-Verlag.
- Schraw, G., Crippen, K. J., & Hartley, K. (2006). Promoting self-regulation in science education: Metacognition as part of a broader perspective on learning. *Research in Science Education*, 36(1–2), 111–139. <https://doi.org/10.1007/s11165-005-3917-8>
- Schraw, G., & Moshman, D. (1995). Metacognitive theories. *Educational Psychology Review*, 7(4), 351–371. <https://doi.org/10.1007/BF02212307>
- Schwartz, C. L. (2016). *Teachers' Perceptions of the Effectiveness of Academic Acceleration Recommended Citation*. <http://mds.marshall.edu/etd>
- Sheffield, C. C. (2007). Technology and the gifted adolescent: Higher order thinking, 21st century literacy, and the digital native. *Meridian*, 10(2).
- Shore, B. M., & Kanevsky, L. (1993). Thinking processes: Being and becoming the gifted. *International Handbook of Research and Development of Giftedness and Talent, January 1993*, 133–147.
- Short, M. M., Mazmanian, D., Ozen, L. J., & Bédard, M. (2015). Four days of mindfulness meditation training for graduate students: A pilot study examining effects on mindfulness, self-regulation, and executive function. *The Journal of Contemplative Inquiry*, 2(1), 37–48. <http://journal.contemplativeinquiry.org/index.php/joci/article/view/13>
- Siegle, D. (2004). Identifying Students with Gifts and Talents in Technology. *Gifted Child Today*, 27(4), 30–33. <https://doi.org/10.4219/gct-2004-146>
- Siegle, D. (2015). Technology: Learning Can Be Fun and Games. *Gifted Child Today*, 38(3), 192–197. <https://doi.org/10.1177/1076217515583744>
- Silverstein, M. J., Faraone, S. V., Leon, T. L., Biederman, J., Spencer, T. J., & Adler, L. A. (2020). The Relationship Between Executive Function Deficits and DSM-5-Defined ADHD Symptoms. *Journal of Attention Disorders*, 24(1), 41–51. <https://doi.org/10.1177/1087054718804347>

- Smith, J. "Self-Consciousness", The Stanford Encyclopedia of Philosophy (Fall 2017 Edition), Edward N. Zalta (ed.),
<https://plato.stanford.edu/archives/fall2017/entries/self-consciousness/>
- Snyder, K. E., Nietfeld, J. L., & Linnenbrink-Garcia, L. (2011). Giftedness and metacognition: A short-term longitudinal investigation of metacognitive monitoring in the classroom. *Gifted Child Quarterly*, 55(3), 181–193.
<https://doi.org/10.1177/0016986211412769>
- Solano, C. H. (1987). Stereotypes of social isolation and early burnout in the gifted: Do they still exist? *Journal of Youth and Adolescence*, 16(6), 527–539.
<https://doi.org/10.1007/BF02138819>
- Southern, W. T., & Jones, E. D. (2015). Types of acceleration: Dimension and issues. In S. G. Assouline, N. Colangelo, & J. Van Tassel-Baska (Eds.), *A nation empowered: Evidence trumps the excuses holding back America's brightest students*, vol. 2, pp. 5-12. Iowa City: University of Iowa.
- Sternberg, R. J. (1984). Toward a triarchic theory of human intelligence. *Behavioral and Brain Sciences*, 7(2), 269–287.
<https://doi.org/10.1017/S0140525X00044629>
- Sternberg, R. J. (2004). Introduction to Definitions and Conceptions of Giftedness. *Gifted Child Quarterly*, 4–7.
- Sternberg, R. J., & Grigorenko, E. L. (2004). Successful intelligence in the classroom. *Theory into Practice*, 43(4), 274–280. <https://doi.org/10.1353/tip.2004.0049>
- Stuss, D. T., Binns, M. A., Murphy, K. J., & Alexander, M. P. (2002). Dissociations within the anterior attentional system: Effects of task complexity and irrelevant information on reaction time speed and accuracy. *Neuropsychology*, 16(4), 500–513. <https://doi.org/10.1037/0894-4105.16.4.500>
- Swan, B., Coulombe-Quach, X. L., Huang, A., Godek, J., Becker, D., & Zhou, Y. (2015). Meeting the Needs of Gifted and Talented Students: Case Study of a Virtual Learning Lab in a Rural Middle School. *Journal of Advanced Academics*, 26(4), 294–319. <https://doi.org/10.1177/1932202X15603366>
- Tan, L. S., Ponnusamy, L. D., Lee, S. S., Koh, E., Koh, L., Tan, J. Y., Tan, K. C. K., & Chia, T. T. S. A. (2020). Intricacies of designing and implementing enrichment programs for high-ability students. *Gifted Education International*, April, 026142942091746. <https://doi.org/10.1177/0261429420917469>
- Terman, L. M. (1954). The discovery and encouragement of exceptional talent. *American Psychologist*, 9(6), 221–230. <https://doi.org/10.1037/h0060516>

- Thomson, D. L. (2010). Beyond the Classroom Walls: Teachers' and Students' Perspectives on How Online Learning Can Meet the Needs of Gifted Students. *Journal of Advanced Academics*, 21(4), 662–712.
- Thurstone, L. L. (1938). Primary mental abilities. Chicago: University of Chicago Press http://www.worldcat.org/title/pma-primary-mental-abilities/oclc/8067751&referer=brief_results
- Tomlinson, C.A. (2004), Διαφοροποίηση της εργασίας στην αίθουσα διδασκαλίας, Αθήνα: Εκδόσεις Γρηγόρης.
- Tortop, H. S. (2015). A comparison of gifted and non-gifted students' self-regulation skills for science learning. *Journal for the Education of Gifted Young Scientists*, 3(1), 42–57. <https://doi.org/10.17478/JEGYS.2015112017>
- Traverso, L., Viterbori, P., & Usai, M. C. (2015). Improving executive function in childhood: Evaluation of a training intervention for 5-year-old children. *Frontiers in Psychology*, 6(APR), 1–14. <https://doi.org/10.3389/fpsyg.2015.00525>
- Traxler, J. (2007). Defining, discussing, and evaluating mobile learning: The moving finger writes and having write. *International Review of Research in Open and Distance Learning*, 8 (2), pp.1-12.
- Τσιάμης, Α. (2005). Τα χαρισματικά παιδιά ζουν ανάμεσά μας: Ανακαλύπτοντας τα ίδια και τις ανάγκες τους. Αθήνα: Εκδόσεις Γρηγόρη.
- Josef, T. (2014). IBSE and Gifted Students. *Science Education International*, 25(1), 19–28. <https://doi.org/10.1128/jmbe.v20i1.1785>
- Vantassel-baska, J. (1992). Educational Decision. *Gifted Child Quarterly*, 36(2), 68–72.
- Vaitl, D., Gruzelier, J., Jamieson, G. A., Lehmann, D., Ott, U., Sammer, G., Strehl, U., Birbaumer, N., Kotchoubey, B., Kübler, A., Miltner, W. H. R., Pütz, P., Strauch, I., Wackermann, J., & Weiss, T. (2005). Psychobiology of altered states of consciousness. *Psychological Bulletin*, 131(1), 98–127. <https://doi.org/10.1037/0033-2909.131.1.98>
- Van Heugten, C. M., Ponds, R. W. H. M., & Kessels, R. P. C. (2016). Brain training: hype or hope? *Neuropsychological Rehabilitation*, 26(5–6), 639–644. <https://doi.org/10.1080/09602011.2016.1186101>
- Vogelaar, B., Bakker, M., Hoogeveen, L., & Resing, W. C. M. (2017). Dynamic testing of gifted and average-ability children's analogy problem solving: Does executive functioning play a role? *Psychology in the Schools*, 54(8), 837–851. <https://doi.org/10.1002/pits.22032>

- Volckaert, A. M. S., & Noël, M. P. (2015). Training executive function in preschoolers reduce externalizing behaviors. *Trends in Neuroscience and Education*, 4(1–2), 37–47. <https://doi.org/10.1016/j.tine.2015.02.001>
- Wagaba, F., Treagust, D. F., Chandrasegaran, A. L., & Won, M. (2016). Using metacognitive strategies in teaching to facilitate understanding of light concepts among year 9 students. *Research in Science and Technological Education*, 34(3), 253–272. <https://doi.org/10.1080/02635143.2016.1144051>
- Wallace, P. (2005). Distance education for gifted students: Leveraging technology to expand academic options. *High Ability Studies*, 16(1), 77–86. <https://doi.org/10.1080/13598130500115288>
- Wang, A. I., & Tahir, R. (2020). The effect of using Kahoot! for learning – A literature review. *Computers and Education*, 149(May 2019), 103818. <https://doi.org/10.1016/j.compedu.2020.103818>
- Wells, D. (2012). Computing in schools: time to move beyond ICT? *Research in Secondary Teacher Education*, 2(1), 8–13. <http://dspace.uel.ac.uk/jspui/handle/10552/1565>
- Wilber, K. (2001). A theory of everything: An integral vision for business, politics, science and spirituality. Shambhala publications.
- Williams, R., Zimmerman, D., Zumbo, B., & Ross, D. (2003). Charles Spearman: British Behavioral Scientist. *Human Nature Review*, 3(2003), 114–118. <http://www.mendeley.com/research/charles-spearman-british-behavioral-scientist/>
- Winne, P. H. (2019). Self-regulated learning in research with gifted learners. *High Ability Studies*, 30(1–2), 277–287. <https://doi.org/10.1080/13598139.2019.1622224>
- Wolinsky, F. D., Unverzagt, F. W., Smith, D. M., Jones, R., Stoddard, A., & Tennstedt, S. L. (2006). The ACTIVE cognitive training trial and health-related quality of life: Protection that lasts for 5 years. *Journals of Gerontology - Series A Biological Sciences and Medical Sciences*, 61(12), 1324–1329. <https://doi.org/10.1093/gerona/61.12.1324>
- Yun, K., Chung, D., Jang, B., Kim, J. H., & Jeong, J. (2011). Mathematically gifted adolescents have deficiencies in social valuation and mentalization. *PLoS ONE*, 6(4), 3–7. <https://doi.org/10.1371/journal.pone.0018224>
- Zhang, L., & Sternberg, R. J. (1995). Pentagonal Implicit Theory. *Gifted Child Quarterly*, 39(2), 88–94. <https://doi.org/10.1177/001698629503900205>

Zelazo, P. D. (2015). Executive function: Reflection, iterative reprocessing, complexity, and the developing brain. *Developmental Review*, 38, 55–68.
<https://doi.org/10.1016/j.dr.2015.07.001>