

**‘Specialization in ICTs and Special Education: Psychopedagogy of
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Institute**

METACOGNITION, CONSCIOUSNESS, GIFTEDNESS

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ABSTRACT

Giftedness has been determined by many important researchers, defining the main characteristics of gifted individuals and the consisting traits of this notion. Factors that contribute for giftedness to emerge and develop further, are the ones of cognitive and metacognitive abilities, which are supported by the executive functions of the brain. Furthermore, another component of giftedness is the notion of consciousness, in the way of someone being aware of the level that he/she belongs to, e.g. on Blooms taxonomy of knowledge, or on Drigas & Pappas taxonomy, and his/her endeavour to transcend from one level to the upper one. This survey has been conducted in order to investigate the relation between the notions of metacognition and consciousness, the interaction between them and its contribution to the rise and evolvement of giftedness. The results showed that the above notions are interrelated in a triangle relation.

Key words: cognitive, metacognitive abilities, executive functions, consciousness, giftedness, interaction

REFERENCES

- Ambrose, D., & Sternberg, R. J. (Eds.). (2016). *Giftedness and talent in the 21st century: Adapting to the turbulence of globalization*(Vol. 10). Springer.
- Αντωνίου, Κ. (2013) Ψηφιακά παιχνίδια ως εργαλεία γνωστικής άσκησης: Το παιχνίδι MemoCard, Αριστοτέλειο Πανεπιστήμιο, Τμήμα Πληροφορικής, Θεσσαλονίκη
- Antony, M. V. (2001). Is ‘consciousness’ ambiguous?. *Journal of Consciousness Studies*,8(2), 19-44.
- Atkinson, R. C., & Shiffrin, R. M. (1971). The control of short-term memory. *Scientific American*,225(2), 82-91.
- Baddeley, A. (1992). Working memory. *Science*, 255(5044), 556-559.
- Baddeley, A. D., & Hitch, G. (1974). Working memory. In *Psychology of learning and motivation* (Vol. 8, pp. 47-89). Academic press.
- Bandura, A. (2010). Self-efficacy. *The Corsini encyclopedia of psychology*, 1-3.
- Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational psychologist*, 28(2), 117-148.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational behavior and human decision processes*, 50(2), 248-287.
- Baumeister, R. F. (2008). Free will, consciousness, and cultural animals. *Are we free*, 65-85.

- Baumeister, R. F., Schmeichel, B. J., & Vohs, K. D. (2007). Self-regulation and the executive function: The self as controlling agent. *Social psychology: Handbook of basic principles*, 2, 516-539.
- Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current directions in psychological science*, 16(6), 351-355.
- Biederman, I. (1987). Recognition-by-components: a theory of human image understanding. *Psychological review*, 94(2), 115.
- Biela, A. (2014). Paradigm of Unity as a Prospect for Research and Treatment in Psychology. *Journal for Perspectives of Economic Political and Social Integration*, 19(1-2), 207-227.
- Binder M.D., Hirokawa N., Windhorst U. (Eds). (2009). *Encyclopedia of Neuroscience: Visual Cognition*. Springer, Berlin, Heidelberg.
- Block, N. (1995). Some concepts of consciousness. *Sciences*, 18(2).
- Boyatzis, R. E., Goleman, D., & Rhee, K. (2000). Clustering competence in emotional intelligence: Insights from the Emotional Competence Inventory (ECI). *Handbook of emotional intelligence*, 99(6), 343-362.
- Brewer, W. F. (1977). Memory for the pragmatic implications of sentences. *Memory & Cognition*, 5(6), 673-678.
- Chalmers, D. J. (1996). *The conscious mind: In search of a fundamental theory*. Oxford university press.

- Chan, R. C., Shum, D., Touloupoulou, T., & Chen, E. Y. (2008). Assessment of executive functions: Review of instruments and identification of critical issues. *Archives of clinical neuropsychology*, 23(2), 201-216.
- Chun, M. M., Golomb, J. D., & Turk-Browne, N. B. (2011). A taxonomy of external and internal attention. *Annual review of psychology*, 62, 73-101.
- Cleeremans, A., & Frith, C. (2003). *The unity of consciousness*. Oxford: Oxford University Press.
- Cohen, M. A., Cavanagh, P., Chun, M. M., & Nakayama, K. (2012). The attentional requirements of consciousness. *Trends in cognitive sciences*, 16(8), 411-417.
- Collins, A., & Koechlin, E. (2012). Reasoning, learning, and creativity: frontal lobe function and human decision-making. *PLoS biology*, 10(3), e1001293.
- Costantini, S. (2002). Meta-reasoning: a survey. In *Computational Logic: Logic Programming and Beyond* (pp. 253-288). Springer, Berlin, Heidelberg.
- Cragg, L., & Gilmore, C. (2014). Skills underlying mathematics: The role of executive function in the development of mathematics proficiency. *Trends in neuroscience and education*, 3(2), 63-68.
- 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.
- Δαβάζογλου-Σιμοπούλου, Α. (1999). Τα χαρισματικά παιδιά στην εκπαίδευση. *Αλεξανδρούπολη: Εκδόσεις της ίδιας*.

- Demetriou, A., & Raftopoulos, A. (1999). Modeling the developing mind: From structure to change. *Developmental Review, 19*(3), 319-368.
- Dennett, D. C. (2001). The fantasy of first-person science.
- Desoete, A., & Ozsoy, G. (2009). Introduction: Metacognition, More than the Lognes Monster?. *Online Submission, 2*(1), 1-6.
- Diamond A. (2013). Executive functions. *Annual review of psychology, 64*, 135–168.
doi:10.1146/annurev-psych-113011-143750
- Drigas, A., & Karyotaki, M. (2019). Attention and its Role: Theories and Models. *International Journal of Emerging Technologies in Learning, 14*(12).
- Drigas, A., & Karyotaki, M. (2016). Online and other ICT-based Training Tools for Problem-solving Skills. *International Journal of Emerging Technologies in Learning (iJET), 11*(06), 35-39.2016
- 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), 4-18.
- 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), 14-25.
- Drigas, A., & Papoutsi, C. (2018). A new layered model on emotional intelligence. *Behavioral Sciences, 8*(5), 45.
- Edelman, G. M. (2003). Naturalizing consciousness: a theoretical framework. *Proceedings of the National Academy of Sciences, 100*(9), 5520-5524.

- Epstein, W., & Lovitts, B. E. (1985). Automatic and attentional components in perception of shape-at-a-slant. *Journal of Experimental Psychology: Human Perception and Performance*, *11*(3), 355.
- Eriksen, C. W., & Hoffman, J. E. (1972). Temporal and spatial characteristics of selective encoding from visual displays. *Perception & psychophysics*, *12*(2), 201-204.
- Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: attentional control theory. *Emotion*, *7*(2), 336.
- Farb, N. A., Chapman, H. A., & Anderson, A. K. (2013). Emotions: Form follows function. *Current opinion in neurobiology*, *23*(3), 393-398.
- Fernandez-Duque, D., Baird, J. A., & Posner, M. I. (2000). Executive attention and metacognitive regulation. *Consciousness and cognition*, *9*(2), 288-307.
- Fiori, F., David, N., & Aglioti, S. M. (2014). Processing of proprioceptive and vestibular body signals and self-transcendence in Ashtanga yoga practitioners. *Frontiers in human neuroscience*, *8*, 734.
- Fischer, A., & Neubert, J. C. (2015). The multiple faces of complex problems: A model of problem solving competency and its implications for training and assessment. *Journal of Dynamic Decision Making*, *1*.
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive–developmental inquiry. *American Psychologist*, *34*(10), 906-911.
- Flavell, J. H., & Wellman, H. M. (1975). Metamemory.

- Fredrickson, B. L. (2003). The value of positive emotions: The emerging science of positive psychology is coming to understand why it's good to feel good. *American scientist*, 91(4), 330-335.
- Friese, M., Messner, C., & Schaffner, Y. (2012). Mindfulness meditation counteracts self-control depletion. *Consciousness and cognition*, 21(2), 1016-1022.
- Gagné, F. (2004). Transforming gifts into talents: The DMGT as a developmental theory. *High ability studies*, 15(2), 119-147.
- Garcia-Romeu, A. (2010). Self-transcendence as a measurable transpersonal construct. *Journal of Transpersonal Psychology*, 42(1), 26.
- Garcia-Romeu, A. P., & Tart, C. T. (2013). and Transpersonal Psychology. The Wiley-Blackwell handbook of transpersonal psychology, 121.
- Gardner, H. (1992). *Multiple intelligences* (Vol. 5, p. 56). Minnesota Center for Arts Education.
- Goldstein, E. B. (Ed.). (2009). *Encyclopedia of perception* (Vol. 1). Sage.
- Goleman, D. (2013). Focus: The Hidden Driver of Excellence, A&C Black. *Business & Economics*, 320(8).
- Grabovac, A. D., Lau, M. A., & Willett, B. R. (2011). Mechanisms of mindfulness: A Buddhist psychological model. *Mindfulness*, 2(3), 154-166.
- Grossmann, I. (2017). Wisdom in context. *Perspectives on Psychological Science*, 12(2), 233-257.

- Gutiérrez-Cobo, M. J., Cabello, R., & Fernández-Berrocal, P. (2016). The relationship between emotional intelligence and cool and hot cognitive processes: a systematic review. *Frontiers in behavioral neuroscience, 10*, 101.
- Heller, K. A., & Feldhusen, J. F. (1986). *Identifying and Nurturing the Gifted: An International Perspective*. Hans Huber Publishers/Hogrefe International, Inc., PO Box 51, Lewiston, NY 14092.
- Hennessey, M. G. (1999). Probing the Dimensions of Metacognition: Implications for Conceptual Change Teaching-Learning.
- Hobson, J. A., Pace-Schott, E. F., & Stickgold, R. (2000). Dreaming and the brain: toward a cognitive neuroscience of conscious states. *Behavioral and brain sciences, 23*(6), 793-842.
- Hodgins, H. S., & Adair, K. C. (2010). Attentional processes and meditation. *Consciousness and cognition, 19*(4), 872-878.
- Holding, D. H. (1975). Sensory storage reconsidered. *Memory & Cognition, 3*(1), 31-41.
- Huang, W., Eades, P., & Hong, S. H. (2009). Measuring effectiveness of graph visualizations: A cognitive load perspective. *Information Visualization, 8*(3), 139-152.
- Hughes, T. The road not taken-What is metacognition.

Hussain, A., Aleksander, I., Smith, L. S., Barros, A. K., Chrisley, R., & Cutsuridis, V. (Eds.). (2009). *Brain inspired cognitive systems 2008* (Vol. 657). Springer Science & Business Media.

Huy, Q. N. (1999). Emotional capability, emotional intelligence, and radical change. *Academy of Management review*, 24(2), 325-345.

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Ioannidou, F., & Konstantikaki, V. (2008). Empathy and emotional intelligence: What is it really about?. *International Journal of caring sciences*, 1(3), 118.

Itti, L., Koch, C., & Niebur, E. (1998). A model of saliency-based visual attention for rapid scene analysis. *IEEE Transactions on Pattern Analysis & Machine Intelligence*, (11), 1254-1259.

Izard, C. E. (1990). Facial expressions and the regulation of emotions. *Journal of personality and social psychology*, 58(3), 487.

Johanson, M., Valli, K., Revonsuo, A., & Wedlund, J. E. (2008). Content analysis of subjective experiences in partial epileptic seizures. *Epilepsy & Behavior*, 12(1), 170-182.

Josipovic, Z. (2010). Duality and nonduality in meditation research. *Consciousness and cognition*, 19(4), 1119-1121.

Jost, J. T., Kruglanski, A. W., & Nelson, T. O. (1998). Social metacognition: An expansionist review. *Personality and Social Psychology Review*, 2(2), 137-154.

- Karyotaki, M., Drigas, A., & Skianis, C. (2017). Attentional Control and other Executive Functions. *International Journal of Emerging Technologies in Learning*, 12(3).
- Kaspar, K. (2013). What guides visual overt attention under natural conditions? Past and future research. *ISRN neuroscience*, 2013.
- Khosravizadeh, P., Gohari, O., Gohari, N., & Ghaziani, G. (2011). Towards a Holistic View of Humanities. *International Journal of the Humanities*, 9(5).
- Klein, J. T., Shepherd, S. V., & Platt, M. L. (2009). Social attention and the brain. *Current Biology*, 19(20), R958-R962.
- Knight, C. R., Tilcsik, A., & Anteby, M. (2016). The geography of stigma management: The relationship between sexual orientation, city size, and self-monitoring. *Socius*, 2, 2378023115625172.
- Kokkalia, G. K., & Drigas, A. S. (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*, 10(5).
- Ευκλείδη, Α. (2011). Οι γνωστικές λειτουργίες και ικανότητες στους ηλικιωμένους. Στο Α. Κωσταρίδου-Ευκλείδη (Επιμ. Έκδ.). *Θέματα γηροψυχολογίας και γεροντολογίας*, 231-283.
- Κωσταρίδου-Ευκλείδη, Α. (2005). Μεταγνωστικές διεργασίες και αυτο-ρύθμιση. *Αθήνα: Ελληνικά Γράμματα*.
- Κωσταρίδου-Ευκλείδη, Α. (1997). Ψυχολογία της σκέψης. *Αθήνα: Ελληνικά Γράμματα*.

- Κωσταρίδου-Ευκλείδη, Α. (1992). Γνωστική ψυχολογία. *Θεσσαλονίκη: Εκδόσεις Art of Text*.
- Koriat, A. (2000). The feeling of knowing: Some metatheoretical implications for consciousness and control. *Consciousness and cognition, 9*(2), 149-171.
- Kuhn, D., & Dean, Jr. D. (2004). Metacognition: A bridge between cognitive psychology and educational practice. *Theory into practice, 43*(4), 268-273.
- Kuhn, D., Katz, J. B., & Dean, Jr, D. (2004). : Developing reason. *Thinking & Reasoning, 10*(2), 197-219.
- Lehto, J. E., Juujärvi, P., Kooistra, L., & Pulkkinen, L. (2003). Dimensions of executive functioning: Evidence from children. *British Journal of Developmental Psychology, 21*(1), 59-80.
- Leone, C., & Hawkins, L. B. (2006). Self-monitoring and close relationships. *Journal of personality, 74*(3), 739-778.
- Levenson, M. R., Jennings, P. A., Aldwin, C. M., & Shiraishi, R. W. (2005). Self-transcendence: Conceptualization and measurement. *The International Journal of Aging and Human Development, 60*(2), 127-143.
- Li, J., Levine, M. D., An, X., Xu, X., & He, H. (2012). Visual saliency based on scale-space analysis in the frequency domain. *IEEE transactions on pattern analysis and machine intelligence, 35*(4), 996-1010.

- Loper, A. B., & Hallahan, D. P. (1982). Meta-attention: The development of awareness of the attentional process. *The Journal of General Psychology*, *106*(1), 27-33.
- Lupyan, G., & Clark, A. (2015). Words and the world: Predictive coding and the language-perception-cognition interface. *Current Directions in Psychological Science*, *24*(4), 279-284.
- Lynch, K. (2016). Meditation gone mobile: The effects of short term mobile based meditation on wisdom and self-transcendence.
- Martinez, M. E. (2006). What is metacognition?. *Phi delta kappan*, *87*(9), 696-699.
- Maslow, A. H. (1987). *Personality*.
- Maslow, A. H. (1971). The farther reaches of human nature.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological review*, *50*(4), 370.
- Ματζιαράκη, Λ. (2016). Μνήμη: θεωρητικά μοντέλα και νευροψυχολογική εκτίμηση.
- Ματσαγγούρας, Η. Γ. (2008). Εκπαιδύοντες παιδιά υψηλών ικανοτήτων μάθησης: διαφοροποιημένη συνεκπαίδευση.
- Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annu. Rev. Psychol.*, *59*, 507-536.

- Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). TARGET ARTICLES: "Emotional Intelligence: Theory, Findings, and Implications". *Psychological inquiry*, 15(3), 197-215.
- Mercier, H., & Sperber, D. (2011). Why do humans reason? Arguments for an argumentative theory.
- 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.
- Mnih, V., Heess, N., & Graves, A. (2014). Recurrent models of visual attention. In *Advances in neural information processing systems* (pp. 2204-2212).
- Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle?. *Psychological bulletin*, 126(2), 247.
- Murphy, M., Donovan, S., & Taylor, E. (1997). The physical and psychological effects of meditation: A review of contemporary research. *Institute of Noetic Sciences: Petaluma*.
- Neber, H., & Schommer-Aikins, M. (2002). Self-regulated science learning with highly gifted students: The role of cognitive, motivational, epistemological, and environmental variables. *High Ability Studies*, 13(1), 59-74.
- Nelson, T. O., Kruglanski, A. W., & Jost, J. T. (1998). Knowing thyself and others: Progress in metacognitive social psychology.

- Nicolas, S., Gounden, Y., & Sanitioso, R. B. (2011). Alfred Binet on eyewitness testimony. *Psychology & History/Psychologie & Histoire*, 11, 21-50.
- Oppong, E., Shore, B. M., & Muis, K. R. (2019). Clarifying the Connections Among Giftedness, Metacognition, Self-Regulation, and Self-Regulated Learning: Implications for Theory and Practice. *Gifted Child Quarterly*, 63(2), 102-119.
- Page, A. (2006). Three Models for Understanding Gifted Education. *Kairaranga*, 7(2), 11-15.
- Pannu, J. K., & Kaszniak, A. W. (2005). Metamemory experiments in neurological populations: A review. *Neuropsychology review*, 15(3), 105-130.
- Papoutsis, C., Drigas, A., & Skianis, C. (2018). Mobile Applications to Improve Emotional Intelligence in Autism-A Review. *International Journal of Interactive Mobile Technologies*, 12(6).
- Papoutsis, C., & Drigas, A. S. (2017). Empathy and Mobile Applications. *International Journal of Interactive Mobile Technologies*, 11(3).
- Paris, S. G., & Winograd, P. (1990). Promoting metacognition and motivation of exceptional children. *Remedial and special Education*, 11(6), 7-15.
- Pearson, J., Clifford, C. W., & Tong, F. (2008). The functional impact of mental imagery on conscious perception. *Current Biology*, 18(13), 982-986.
- Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British journal of psychology*, 98(2), 273-289.

- Rath, J. F., Langenbahn, D. M., Simon, D., Sherr, R. L., Fletcher, J., & Diller, L. (2004). The construct of problem solving in higher level neuropsychological assessment and rehabilitation. *Archives of Clinical Neuropsychology*, *19*(5), 613-635.
- Reed, P. G. (2008). Theory of self-transcendence. *Middle range theory for nursing*, *3*, 105-129.
- Renzulli, J. S. (2002). Emerging conceptions of giftedness: Building a bridge to the new century. *Exceptionality*, *10*(2), 67-75.
- Ρίζος, Σ. (2011). *Η περίπτωση των χαρισματικών παιδιών: απόψεις των εκπαιδευτικών της πρωτοβάθμιας εκπαίδευσης σε θέματα αναγνώρισης και διαχείρισης της διαφορετικότητας των παιδιών αυτών* (Doctoral dissertation, Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών (ΕΚΠΑ). Σχολή Κοινωνικών Επιστημών. Τμήμα Εκπαίδευσης και Αγωγής στην Προσχολική Ηλικία).
- Riggio, R. E., & Friedman, H. S. (1982). The interrelationships of self-monitoring factors, personality traits, and nonverbal social skills. *Journal of Nonverbal Behavior*, *7*(1), 33-45.
- Rogoff, B., Correa-Chávez, M., & Silva, K. G. (2011). Cultural variation in children's attention and learning. *Psychology and the real world: Essays illustrating fundamental contributions to society*. New York, NY: Worth Publishers.
- Rosenthal, D. (2000, August). Consciousness and metacognition. In *Metarepresentation: Proceedings of the tenth Vancouver cognitive science conference* (pp. 265-295). New York: Oxford University Press.

- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, 25(1), 54-67.
- Sáiz-Manzanares, M. C., & Montero-García, E. (2015). Metacognition, self-regulation and assessment in problem-solving processes at university. In *Metacognition: Fundamentals, Applications, and Trends* (pp. 107-133). Springer, Cham.
- Schacter, D. L., Gilbert, D. T., & Wegner, D. M. (2011). The role of reinforcement and punishment. *Psychology* (2nd ed., pp. 278-288). New York, NY: Worth.
- 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.
- Schraw, G., & Moshman, D. (1995). Metacognitive theories. *Educational psychology review*, 7(4), 351-371.
- Simons, P. R. J. (1994). Metacognition. *International encyclopedia of education*, 3784-3788.
- 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.
- Snyder, M. (1974). Self-monitoring of expressive behavior. *Journal of personality and social psychology*, 30(4), 526.

- Snyder, M., & Gangestad, S. (1986). On the nature of self-monitoring: Matters of assessment, matters of validity. *Journal of personality and social psychology*, 51(1), 125.
- Stapp, H. P. (2014). Mind, brain, and neuroscience.
- Sternberg, R. J., & Grigorenko, E. L. (2002). The theory of successful intelligence as a basis for instruction and assessment in higher education. *New directions for teaching and learning*, 2002(89), 45-53.
- Stoltz, T., Piske, F. H. R., de Fátima Quintal de Freitas, M., D'Aroz, M. S., & Machado, J. M. (2015). Creativity in Gifted Education: Contributions from Vygotsky and Piaget. *Online Submission*, 6, 64-70.
- Studerus, E., Gamma, A., & Vollenweider, F. X. (2010). Psychometric evaluation of the altered states of consciousness rating scale (OAV). *PloS one*, 5(8), e12412.
- Subotnik, R. F. S., Subotnik, R. F., & Arnold, K. D. (Eds.). (1994). *Beyond Terman: Contemporary longitudinal studies of giftedness and talent*. Greenwood Publishing Group.
- Sun, R., & Franklin, S. (2007). Computational models of consciousness: A taxonomy and some examples.
- Tarlaci, S. (2010). Why we need quantum physics for cognitive neuroscience. *NeuroQuantology*, 8(1).
- Τριλιανός, Θ. (1997). Η κριτική σκέψη και η διδασκαλία της. *Αθήνα: Τελέθριον*.

- Τσιάμης, Α. (2006). Τα χαρισματικά παιδιά ζουν ανάμεσά μας. Ανακαλύπτοντας τα ίδια και τις ανάγκες τους.
- Van Cappellen, P., & Rimé, B. (2013). Positive emotions and self-transcendence. In *Religion, personality, and social behavior* (pp. 133-156). Psychology Press.
- Velmans, M. (2009). How to define consciousness: And how not to define consciousness. *Journal of Consciousness Studies*, 16(5), 139-156.
- Walton, R. (2015). Precursor, indicator or mirage: What relationship exists between spirituality and type of giftedness?
- Wang, Y., & Chiew, V. (2010). On the cognitive process of human problem solving. *Cognitive systems research*, 11(1), 81-92.
- Wilber, K. (2000). *Integral psychology: Consciousness, spirit, psychology, therapy*. Shambhala Publications.
- Wilber, K. (1997). An integral theory of consciousness. *Journal of consciousness studies*, 4(1), 71-92.
- Wong, P. T. (2016). Meaning-seeking, self-transcendence, and well-being. In *Logotherapy and existential analysis* (pp. 311-321). Springer, Cham.
- Wong, B. Y., & Jones, W. (1982). Increasing metacomprehension in learning disabled and normally achieving students through self-questioning training. *Learning Disability Quarterly*, 5(3), 228-240.
- Wong, P. T. (2016). Meaning-seeking, self-transcendence, and well-being. In *Logotherapy and existential analysis* (pp. 311-321). Springer, Cham.

Zeidan, F., Johnson, S. K., Diamond, B. J., David, Z., & Goolkasian, P. (2010). Mindfulness meditation improves cognition: Evidence of brief mental training. *Consciousness and cognition*, 19(2), 597-605.

Μάσλοου, χωρίς ημερομηνία, ανακτήθηκε 7,5,2019 από

<http://anthologion.gr/tag/%CE%BC%CE%AC%CF%83%CE%BB%CE%BF%CE%BF%CF%85/>

Διαίσθηση, χωρίς ημερομηνία, ανακτήθηκε 5,5,2019 από

<https://science.fandom.com/el/wiki/%CE%94%CE%B9%CE%B1%CE%AF%CF%83%CE%B8%CE%B7%CF%83%CE%B7>

Επίγνωση, χωρίς ημερομηνία, ανακτήθηκε 6,18,2019 από

<https://science.fandom.com/el/wiki/%CE%95%CF%80%CE%AF%CE%B3%CE%BD%CF%89%CF%83%CE%B7>

Συνείδηση, χωρίς ημερομηνία, ανακτήθηκε 5,20,2019

<https://el.wikipedia.org/wiki/Συνείδηση>

Συνειδητότητα, χωρίς ημερομηνία, ανακτήθηκε 5,20,2019 από

<https://science.fandom.com/el/wiki/%CE%A3%CF%85%CE%BD%CE%B5%CE%B9%CE%B4%CE%B7%CF%84%CF%8C%CF%84%CE%B7%CF%84%CE%B1>

bottom up, ΝΟΗΣΗ: ορολογία, χωρίς ημερομηνία, ανακτήθηκε, 8,29,2019, από

http://noesiscognition.blogspot.com/p/blog-page_3988.html

top-down, ΝΟΗΣΗ: ορολογία, χωρίς ημερομηνία, ανακτήθηκε, 8,29,2019, από

http://noesiscognition.blogspot.com/p/blog-page_3988.html

Wikipedia, language, χωρίς ημερομηνία, ανακτήθηκε 7,25,2019, από <https://en.wikipedia.org/wiki/Language#p-search>

Wikipedia, perception, χωρίς ημερομηνία, ανακτήθηκε 8,20,2019, από <https://en.wikipedia.org/wiki/Perception>

Wikipedia, learning, χωρίς ημερομηνία, ανακτήθηκε 7, 25, 2019 από <https://en.wikipedia.org/wiki/Learning>

Wikipedia,wisdom, χωρίς ημερομηνία, ανακτήθηκε 6, 30, 2019 από <https://en.wikipedia.org/wiki/Wisdom>

Self-awareness, χωρίς ημερομηνία, ανακτήθηκε 6,10,2019 από <https://www.merriam-webster.com/dictionary/self-awareness>

Self-awarness, χωρίς ημερομηνία, ανακτήθηκε 6,12,2019 από https://cdn-cms.f-static.com/uploads/1259807/normal_5d6094f3de006.pdf

self-regulation, χωρίς ημερομηνία, ανακτήθηκε 6,12,2019 από <https://en.wikipedia.org/wiki/Self-regulation>

Stairway to the mind, Alwyn Scott, χωρίς ημερομηνία, ανακτήθηκε 4,13,2019 από <https://www.amazon.com/Stairway-Mind-Controversial-Science-Consciousness/dp/0387943811>