World Journal of Biology Pharmacy and Health Sciences
eISSN: 2582-5542
Cross Ref DOI: 10.30574/wjbphs
Journal homepage: https://wjbphs.com/

(REVIEW ARTICLE)

Check for updates

The use of assistive technology by visually impaired students

Taxiarchis Vouglanis *

Department of Tourism Management, University of West Attica, Greece.

World Journal of Biology Pharmacy and Health Sciences, 2024, 20(02), 365-372

Publication history: Received on 02 October 2024; revised on 09 November 2024; accepted on 12 November 2024

Article DOI: https://doi.org/10.30574/wjbphs.2024.20.2.0877

Abstract

The present study examines the use of assistive technology by visually impaired students. Examining research conducted both in Greece and abroad shows that assistive technology can contribute to meeting the needs of visually impaired students, but there are still difficulties and obstacles that should be addressed. It was also seen that assistive technology in the case of students with visual impairments can provide benefits but there can be further development and it is important to integrate it into formal education.

Keywords: Visual impairment; Education; Assistive technology; Students

1. Introduction

In a progressive and equal society, all individuals without exception must have the same rights and opportunities to achieve their well-being. However, this seems not to be possible for visually impaired children since they are not given the opportunities to make full use of their potential and this also applies to the field of education. According to the World Health Organization (WHO, 2023), vision problems are faced by a rather large number worldwide, exceeding two billion. Of these, access to appropriate interventions has a small percentage, which highlights the weakness that exists in this field.

Sight is a basic sense for the individual since it allows him to adapt to his environment and function effectively based on the information he collects through it (Madake et al., 2023). Vision problems can be caused by accident, injury, disease, or be present from the time of a person's birth. Assistive technology is considered to be able to work supportively so that their daily life is easier and they become more functional, which is generally true for all people with disabilities and special educational needs (Texeira et al., 2023). With regard to visually impaired people, assistive technology is considered important in order to facilitate both their daily life and their education (Madake et al., 2023). Especially for students with visual impairments, assistive technology is particularly important because it allows them to be able to cope with both the needs of teaching and school life in general, thus providing them with more opportunities. People with visual impairments can, with assistive technology, carry out activities that previously seemed impossible, such as reading, communicating with others and, in general, that the rest of the students can do (Asebriy et al., 2018).

Assistive technology can therefore enhance the accessibility of visually impaired students in other ways by addressing problems that may arise simply by being in school. For example, visually impaired students can have accidents at school if they encounter obstacles when trying to walk, and assistive technology can help to avoid such phenomena (Buchs et al., 2017).

* Corresponding author: Taxiarchis Vouglanis

2. Visually impaired people and their education

People with vision problems are classified as visually impaired. Vision problems constitute a disability if they limit the person's capabilities. People with visual impairments mainly try to cope with their needs by using another sense, touch. Touch can contribute significantly to the provision of information to the visually impaired but this is not the case for everything as there are things that to be understood require more data that cannot be provided through one sense alone (Glara 2017; Sfyri, 2017).

The functionality of children with vision problems depends on another factor beyond these possibilities that they acquire through the senses. There are parents who treat visually impaired children as having no potential and become overprotective towards them. While they think they are helping their children in this way, in reality they are limiting their adaptation possibilities and not allowing them to become independent. Especially children whose vision problems are greater and the younger they are, then the difficulties they are expected to face are greater and therefore they need the necessary support to be able to face them (Glara 2017; Sfyri, 2017).

These difficulties are also found in education. Visually impaired students have the same educational goals as other students. However, they cannot use the same methods and means as the rest because of the difficulties they face. On the other hand, education is necessary for people with vision problems since through it they try to develop abilities and skills that will contribute to dealing with the additional needs and difficulties created by their handicap (Liakou & Manousou, 2013).

3. Mobility issues

As already mentioned, students with visual impairments may experience significant mobility problems due to the obstacles they encounter and cannot see to overcome. This also applies to students in schools. However, technology has been able to develop means that can work as a support in the navigation of visually impaired people. One such example is modern digital canes that have enhanced the white cane that visually impaired people had in the past. These walking sticks have been enhanced with tactile technology so that the user can receive vibrations when there are obstacles and be able to avoid them by passing them (Buchs et al., 2017). Some of these walking sticks are also equipped with the technology used in GPS devices to help people navigate better (Velazquez et al., 2018). These canes can further improve the daily life of visually impaired people but require practical training on their part in order to be able to make better use of them (Buchs et al., 2017).

To deal with mobility, technology has also contributed to the development of other means besides canes. One such tool is smart gloves which consist of sound, buzzer and ultrasound technology and can replace canes in dealing with mobility obstacles (Nor et al., 2021).

4. Education

It is already known that many educational systems use Braille to facilitate visually impaired students. This writing is based on touch and allows visually impaired people to read with their fingers the texts written in this form. Braille can be enhanced through technology and this in turn enhances the academic achievement of students with visual impairments. Asebriy et al. (2018) attempted to support Braille with technology in order to utilize it in teaching mathematical skills to visually impaired students. In particular, with the help of a computer, they converted a series of mathematical formulas into Braille, creating a MathML code. This conversion was made with the aim of visually impaired students being able to work on mathematical activities more quickly and systematically without facing additional difficulties. The system that the researchers developed using the code is universal and can be used by a large number of visually impaired people thus activating their interest in mathematics.

Another study was conducted by Sin et al. (2015) which focused on software used in mobile phones. The researchers focused on leveraging mobile phones to enable visually impaired people to extract information from a text. The goal was to enable visually impaired people to be able to take photos through the mobile phone and the software would provide them with information about what they were portraying. Also, this logic can provide information about texts written in a different language by translating the nouns.

In conclusion, we emphasize the importance of all digital technologies in the field of education and in disabilities training. These technologies are highly effective and productive and facilitate and improve assessment, intervention, and educational procedures through mobile devices that bring educational activities anywhere [48-50], various ICTs

applications that are the main supporters of education [51-64], and AI, STEM, Games and ROBOTICS [65-70] that raise educational procedures to new performance levs. In addition, the development and integration of ICTs with theories and models of metacognition, mindfulness, meditation, and the development of emotional intelligence [71-83], accelerates and improves educational practices and results more than those, particularly in children with disabilities. Concluding we underline that the ICTs are expanding the possibilities of visually impaired students[12-15, 23-46].

5. Challenges and obstacles

While research evidence has positive results from the use of assistive technology for both the visually impaired and students in general, it is neither easy to generate nor easy to use. This is due to various obstacles. One of them is financial. In order to design and manufacture technological applications that work as a support for people with visual impairments, large costs are required and therefore the necessary funding. This results in the assistive technology that is developed being expensive and therefore not accessible to all visually impaired people (Hickson et al., 2023). This may limit visually impaired people to media they can use even if they do not offer the benefits of those that are technologically advanced. For example, visually impaired students are more likely to be limited to using the classic white cane to improve their mobility since the digital one is twice as expensive (Santos et al., 2021). Something similar should also be expected from educational systems since it is not easy, and in conditions of financial crisis, to equip schools with the assistive technology that could help students with visual impairments due to its cost.

Another difficulty found in the field of education is that of knowledge. In order for assistive technology to be effectively implemented, the necessary knowledge must be present. This implies that in order for it to be used in schools, teachers should know how they can use it for the benefit of visually impaired students. This is not something easy and that teachers do not have the necessary knowledge and skills to be able to effectively use assistive technology for visually impaired students. This difficulty cannot be compensated by the knowledge of the students since they, in turn, need guidance. In addition, they themselves may lack knowledge and skills. This was also seen in the study by Hickson et al. (2023) regarding the use of assistive technology by visually impaired students during the pandemic. It became clear that students with a pandemic could not attend online courses as effectively as others because they did not know how to use the software intended for them.

The lack of knowledge and skills on the part of teachers to guide visually impaired students to be able to use assistive technology is found at all levels of education. For example, Al-Jarf's (2021) research showed that in higher education students with visual impairments face problems because their needs are not understood by their professors. This is largely because teachers are unaware of the possibilities that assistive technology can create and therefore feel limited in what they can do.

However, the difficulties and obstacles in primary and secondary education are similar. Teachers do not have adequate training in order to be able to use assistive technology for students with visual impairments and this has the consequence of neglecting them (Hickson et al., 2023).

6. The Greek reality

The research that exists regarding the Greek educational reality and the use of assistive technology for visually impaired students is limited. However, some important data are recorded. Argyropoulos and Iliadou (2006) note that the literacy skills of visually impaired students improve with the use of assistive technology. Hatzopoulou (2018) also found that the performance of visually impaired students improved with the use of assistive technology. Liakou & Manousou (2013) also found that assistive technology can help students with visual impairments access not only online but also distance education.

The lack of use of assistive technology on the other hand showed significant problems and obstacles in the education of visually impaired students. Beyond performance, visually impaired students without the use of assistive technology have problems even attending class due to mobility and mobility issues. This implies their frequent absence from class and teaching and even their resignation from education (Konidis, 2018).

The above shows the need to develop the supporting technology and it is positive that there are such attempts in the Greek research activity that record what is available. Liakou & Manousou (2013) and Kourbetis (2015) referred to the formation of appropriate educational material through its digitization. For Glara (2017), the contribution of an e-class platform that is configured in such a way that those with vision problems can also use it can be positive. Accordingly,

Sfyri (2017) reported on a corresponding Android application that allows visually impaired students to navigate through touch.

Finally, Papalexandri (2017) lists a multitude of means and applications of assistive technology. The range of media he lists ranges from Braille aids to dedicated keyboards, talking books, web reading apps, etc.

7. Conclusions

Assistive technology can ensure that visually impaired students can develop their abilities and skills equally with other students through the access opportunities that are created. The range of assistive technology available can meet the diverse needs of students with visual impairments. This is not to say that there should not be further development further expanding the possibilities of visually impaired students.

In order for assistive technology to be effective, it is necessary to integrate it into education and use it by teachers. This requires additional resources as well as teacher training to be able to use it effectively for students with visual impairments.

Compliance with ethical standards

Acknowledgments

The Authors would like to thank the SPECIALIZATION IN ICTs AND SPECIAL EDUCATION: PSYCHOPEDAGOGY OF INCLUSION Postgraduate studies Team, for their support.

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Al-Jarf R (2021) Blind Saudi Female College Students and Assistive Technologies: A Case Study. Online Submission 11(4): 1-9.

[2] Argyropoulos V, Iliadou X (2006) Assistive technology and Braille: A pilot study with blind pupils and students. In: E Ftiaka, A Gagatsi, I Ilias, M Modestou (ed) 9th Pancypriot Conference of the Pedagogical Society of Cyprus. Educational research in the era of globalization, June 2-3, 2006. University of Cyprus, Nicosia, pp. 743-754.

[3] Asebriy Z, Raghay S, Bencharef O. (2018) An Assistive Technology for Braille Users to Support Mathematical Learning: A Semantic Retrieval System. Symmetry Oct 26;10(11):547.

[4] Buchs G, Simon N, Maidenbaum S, Amedi A. (2017) Waist-up protection for blind individuals using the EyeCane as a primary and secondary mobility aid. Restorative Neurology and Neuroscience Mar 23;35(2):225-35.

[5] Glara M (2017) Open e-Class e-learning platform: Exploring accessibility through automated tools and the views of students with severe visual impairments. University of Thessaly, Volos.

[6] Hatzopoulou P (2018) Auditory discrimination of mathematical concepts by people with visual impairment. University of Macedonia, Thessaloniki.

[7] Hickson A, Tajer LH, Muwafak Alobaedy M, Joo Vin Oh E. (2023) Accessing and Delivering Online Education in The Time of COVID-19: Challenges for Visually Impaired People in Malaysia. Journal of Humanities and Social Sciences Research Jul;4(1):63–72.

[8] Konidis A (2018) Help guide for students with visual loss entering the University of Piraeus. University of Piraeus, Piraeus.

[9] Kourbetis B (2015) Educational materials and applications for students with disabilities. In: G Papadatos, S Polychronopoulou, A Bastea (eds) 5th Panhellenic Conference of Education Sciences. Cognitive and speech functions in behavior, education and special education, June 19-21, 2015. National and Kapodistrian University of Athens, Athens, pp. 14-25.

[10] Liakou M, Manousou G (2013) Distance Education for visually impaired people. In: A Lionarakis (ed) 7th International Conference on Open & Distance Education. Learning Methodologies, November 8-10, 2013. Hellenic Open and Distance Education Network, Athens, pp. 119-127.

[11] Madake J, Bhatlawande S, Solanke A, Shilaskar S (2023) A qualitative and quantitative analysis of research in mobility technologies for visually impaired people. IEEE Access.

[12] Manola, M., Vouglanis, T., & Maniou, F. (2022). Contribution of the use of children's literature in special education. Open Journal for Anthropological Studies, 6(2), 21-26.

[13] Manola, M., Maniou, F., Vouglanis, T., & Soldatou, A. (2023). Literary routes in the footsteps of Sherlock Holmes. SDCT-Journal, 12(1), 79-85.

[14] Manola, M., Vouglanis, T., Maniou, F., & Driga, A. M. (2023). The literary hero Sherlock Holmes, his relationship with Asperger syndrome and ICT's role in literacy. Eximia, 8, 67–80.

[15] Manola, M., Vouglanis, T., Maniou, F., & Driga, A. M. (2023). Children's literature as a means of disability awareness and ICT's role. Eximia, 8, 1–13.

[16] Nor RM, Amran AC, Saleh SM, Hamzah IZ (2021) Development of Smart Glove System for Blind People. International Journal of Electrical Engineering and Applied Sciences (IJEEAS) 4(1).

[17] Papalexandri X (2017) Vision problems and assistive technology. Panhellenic Conference of Education Sciences, 2016(2): 1057-1067.

[18] Santos ADP, Medola FO, Cinelli MJ, Garcia Ramirez AR, Sandnes FE. (2021) Are electronic white canes better than traditional canes? A comparative study with blind and blindfolded participants. Universal Access in the Information Society Feb 17;

[19] Sfyri K (2017) Android application development, for visually impaired people. Aristotle University, Thessaloniki.

[20] Sin T, Su Lee Ming E, Che Fai Y, Jian Fu O, Yang Shane S. (2015) Mobile Text Reader for People with Low Vision. Jurnal Teknologi May 28;74(6).

[21] Texeira CH, Amorim Rodrigues A, de Azevedo Costa ALF, dos Santos VR. (2023) Wearable Haptic Device as Mobility Aid for Blind People: Electronic Cane - Wearable Device for Mobility of Blind People. JOJ Ophthalmology 3;9(3).

[22] Velázquez R, Pissaloux E, Rodrigo P, Carrasco M, Giannoccaro N, Lay-Ekuakille A. (2018) An Outdoor Navigation System for Blind Pedestrians Using GPS and Tactile-Foot Feedback. Applied Sciences 7;8(4):578.

[23] Vouglanis, T. (2019). The positive and negative effects of the internet on the cognitive, mental and social aspects of the personality of the person with a disability. London: LAP LAMBERT Academic Publishing, 76 p., ISBN: 978-620-0-47936-5.

[24] Vouglanis, T. (2020). "Teachers' attitudes towards the use of ICT in the educational process of people with special educational needs", International Journal of Educational Innovation, Vol. 2, Issue 1, ISSN 2654-0002.

[25] Vouglanis, T. (2020). The effect of exercise on the development of new neurons in the brain resulting in increased intelligence, London: LAP LAMBERT Academic Publishing. 72 p., ISBN: 978-620-0-56531-0.

[26] Vouglanis, T. (2020). Charismatic children and heredity. London: LAP LAMBERT Academic Publishing, 72 p., ISBN: 978-620-2-52043-0.

[27] Vouglanis, T. & Drigas, A. (2022). The positive impact of Internet on the cognitive, psychological and social side of people's personality with disabilities. Technium Social Sciences Journal, 35(1), 29-42.

[28] Vouglanis, T. & Drigas, A. (2022). The internet addiction and the impact on the cognitive, psychological and social side of people's personality with disabilities. Technium Social Sciences Journal, 35(1), 93-110.

[29] Vouglanis, T., Driga, A. M., & Drigas, A. (2022). Physical and mental exercise to create new congenial neurons, to increase intelligence and the role of ICTs. Technium BioChemMed, 3(3), 21–36.

[30] Vouglanis, T., Driga, A. M., & Drigas, A. (2022). Charismatic Children: Heredity, Environment and ICTs. Technium Sustainability, 2(5), 1–15.

[31] Vouglanis, T., & Driga, A. M. (2023). Risks, inequalities, and problems of people with Disabilities in the COVID-19 pandemic and the role of ICTs. TechHub Journal, 4, 45-58.

[32] Vouglanis, T., & Driga, A. M. (2023). Effects of COVID-19 on people with intellectual disabilities and the ICT's role. TechHub Journal, 4, 29-44.

[33] Vouglanis, T., & Driga, A. M. (2023). The use of ICT for the early detection of dyslexia in education. TechHub Journal, 5, 54–67.

[34] Vouglanis, T., & Driga, A. M. (2023). Educating students with dyslexia through ICT during the COVID-19 pandemic. TechHub Journal, 5, 20–33.

[35] Vouglanis, T., & Driga, A. M. (2023). Factors affecting the education of gifted children and the role of digital technologies. TechHub Journal, 6, 28–39.

[36] Vouglanis, T., & Driga, A. M. (2023). Educating students with Attention Deficit Hyperactivity Disorder (ADHD) through ICT during the COVID-19 pandemic. TechHub Journal, 6, 40–51.

[37] Vouglanis, T., & Driga, A. M. (2023). Educating students with autism through ICT during the COVID-19 pandemic. World Journal of Biology Pharmacy and Health Sciences, 14(03), 264–274.

[38] Vouglanis, T. (2023). The use of robotics in the education of students with special educational needs. World Journal of Advanced Research and Reviews, 19(01), 464–471.

[39] Vouglanis, T. (2023). The use of ICT in the education of students with dyslexia. Global Journal of Engineering and Technology Advances, 16(02), 38–46.

[40] Vouglanis, T. (2023). The use of ICT in the education of students with dyslexia. Magna Scientia Advanced Research and Reviews, 08(02), 141–149.

[41] Vouglanis, T. (2023). The use of ICT in the education of students with Dysorthographia. World Journal of Advanced Research and Reviews, 19(02), 1363–1371.

[42] Vouglanis, T., & Driga, A. M. (2023). The use of ICT in the education of students with dysgraphia. World Journal of Advanced Engineering Technology and Sciences, 10(01), 021–029.

[43] Vouglanis, T., & Raftopoulos, D. (2023). The use of ICT in the education of students with dyscalculia. GSC Advanced Research and Reviews, 17(01), 038–046.

[44] Vouglanis, T., & Driga, A. M. (2024). The use of ICT in the education of students with alexia/acquired dyslexia. International Journal of Science and Research Archive, 11(01), 116–123.

[45] Vouglanis, T., & Salapata, Y. (2024). The use of ICT in the education of students with Down syndrome. World Journal of Biology Pharmacy and Health Sciences, 19(02), 230–237.

[46] Vouglanis, T. (2024). The use of educational digital games in the education of students with Down Syndrome. International Journal of Science and Research Archive, 13(01), 815–823.

[47] World Health Organization (WHO) (2023) Blindness and Visual Impairment. https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment. Accessed 25 September 2024.

[48] Stathopoulou A, Karabatzaki Z, Tsiros D, Katsantoni S, Drigas A, 2019 Mobile apps the educational solution for autistic students in secondary education , Journal of Interactive Mobile Technologies (IJIM) 13 (2), 89-101https://doi.org/10.3991/ijim.v13i02.9896

[49] Drigas A, DE Dede, S Dedes 2020 Mobile and other applications for mental imagery to improve learning disabilities and mental health International , Journal of Computer Science Issues (IJCSI) 17 (4), 18-23 DOI:10.5281/zenodo.3987533

[50] Politi-Georgousi S, Drigas A 2020 Mobile Applications, an Emerging Powerful Tool for Dyslexia Screening and Intervention: A Systematic Literature Review , International Association of Online Engineering

[51] Drigas A, Petrova A 2014 ICTs in speech and language therapy , International Journal of Engineering Pedagogy (iJEP) 4 (1), 49-54 https://doi.org/10.3991/ijep.v4i1.3280

[52] Bravou V, Drigas A, 2019 A contemporary view on online and web tools for students with sensory & learning disabilities , iJOE 15(12) 97 https://doi.org/10.3991/ijoe.v15i12.10833

[53] Drigas A, Theodorou P, 2016 ICTs and music in special learning disabilities , International Journal of Recent Contributions from Engineering, Science & IT …

[54] Chaidi I, Drigas A, C Karagiannidis 2021 ICT in special education , Technium Soc. Sci. J. 23, 187, https://doi.org/10.47577/tssj.v23i1.4277

[55] Galitskaya, V., & Drigas, A. (2020). Special Education: Teaching Geometry with ICTs. International Journal of Emerging Technologies in Learning (iJET), 15(06), pp. 173–182. https://doi.org/10.3991/ijet.v15i06.11242

[56] Alexopoulou, A., Batsou, A., & Drigas, A. S. (2019). Effectiveness of Assessment, Diagnostic and Intervention ICT Tools for Children and Adolescents with ADHD. International Journal of Recent Contributions from Engineering, Science & IT (iJES), 7(3), pp. 51–63. https://doi.org/10.3991/ijes.v7i3.11178

[57] Stathopoulou A, Spinou D, Driga AM, 2023, Burnout Prevalence in Special Education Teachers, and the Positive Role of ICTs, iJOE 19 (08), 19-37

[58] Stathopoulou A, Spinou D, Driga AM, 2023, Working with Students with Special Educational Needs and Predictors of Burnout. The Role of ICTs. iJOE 19 (7), 39-51

[59] Loukeri PI, Stathopoulou A, Driga AM, 2023 Special Education Teachers' Gifted Guidance and the role of Digital Technologies, TECH HUB 6 (1), 16-27

[60] Stathopoulou A, Temekinidou M, Driga AM, Dimitriou 2022 Linguistic performance of Students with Autism Spectrum Disorders, and the role of Digital Technologies , Eximia 5 (1), 688-701

[61] Vouglanis T, Driga AM 2023 Factors affecting the education of gifted children and the role of digital technologies. TechHub Journal 6, 28-39

[62] Vouglanis T, Driga AM 2023 The use of ICT for the early detection of dyslexia in education, TechHub Journal 5, 54-67

[63] Drakatos N, Tsompou E, Karabatzaki Z, Driga AM 2023 Virtual reality environments as a tool for teaching Engineering. Educational and Psychological issues, TechHub Journal 4, 59-76

[64] Drakatos N, Tsompou E, Karabatzaki Z, Driga AM 2023 The contribution of online gaming in Engineering education, Eximia 8, 14-30

[65] Chaidi E, Kefalis C, Papagerasimou Y, Drigas, 2021, Educational robotics in Primary Education. A case in Greece, Research, Society and Development journal 10 (9), e17110916371-e17110916371 https://doi.org/10.33448/rsd-v10i9.16371

[66] Lytra N, Drigas A 2021 STEAM education-metacognition–Specific Learning Disabilities , Scientific Electronic Archives journal 14 (10) https://doi.org/10.36560/141020211442

[67] Demertzi E, Voukelatos N, Papagerasimou Y, Drigas A, 2018 Online learning facilities to support coding and robotics courses for youth , International Journal of Engineering Pedagogy (iJEP) 8 (3), 69-80, https://doi.org/10.3991/ijep.v8i3.8044

[68] Pergantis, P., & Drigas, A. (2024). The effect of drones in the educational Process: A systematic review. Education Sciences, 14(6), 665. https://doi.org/10.3390/educsci14060665

[69] Chaidi I, Drigas A 2022 Digital games & special education , Technium Social Sciences Journal 34, 214-236 https://doi.org/10.47577/tssj.v34i1.7054

[70] Bravou V, Oikonomidou D, Drigas A, 2022 Applications of Virtual Reality for Autism Inclusion. A review , revista Retos 45, 779-785 https://doi.org/10.47197/retos.v45i0.92078

[71] Drigas A, Mitsea E, Skianis C 2021 The Role of Clinical Hypnosis & VR in Special Education , International Journal of Recent Contributions from Engineering Science & IT (IJES) 9(4), 4-18. https://doi.org/10.3991/ijes.v9i4.26147

[72] V Galitskaya, A Drigas 2021 The importance of working memory in children with Dyscalculia and Ageometria , Scientific Electronic Archives journal 14 (10) https://doi. org/10.36560/141020211449

[73] Drigas A, Mitsea E, Skianis C. 2022 Virtual Reality and Metacognition Training Techniques for Learning Disabilities , SUSTAINABILITY 14(16), 10170, https://doi.org/10.3390/su141610170

[74] Drigas A,. Sideraki A. 2021 Emotional Intelligence in Autism , Technium Social Sciences Journal 26, 80, https://doi.org/10.47577/tssj.v26i1.5178

[75] Bamicha V, Drigas A, 2022 The Evolutionary Course of Theory of Mind - Factors that facilitate or inhibit its operation & the role of ICTs , Technium Social Sciences Journal 30, 138-158, DOI:10.47577/tssj.v30i1.6220

[76] Karyotaki M, Bakola L, Drigas A, Skianis C, 2022 Women's Leadership via Digital Technology and Entrepreneurship in business and society , Technium Social Sciences Journal. 28(1), 246–252. https://doi.org/10.47577/tssj.v28i1.5907

[77] Pergantis, P.; Bamicha, V.; Chaidi, I.; Drigas, A. Driving Under Cognitive Control: The Impact of Executive Functions in Driving. World Electric Vehicle Journal 2024, 15, 474, doi:10.3390/wevj15100474.

[78] Mitsea E, Drigas A,, Skianis C, 2022 Breathing, Attention & Consciousness in Sync: The role of Breathing Training, Metacognition & Virtual Reality , Technium Social Sciences Journal 29, 79-97 https://doi.org/10.47577/tssj.v29i1.6145

[79] Drigas A, Mitsea E, Skianis C 2021. The Role of Clinical Hypnosis and VR in Special Education , International Journal of Recent Contributions from Engineering Science & IT (IJES) 9(4), 4-17.

[80] E Mitsea, A Drigas, C Skianis 2022 Metacognition in Autism Spectrum Disorder: Digital Technologies in Metacognitive Skills Training , Technium Social Sciences Journal, 153-173

[81] Chaidi, I. ., & Drigas, A. (2022). Social and Emotional Skills of children with ASD: Assessment with Emotional Comprehension Test (TEC) in a Greek context and the role of ICTs. , Technium Social Sciences Journal, 33(1), 146–163. https://doi.org/10.47577/tssj.v33i1.6857

[82] Kontostavlou, E. Z., & Drigas, A. (2021). How Metacognition Supports Giftedness in Leadership: A Review of Contemporary Literature. , International Journal of Advanced Corporate Learning (iJAC), 14(2), pp. 4–16. https://doi.org/10.3991/ijac.v14i2.23237

[83] Drigas A, Mitsea E, Skianis C, 2022 Intermittent Oxygen Fasting and Digital Technologies: from Antistress and Hormones Regulation to Wellbeing, Bliss and Higher Mental States , Technium BioChemMed journal 3 (2), 55-73.