

Georgios Kritikos

CURRICULUM VITAE



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Studies

Bachelor of Science (BSc) in Physics

September 1997 – September 2001

Specialization: Electronics and Telecommunications

Grade: 8.04/10

Institution: Aristotle University of Thessaloniki – Depart. of Physics

Dissertation: "Development of telecommunication systems: Signal production with DDS techniques for the control of telecommunication systems. Applications with the arbitrary waveform generator HP 33120A"

Supervisor: Assistant Prof. Vafiadis Elias

Master of Science (MSc) "Electronic Physics (Radioelectrology)"

October 2001 – February 2004

Specialization: Electronic Technology of Telecommunications

Grade: 9.25/10

Institution: Aristotle University of Thessaloniki – Depart. of Physics

Dissertation: "Temperature rise on head tissues of mobile phone users. Study of the thermal parameters"

Supervisor: Prof. Sachalos John

Master of Education (MEd) "Models of design and development of educational units"

April 2005 – November 2006

Specialization: Information and Communication Technologies' Management

Grade: 8.73/10

Institution: University of the Aegean – Depart. of pre-school education sciences and educational design

Dissertation: "Collaborative modelling activities of physics' phenomena in real classroom conditions"

Supervisor: Associate Prof. Dimitracopoulou Angelique

Doctorate (PhD)

October 2008 – September 2013

Title: "Analogical reflection and metacognitive skills development through collaborative modelling activities in Physics"

Advisory committee: Prof. Dimitracopoulou Angelique (Supervisor), Prof. Kalavasis Fragkiskos, Associate Prof. Kafoussi Sonia

Grade: 10/10

Institution: University of the Aegean – Depart. of pre-school education sciences and educational design

Post-Doctoral Research

September 2016 – July 2020

Title: "Educational Engineering"

Supervisor: Prof. Kalavasis Fragkiskos

Institution: University of the Aegean – Depart. of pre-school education sciences and educational design

Scholarships – Academic Awards

- 01/10/2018-31/12/2019: Scholarship in the framework of the project "Supporting researchers with an emphasis on young researchers" of the E.P. "Human Resource Development, Education and Lifelong Learning" co-financed by the European Social Fund and national resources.
- 01/03/2003-31/08/2003: Scholarship from the European Union Committee for the performance of the second year of studies at the post-graduate programme "Electronic Physics and Radioelectrology", Physics department Aristotle University of Thessaloniki.
- 2002-2003: First grade position at the post-graduate programme "Electronic Physics and Radioelectrology", Physics department Aristotle University of Thessaloniki.
- 2001-2002: Candidate for performance scholarship from the Greek Foundation of Scholarships at the post-graduate programme "Electronic Physics and Radioelectrology", Physics department Aristotle University of Thessaloniki (was not obtained due to parallel scholarships)
- 01/07/2002-31/12/2002: Scholarship from the European Union Committee for the performance of the first year of studies at the post-graduate programme "Electronic Physics and Radioelectrology", Physics department Aristotle University of Thessaloniki.
- 2001-2002: First grade position at the post-graduate programme "Electronic Physics and Radioelectrology", Physics department Aristotle University of Thessaloniki.

Research Interests

- Science Education
- Educational Engineering
- Digital Educational Environments
- Interdisciplinary approach of Maths and Science in Education
- Systems Theory in Education
- STEAM Education
- ICT in Education
- Reflection & Metacognition
- Electromagnetic pollution & Biological effects of electromagnetic radiation

Research in Science Education and Educational Engineering

Master's degree dissertation at MEd "Models of design and development of educational units" at the Depart. of pre-school education sciences and educational design, University of the Aegean

"Collaborative modelling activities of physics' phenomena in real classroom conditions"

Supervisor: Associate Prof. Dimitracopoulou Angelique

04/2006 – 10/2006

Doctoral's degree dissertation at the Depart. of pre-school education sciences and educational design, University of the Aegean

"Analogical reflection and metacognitive skills development through collaborative modelling activities in Physics"

Supervisor: Prof. Dimitracopoulou Angelique

10/2008 – 09/2013

Post-Doctoral Research at the Depart. of pre-school education sciences and educational design, University of the Aegean

"Educational Engineering"

Supervisor: Prof. Kalavasis Fragkiskos

09/2016 – 06/2020

Research project: The didactical linking between mathematics and physics during the transition from primary school to high school: a systemic approach to the manifoldness of the concept of equality.

Επιστημονικά Υπεύθυνος: Καλαβάσης Φραγκίσκος, Καθηγητής του Τμήματος Επιστημών της Προσχολικής Αγωγής και του Εκπαιδευτικού Σχεδιασμού Παν. Αιγαίου.

Co-funding: Greece and the European Union (European Social Fund- ESF)

Implementation: Depart. of pre-school education sciences and educational design, University of the Aegean.

01/10/2018 – 31/12/2019

Research in Electronic Physics and Telecommunications

Bachelor's degree dissertation at the Physics Dept. Aristotle University of Thessaloniki

«Development of telecommunication systems: Signal production with DDS techniques for the control of telecommunication systems. Applications with the arbitrary waveform generator HP 33120A»

Supervisor: Assistant Prof. Vafiadis Elias

01/2001 – 09/2001

Master's degree dissertation (MSc) "Electronic Physics (Radioelectrology)" at the Physics Dept. Aristotle University of Thessaloniki

«Temperature rise on head tissues of mobile phone users. Study of the thermal parameters»

Supervisor: Prof. Sachalos John

01/2003 – 12/2003

Research project: Study of the non-ionizing radiation at the Radio/TV antenna park in Thessaloniki

Scientific supervisor: Prof. Sachalos John

Funding: Hellenic Ministry of communications.

Implementation: Radiocommunications Laboratory of the Physics Dept. Aristotle University of Thessaloniki.

01/02/2003 – 31/05/2003

Research project: Electromagnetic Radiation's Measurements in Thessaloniki

Scientific supervisor: Prof. Sachalos John

Funding: STET Hellas Telecommunications SA (Telestet).

Implementation: Radiocommunications Laboratory of the Physics Dept. Aristotle University of Thessaloniki.

01/07/2003 – 30/09/2003

Research project: Research in living for possible health risk related to the use of cell phones and Base Stations (Studies of carcinogenesis in rodent)

Scientific supervisor: Prof. Sachalos John

Funding: European Commission – Research Directorate General.

Implementation: Radiocommunications Laboratory of the Physics Dept. Aristotle University of Thessaloniki.

01/10/2003 – 31/11/2003

Professional Experience

- 2017-σήμερα: Researcher – Laboratory teaching staff, University of the Aegean
- 2014-2017: Adjunct lecturer at the Post graduate programmes “Didactics of Mathematics, Science, and Information and Communication Technologies in Education: Interdisciplinary approach” and “Models of design and development of educational units”
- 2005-2017: Science educator at public secondary education in Greece
- 2014-17: Director of the “Laboratory Centre of Natural Sciences” of South Dodecanese

Teaching Experience

Graduate programme of the depart. of pre-school education sciences and educational design, University of the Aegean

- Didactics of Science
Academic years: 2018-23
- Learning within Science
Academic years: 2018-23
- Practicum in Early Childhood Science Education – (Natural Sciences and Environment)
Practice B’ Phase
Academic years: 2017-20
- The Development of Representations in the Context of Natural Sciences
Academic year: 2017-18
- The Impact of Sensorimotor Experience on the Understanding of Mechanical Balance from Children of Preschool Age
Academic year: 2017-18
- Applied Didactics of Information and Communication Technologies: Practice B’ Phase
Academic years: 2017-20
- Applied Didactics of Information and Communication Technologies and of Interdisciplinary Approach: Practice B’ Phase
Academic years: 2020-23
- Design, development and evaluation of educational applications of Information and Communication Technologies
Academic years: 2017-20 | Laboratory support
- Mathematical paths of humans and civilizations: Design by exploiting the variety
Academic year: 2016-17 | Co-teaching

Post-graduate programme “Didactics of Mathematics, Science, and Information and Communication Technologies in Education: Interdisciplinary approach”, University of the Aegean

- Didactics of Mathematics and Science: An interdisciplinary approach
Academic years: 2014-23
- Contemporary directions and applications of research in Didactics of Mathematics and Science
Academic years: 2016-23
- Observation - interdisciplinary design methodology for the practice
Academic years: 2018-23
- Adapted methodology in the thematic areas of master thesis
Academic years: 2018-23
- Dissertation beginning
Academic years: 2014-16

Post-graduate programme “Models of design and development of educational units”, University of the Aegean

- Educational Engineering
Academic years: 2014-23
Academic years: 2009-11, 2012-2014 | Teaching support

Post-graduate programme “Environmental Education”, University of the Aegean

- Introduction to the Environmental Sciences
Academic years: 2020-23
- Environmental Issues in the Perspective of Sustainable Development
Academic years: 2020-23

Post-graduate programme “Children's Book and Educational Material”, University of the Aegean

- Technological Educational Material
Academic year: 2022-23

Graduate/post-graduate dissertations’ supervision

- Supervisor of 12 post-graduate dissertations
 - 9 at the post-graduate programme “Didactics of Mathematics, Science, and Information and Communication Technologies in Education: Interdisciplinary approach”, University of the Aegean.
 - 2 at the post-graduate programme “Environmental Education”, University of the Aegean.
 - 1 at the post-graduate programme “Models of design and development of educational units”, University of the Aegean.
- Member of the consulting team of 22 post-graduate dissertations
 - 20 at the post-graduate programme “Didactics of Mathematics, Science, and Information and Communication Technologies in Education: Interdisciplinary approach”, University of the Aegean.
 - 2 at the post-graduate programme “Models of design and development of educational units”, University of the Aegean.

- Member of the consulting team of 2 graduate dissertations at the Graduate programme of the department of pre-school education sciences and educational design, University of the Aegean.
- Member of the supervising team of 37 post-graduate dissertations
 - 32 at the post-graduate programme “Didactics of Mathematics, Science, and Information and Communication Technologies in Education: Interdisciplinary approach”, University of the Aegean.
 - 5 at the post-graduate programme “Models of design and development of educational units”, University of the Aegean.

Secondary Education

- 2014-17: Director of the “Laboratory Centre of Natural Sciences” of South Dodecanese
- 2005-14: Secondary School Science Educator

ICTs Certification Centers

- 2005-07: Educator at Interactive Learning, Rhodes

Publications

Papers in Refereed Journals

- J.6 Kritikos, G., Moutsios-Rentzos, A., & Kalavasis, F. (2022). Management of Fraction Notation when Solving Physics Problems by First-Year Education Students. *Research on Science and Technology Education*, 2(2), 20-42. DOI: 10.12681/riste.30645. [GR]
- J.5 Moutsios-Rentzos, A., Pinnika, V., Kritikos, G., & Kalavasis, F. (2020). Appearances of the equals sign in primary school mathematics and natural sciences: an interdisciplinary, systemic approach. *Quaderni di Ricerca in Didattica (Mathematics)*, 7, 285-294.
- J.4 Moutsios-Rentzos, A., Kritikos, G., & Kalavasis, F. (2019). Co-constructing teaching and learning spaces in and between mathematics and physics at school. *Quaderni di Ricerca in Didattica (Mathematics)*, 2(3), 215-220.
- J.3 Moutsios-Rentzos, A., Kritikos, G., & Kalavasis, F. (2017). Functions of operations and operands in school mathematics and physics: a complex interdisciplinary (de)mathematised phenomenology. *Quaderni di Ricerca in Didattica (Mathematics)*, 27(2), 297-299.
- J.2 Kritikos, G., & Dimitracopoulou, A. (2017). Secondary Students’ Analogical Reflections on Unfamiliar Scientific Concepts. *The International Journal of Technologies in Learning*, 24(2), 25-36. doi:10.18848/2327-0144/CGP/v24i02/25-36.
- J.1 Kritikos, G., & Dimitracopoulou, A. (2014). The Impact of the Analogical Reflection on the Metacognitive Awareness. *The International Journal of Science, Mathematics and Technology Learning*, 20(4), 39-50. doi:10.18848/2327-7971/CGP/v20i04/49049.

Chapters in Edited Books

- Ch.7 Moutsios-Rentzos, A., Kalavasis, F., Meimaris, M., & Kritikos, G. (in press). “My relationship with mathematics”: a digital storytelling-centered investigation with pre-service teachers. Chapter in Edited Book published by Smithsonian Institution Scholarly Press.

- Ch.6 Kritikos, G. (2023). Citizen Science as a means of regulating the interactions of the School Unit in the context of Educational Engineering. A. Kontakos & F. Kalavasis (Eds.), *Issues of Educational Design 13. The Engineering of Transition in Educational Design and School Unit Development: Theories, Systems, Structures, Processes. Functions, Models, Tools, Programs, Technologies* (pp. 163–183), Athens, Greece: Diadrasi. ISBN: 9789606460296. [GR]
- Ch.5 Kritikos, G. (2022). Citizen Science in the context of actions against the Climate Crisis. In V. Papavasileiou, G. Xanthakou, & M. Kaila (Eds.), *Climate Crisis and... Crises. Critical crossroads of decisions and actions in the here and now* (pp. 192–208), Athens, Greece: Diadrasi. ISBN: 9789606460197. [GR]
- Ch.4 Kritikos, G., & Kalavasis, F. (2021). Educational Engineering: Transforming the school unit into a learning organisation through interdisciplinary reflections. In A. Kontakos & F. Kalavasis (Eds.), *Issues of Educational Design 12. The Systematic Educational Engineering of Communication and its Media in the Design and Development of Educational Units* (pp. 127–152), Athens, Greece: Diadrasi. ISBN: 9789606460074. [GR]
- Ch.3 Kalavasis, F., Moutsios-Rentzos, A., Kritikos, G., & Kontakos, A. (2019). ...the hidden charm of the interactions. In A. Kontakos & F. Kalavasis (Eds.), *Issues of Educational Design 11. The Complexity in the Design and Development of Educational Units* (pp. 77–97), Athens, Greece: Diadrasi. ISBN: 9786185059552. [GR]
- Ch.2 Kritikos, G., & Moutsios-Rentzos, A. (2018). Engineering of the interdisciplinary reflections within the school unit. In A. Kontakos & F. Kalavasis (Eds.), *Issues of Educational Design 10. Applications of the Systemic Approach and its Educational Engineering* (pp. 111–126), Athens, Greece: Diadrasi. ISBN: 9786185059811. [GR]
- Ch.1 Kalavasis, F., & Kritikos, G. (2017). The interdisciplinary cultivation in the identity of the school unit. In A. Kontakos & F. Kalavasis (Eds.), *Issues of Educational Design 9. The School Unit as an Intelligent, Hybrid and Moral Entity* (pp. 55–68), Athens, Greece: Diadrasi. ISBN: 9786185059668. [GR]

Workshops in Refereed Conferences

- W.6 Moutsios-Rentzos, A., Kalavasis, F., & Kritikos, G. (2022). The interdisciplinary reflection in Didactics of Mathematics: Educational material and Educators' education. In V. Chysikou, Ch. Stathopoulou, T. Triantafyllidis, K. Chatzikyriakou, A. Chronaki, & K. Sdrolias (Eds.), *Proceedings of the 9th Pan-Hellenic Conference of the Didactics of Mathematics Researchers' Union "Mathematical Education facing new and old challenges"* (pp. 786-788). Volos, Greece: Pedagogical Departments of University of Thessaly, ISBN: 978-618-82277-2-9. [GR]
- W.5 Moutsios-Rentzos, A., Kritikos, G., Pinnika, V., & Kalavasis, F. (2018). Co-constructing the teaching-learning space within and between Mathematics and Physics of a school unit: A workshop of systemic reflection. Workshop held in the framework of the Mathematical conference "The Mathematics in primary and secondary education through the theory and didactics", Arsakeia Psychikou, Athens, Greece, 01 December. [GR]
- W.4 Moutsios-Rentzos, A., Tatsis, K., Kritikos, G., & Kalavasis, F. (2018). Interdisciplinary approach in the construction of a problem in school mathematics and physics: a reflective workshop. In C. Skoumpourdi, & M. Skoumios (Eds.), *Proceedings of the 3rd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences* (pp. 148-155). Rhodes, Greece: University of the Aegean, ISBN: 978-960-86791-9-1. [GR]

- W.3 Kalavasis, F., Kontakos, A., Moutsios-Rentzos, A., & Kritikos, G. (2018). The obstacles in a learning city: individual and organizational defense mechanisms. Workshop in the framework of the 1st International Biennale of Practical Philosophy. University of the Aegean, Rhodes, Greece, 27-30 April. [GR]
- W.2 Moutsios-Rentzos, A., Kritikos, G., & Kalavasis, F. (2017). Functions of operations and operands in school mathematics and physics: a complex interdisciplinary (de)mathematised phenomenology. Workshop held in the context of the International Conference CIEAEM 69, Freie Universität Berlin, 15-19 July.
- W.1 Orfanos, S., & Kritikos, G. (2016). Workshop of Εργαστήριο for the integration of educational scenarios for Natural Sciences. In M. Skoumios, & C. Skoumpourdi (Eds.), *Proceedings of the 2nd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences* (pp. 778-788). Rhodes, Greece: University of the Aegean, ISBN: 978-960-86791-6-0. [GR]

Papers in Refereed International Conferences

- IC.12 Kritikos, G., Moutsios-Rentzos, A., Kalavasis, F., & Meimaris, M. (2022). Preservice kindergarten teachers' affective relationship with science and mathematics: a digital storytelling approach. Paper presented at the 74th OMEP International Conference "Early Childhood Education in the 21st century: new perspectives and dilemmas", Athens, Greece, 12-15 July.
- IC.11 Chatzinikola, C., Kritikos, G., Papavasileiou, V., & Kaila, M. (2022). Design of interactive digital storytelling about school nutrition and food waste in preschool education. Paper presented at the 74th OMEP International Conference "Early Childhood Education in the 21st century: new perspectives and dilemmas", Athens, Greece, 12-15 July.
- IC.10 Moutsios-Rentzos, A., Kalavasis, F., Meimaris, M., & Kritikos, G. (2021). "My Relationship with Mathematics": A Systemic Digital Storytelling-Centred Training Programme For Pre-Service Teachers. Paper presented at the online International Digital Storytelling Conference: Storytelling for a "Just" Future, Loughborough University, UK, 21-22 June.
- IC.9 Kritikos, G., Moutsios-Rentzos, A., Pinnika, V., & Kalavasis, F. (2020). Interdisciplinary Reflective Tool on School Science and Mathematics. In O. Levrini, & G. Tasquier (Eds.), *Proceedings of the ESERA 2019 Conference: The beauty and pleasure of understanding: engaging with contemporary challenges through science education*, Part 14 (co-ed. C. Fazio, & M. Welzel-Breuer) (pp. 1764-1773). Bologna, Italy: University of Bologna, ISBN 978-88-945874-0-1.
- IC.8 Moutsios-Rentzos, A., Pinnika, V., Kritikos, G., & Kalavasis, F. (2020). Appearances of the equals sign in primary school mathematics and natural sciences: an interdisciplinary, systemic approach. Paper presented at the International Conference CIEAEM 71, Braga, Portugal, 22-26 July 2019.
- IC.7 Kritikos, G., Moutsios-Rentzos, A., & Kalavasis, F. (2019). Educators' relationship with Mathematics through digital storytelling: Focusing on their reflections. In A. Moutsios-Rentzos, A. Giannakoulopoulos, & M. Meimaris (Eds.), *Proceedings of the International Digital Storytelling Conference: Current trends in digital storytelling: Research & Practices* (pp. 462-464). Zakynthos, Greece: Technological Educational Institute of Ionian Islands.
- IC.6 Moutsios-Rentzos, A., Kritikos, G., & Kalavasis, F. (2019). Interdisciplinary Mathematics Education and systemic school organisation. In *Proceedings of the First Congress of Greek Mathematicians (FCGM-2018)* (pp. 185-200). Athens, Greece.
- IC.5 Moutsios-Rentzos, A., Kritikos, G., & Kalavasis, F. (2018). Co-constructing teaching and learning spaces in and between mathematics and physics at school. Paper presented at the International Conference CIEAEM 70, Mostaganem, Algérie, 15-19 July 2018.

- IC.4 Kritikos, G., & Dimitracopoulou, A. (2013). The Impact of the Analogical Reflection on the Metacognitive Awareness. Paper presented at the Twentieth International Conference on Learning: Celebrating the 20th Learning Conference. Two Decades Exploring Innovation in Education, University of the Aegean, Rhodes, Greece, 11-13 July.
- IC.3 Kritikos, G., & Dimitracopoulou, A. (2011). ART (Analogical Reflection Tool): using analogies to promote reflection in science education. In W. Reinhardt, T. Ullmann, P. Scott, V. Pammer, O. Conlan, & A. Berlangue (Eds.), *Proceedings of the 1st European Workshop on Awareness and Reflection in Learning Networks* (pp. 130-137). Workshop held in the 6th European Conference on Technology Enhanced Learning: Towards Ubiquitous Learning, Palermo, Italy, ISSN 1613-0073.
- IC.2 Kritikos, G., & Dimitracopoulou, A. (2010). Self-reflection, comparative reflection and analogical reflection in the framework of metacognitive modelling activities using the ModellingSpace technological environment. In W. Kaminski, & M. Michelini (Eds.), *Proceedings of the GIREP-ICPE-MPTL 2010 International Conference: Teaching and Learning Physics today: Challenges? Benefits?* (pp. 642-650). Reims, France: University of Reims, ISBN: 978-88-97311-32-4.
- IC.1 Miaris, G., Adamidis, G., Bourganis, E., Balaskas, A., Boursianis, A., Ganatsos, T., Kritikos, G., Matzaridou, M., Moneda, M., Notis, D., Siachalou, S., Christodoulou, M., Ioannidou, M., Samaras, T., Vafiadis, E., Chrissoulidis, D. & Sahalos, J. (2004). Land planning of an antenna farm: Measurements and simulations aimed at relocation of broadcasting stations and/or reassignment of frequencies. In A. Deursen, P. Wouters, & S. Kapora (Eds.), *Proceedings of the 6th International Symposium on Electromagnetic Compatibility (EMC Europe)* (Vol. I, pp. 338-341). Eindhoven, The Netherlands, ISBN: 90-6144-990-1.

Papers in Refereed Pan-Hellenic Conferences

- HC.22 Kritikos, F., Galani, D., Oikonomou, M., & Tsakoumakis, I. (2023). Traditions goes to the contemporary «meta» kindergarten. In E. Theodoropoulou, & A. Tsimpidaki (Eds.), *Proceedings of the 2nd Pan-Hellenic Conference of Undergraduate Students of Pedagogical Departments of the University of the Aegean "Edutopia"* (pp. 231-250). Rhodes: School of Humanities, University of the Aegean, ISBN: 978-618-5840-00-6. [GR]
- HC.21 Kritikos, G., & Moutsios-Rentzos, A. (2019). The anxiety of future kindergarten teacher for Mathematics and Natural Sciences. In M. Kampeza, A. Vellopoulou, A. Giannopoulou, S. Deli, E. Didachou, E. Katsikonouri, V. Mantzouratou, & S. Saiti (Eds.), *Proceedings of the 12th Pan-Hellenic Conference OMEP "Enhancing interaction, supporting the expression: challenges and prospects in learning and teaching children of kindergarten and first-school age"* (pp. 512-523). Patra: University of Patra, ISBN: 978-618-84599-2-2. [GR]
- HC.20 Paraschou, V., Kritikos, G., & Kostas, A. (2021). Synchronous & Asynchronous Distance Learning during the 1st phase of the Pandemic due to COVID-19: Conclusions from the Fast Training Programme of the University of the Aegean. In Th. Mpratitsis (Eds.), *Proceedings of the 12th Panhellenic and International Conference "ICT in Education"* (pp. 41-48). ISBN: 978-618-83186-5-6. [GR]
- HC.19 Kritikos, G., Moutsios-Rentzos, A., & Kalavasis, F. (2021). Supporting interdisciplinary reflections in the modern teaching of Mathematics and Science: between live and distance learning. In A. Sofos, A. Costas, G. Fouzas, & V. Paraschou (Eds.), *Proceedings of the 1st International Conference «From the 20th to the 21st century in 15 days: The abrupt transition of our educational reality to digital environments. Attitudes-Perceptions-Scenarios-Perspectives-Proposals, 3-5 July 2020»* (pp. 266-274). Electronic edition: Hellenic Documentation Center. [GR]

- HC.18 Kritikos, G., Kostas, A., Kontakos, A., Kalavasis, F., & Vitsilaki, C. (2021). The Teacher during the transition of the school unit to the emergency online education: Reflections in the context of fast-paced training program of the University of the Aegean. In A. Sofos, A. Costas, G. Fouzas, & V. Paraschou (Eds.), *Proceedings of the 1st International Conference «From the 20th to the 21st century in 15 days: The abrupt transition of our educational reality to digital environments. Attitudes-Perceptions-Scenarios-Perspectives-Proposals, 3-5 July 2020»* (pp. 542-554). Electronic edition: Hellenic Documentation Center. [GR]
- HC.17 Kritikos, G., Moutsios-Rentzos, A., Pinnika, V., & Kalavasis, F. (2020). Interdisciplinary approach of the (co)teaching of mathematics and physics: The case of the capacitance of a capacitor. In A. Spyrtou, P. Papadopoulou, A. Zoupidis, G. Malandrakis, & P. Kariotoglou (Eds.), *Proceedings of the 11th Pan-Hellenic Conference on Science Education and New Technologies in Education. Redefining Teaching and Learning Science and Technology in the 21st Century*. (pp. 258-265). Florina, Greece: University of Western Macedonia, ISBN: 978-618-83267-7-4. [GR]
- HC.16 Kritikos, G., Moutsios-Rentzos, A., Pinnika, V., & Kalavasis, F. (2020). Interdisciplinary approach of the light reflection and refraction laws supported by Geogebra. In M. Iosifidou (Eds.), *Proceedings of the 10th Pan-Hellenic Conference of the educators for ICTs "Utilization of ICTs in Teaching"* (Vol. B, pp. 306-316). Syros, Greece: e-Network, ISBN 978-618-80768-7-7. [GR]
- HC.15 Kritikos, G., Fesakis, G., & Dimitracopoulou, A. (2020). Technological Learning Environment STEAM focusing on the teaching of magnetism in Kindergarten. Paper presented at the 11th Pan-Hellenic Conference SECE «Natural Sciences at the Preschool Education. Mapping the new twenty years of research and teaching practice». University of Ioannina, Online, 06-08 November 2020.
- HC.14 Kalavasis, F., Moutsios-Rentzos, A., Pinnika, V., Kritikos, G. (2019). The didactical linking between mathematics and physics during the transition from primary school to high school: a systemic approach to the manifoldness of the concept of equality. In K. Christou (Eds.) *Proceedings of the 8th Pan-Hellenic Conference of the Didactics of Mathematics Researchers' Union "Contemporary Approaches in Didactics of Mathematics"* (pp. 817-818). University of Cyprus, Nicosia, Cyprus, ISBN 978-9925-580-79-8.
- HC.13 Moutsios-Rentzos, A., Pinnika, V., Kritikos, G., & Kalavasis, F. (2018). Interdisciplinary investigations of the appearances of equality on mathematics and physics: a systemic approach. *Proceedings of the 35th Pan-Hellenic Conference of Mathematical Education with International Participation "Mathematics: research and education in the 21st century"* (pp. 759-769). Athens, Greece: Hellenic Mathematics Society, ISSN 1105-7955. [GR]
- HC.12 Moutsios-Rentzos, A., Kritikos, G., & Kalavasis, F. (2017). Interdisciplinary reflective paths between mathematics and physics: signs, objects, interpreters, and meanings. *Proceedings of the 34th Pan-Hellenic Conference of Mathematical Education with International Participation "Everything by numbers happens"* (pp. 643-653). Lefkada, Greece: Hellenic Mathematics Society, ISSN 1105-7955. [GR]
- HC.11 Kritikos, G., & Matzavinou, T. (2016). Teaching-training proposal for students in the framework of the EUSO experiments' competition. Πρόταση διδασκαλίας-προπόνησης μαθητών/τριών στο πλαίσιο του διαγωνισμού πειραμάτων EUSO. In M. Skoumios, & C. Skoumpourdi (Eds.), *Proceedings of the 2nd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences* (pp. 804-808). Rhodes, Greece: University of the Aegean, ISBN: 978-960-86791-6-0. [GR]

- HC.10 Danellakis, D., Kladogenis, D., Kritikos, G., Kostalias, K., & Petrou, A. (2016). Teaching proposal for the constantly accelerated motion through computational simulation and robotic emulation. *Proceedings of the 2nd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences* (pp. 799-803). Rhodes, Greece: University of the Aegean, ISBN: 978-960-86791-6-0. [GR]
- HC.9 Kritikos, G., & Dimitracopoulou, A. (2014). Composition of Metacognitive and Collaborative Learning Environment in Physics from individual software. In C. Skoumpourdi, & M. Skoumios (Eds.), *Proceedings of the 1st Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences* (pp. 805-822). Rhodes, Greece: University of the Aegean, ISBN: 978-960-86791-5-3. [GR]
- HC.8 Kritikos, G., & Dimitracopoulou, A. (2012). Reflection in collaborative modelling Physics activities within technological environment of real-time collaborative learning. *Proceedings of conference abstracts "The doctoral research in the Department of pre-school education sciences and educational design* (pp. 79-80). Rhodes, Greece: University of the Aegean. [GR]
- HC.7 Kritikos, Ch., Dovletoglou, D., Chatzinikola, Ch., & Kritikos, G. (2010). Electromagnetic Pollution: Research and Project in High School Environmental Education. *Proceedings of the 5th Pan-Hellenic Conference: "Environmental Education: The Crossroad of Education for the Sustainable Development"*. Ioannina, Greece: Pan-Hellenic Union of Educators for the Environmental Education.
- HC.6 Kritikos, G., & Dimitracopoulou, A. (2010). Analogical Reflection: Reflection on analogical models, through metacognitive modelling activities in technological environment. In E. Koltsakis, I. Salonikidis, & M. Dodontsis, (Eds.), *Proceedings of the 2nd Pan-Hellenic Educational Conference of Imathia: "Digital and Internet Applications in Education"* (pp. 1324-1337). Imathia, Greece: e-Diktyo, ISBN: 978-960-99301-0-9. [GR]
- HC.5 Kritikos, G. (2009). Comparison of the Modelling Layers in High School Kinematics: Primary, Secondary, Tertiary Layer using Modellus, Interactive Physics, SimQuest software. In N. Tzimopoulos, & A. Porpoda (Eds.), *Proceedings of the 5th Pan-Hellenic Conference of the educators for ICTs "Utilization of ICTs in Teaching"* (Vol. A, pp. 700-709). Syros, Greece: e-Diktyo, ISBN 978-960-89753-4-7. [GR]
- HC.4 Kritikos, G. (2009). Discrimination of the Modelling software in Science, based on the Modelling Layer: Primary, Secondary, Tertiary. In P. Kariotoglou, A. Spyrtou, & A. Zoupidis (Eds.), *Proceedings of the 6th Pan-Hellenic Conference on Science Education and New Technologies in Education"* (pp. 438-446). Florina, Greece: University of Western Macedonia, ISSN 1791-1281. [GR]
- HC.3 Kritikos, G. (2009). Modelling Layer concept using ICTs in Science teaching. In P. Politis (Eds.), *Proceedings of the 1st Educational Conference "Incorporation and Use of ICTs in Teaching"* (pp. 161-167). Volos, Greece: University of Thessaly, HICTE, ISSN 1791-9215. [GR]
- HC.2 Kritikos, G. (2008). Emergence of the qualitative characteristics of the Rate of Change. An example of teaching approach in Physics using ICTs. *Proceedings of the 25th Pan-Hellenic Conference on Mathematical Education with international participation "The Mathematical Education and the complex reality of the 21st century"* (pp. 652-663). Volos, Greece, ISSN 1105-7955. [GR]
- HC.1 Kritikos, G., & Dimitracopoulou, A. (2007). Collaborative inquiry modelling activities using the ModellingSpace software: Creation of Abstract-General models in Kinematics. In N. Dapontes, & N. Tzimopoulos (Eds.), *Proceedings of the 4th Pan-Hellenic Conference of the educators for ICTs "Utilization of ICTs in Teaching"* (Vol. B, pp. 306-316). Syros, Greece: e-Diktyo, ISBN 978-960-89753-0-9. [GR]

Scientific Activity

Journal Referee

- 1 International Journal of Science Education
- 2 The International Journal of Science, Mathematics and Technology Learning
- 3 Journal of Science Education and Technology
- 4 European Early Childhood Education Research Journal
- 5 The International Journal of Assessment and Evaluation
- 6 The International Journal of Adult, Community and Professional Learning
- 7 Euclid [GR]
- 8 Mentor [GR]

Conference Referee

- 20 Games and Learning Alliance Conference GALA 2022. Tampere, Finland, 30/11-02/12/2022.
- 19 Games and Learning Alliance Conference GALA 2021. La Spezia, Italy, 01-03/12/2021.
- 18 ESERA 2021 Conference "*Fostering scientific citizenship in an uncertain world*". Braga, Portugal, 30/08-03/09/2021.
- 17 Games and Learning Alliance Conference GALA 2020. Laval, France, 09-11/12/2020.
- 16 International Conference on the Foundations of Digital Games (FDG20). Malta, 15-18/09/2020.
- 15 6th Pan-Hellenic Conference eTwinning "*Exploitation of Information and Communication Technologies in collaborative school projects*", eTwinning, Greece, 03-05 July 2020.
- 14 Games and Learning Alliance Conference GALA 2019. Athens, Greece, 27-29/11/2019.
- 13 3rd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences. University of the Aegean, Rhodes, Greece, 09-11 November 2018.
- 12 5th Pan-Hellenic Educational Conference of Central Macedonia: "*Exploitation of ICT in teaching practice*", Pan-Hellenic Union of Educators "Michalis Dertouzos", Thessaloniki, Greece, 27-29 April 2018.
- 11 4th Pan-Hellenic Conference eTwinning "*Exploitation of Information and Communication Technologies in collaborative school projects*", eTwinning, Patra, Greece, 24-26 November 2017.
- 10 3rd Pan-Hellenic Conference eTwinning "*Exploitation of Information and Communication Technologies in collaborative school projects*", eTwinning, Patra, Greece, 25-27/11/2016.
- 9 2nd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences. University of the Aegean, Rhodes, Greece, 14-16 October 2016.
- 8 Pan-Hellenic Conference "*Teaching approaches and experimental teaching in Natural Sciences* », Pedagogical Department of Primary Education AUTH, Department of Physics AUTH, Pan-Hellenic Association of Directors' of Laboratory Centers of Natural Sciences (PANEKFE), Thessaloniki, Greece, 16-17 April 2016.
- 7 4th Pan-Hellenic Educational Conference of Central Macedonia: "*Exploitation of ICT in teaching practice*", Pan-Hellenic Union of Educators "Michalis Dertouzos", Thessaloniki, Greece, 8-9 April 2016.
- 6 2nd Pan-Hellenic Conference eTwinning "*Exploitation of Information and Communication Technologies in collaborative school projects*", eTwinning, Patra, Greece, 13-15 November 2015.

- 5 1st Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences. University of the Aegean, Rhodes, Greece, 17-18/10/2014.
- 4 3rd Pan-Hellenic Educational Conference of Imathia: "*Digital and Internet Applications in Education*", e-Network, Pan-Hellenic Union of Educators "Michalis Dertouzos", Pan-Hellenic Physical Society Imathias, Imathia, Greece, 04-06 April 2014.
- 3 7th Pan-Hellenic Conference of the educators for ICTs "*Utilization of ICTs in Teaching*", e-Network, Syros, Greece, 21-23 June 2013.
- 2 6th Pan-Hellenic Conference of the educators for ICTs "*Utilization of ICTs in Teaching*", e-Network, Syros, Greece, 06-08 May 2011.
- 1 2nd Pan-Hellenic Educational Conference of Imathia: "*Digital and Internet Applications in Education*", e-Network, Pan-Hellenic Union of Educators "Michalis Dertouzos", Pan-Hellenic Physical Society Imathias, Peripheral Administration of Education of the Central Macedonia, Imathia, Greece, 23-25 April 2010.

Member of Scientific Committees in Conferences

- 17 2nd Pan-Hellenic Conference of Undergraduate Students of Pedagogical Departments of the University of the Aegean "Edutopia". University of the Aegean, Rhodes, 27-28/05/2023.
- 16 Games and Learning Alliance Conference GALA 2022. Tampere, Finland, 30/11-02/12/2022.
- 15 Games and Learning Alliance Conference GALA 2021. La Spezia, Italy, 01-03/12/2021.
- 14 Games and Learning Alliance Conference GALA 2020. Laval, France, 09-11 December 2020.
- 13 International Conference on the Foundations of Digital Games (FDG20). Malta, 15-18 September 2020.
- 12 Games and Learning Alliance Conference GALA 2019. Athens, Greece, 27-29 November 2019.
- 11 10th Pan-Hellenic Conference of the educators for ICTs "*Utilization of ICTs in Teaching*". Rhodes, Greece, 12-14 April 2019.
- 10 3rd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences. University of the Aegean, Rhodes, Greece, 09-11 November 2018.
- 9 Anniversary 10th International Scientific Meeting of Educational Design with international participation "*The Complexity in the Design and Development of Educational Units*", MSc "Models of design and development of educational units", University of the Aegean, Rhodes, 18-19/05/2018.
- 8 9th Scientific Conference of Educational Design with International Participation "*Models for the development of educational units: Applications of the systemic approach and its educational engineering*", Post-graduate programme "Models of design and development of educational units", University of the Aegean, Rhodes, Greece, 02-03 June 2017.
- 7 2nd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences. University of the Aegean, Rhodes, Greece, 14-16 October 2016.
- 6 8th Scientific Conference of Educational Design with International Participation "*The school unit as an intelligent, hybrid and moral entity*", Post-graduate programme "Models of design and development of educational units", University of the Aegean, Rhodes, Greece, 27-28 May 2016.
- 5 Pan-Hellenic Conference "*Teaching approaches and experimental teaching in Natural Sciences* », Pedagogical Department of Primary Education AUTH, Department of Physics AUTH, Pan-Hellenic Association of Directors' of Laboratory Centers of Natural Sciences (PANEFKE), Thessaloniki, Greece, 16-17 April 2016.

- 4 1st Conference "*Interdisciplinary Experience and Learning*", Post-graduate programme "Didactics of Mathematics, Science, and Information and Communication Technologies in Education: Interdisciplinary approach", University of the Aegean, Rhodes, Greece, 26 March 2016.
- 3 4th Pan-Hellenic Educational Conference of Central Macedonia: "*Exploitation of ICT in teaching practice*", Pan-Hellenic Union of Educators "Michalis Dertouzos", Thessaloniki, Greece, 8-9 April 2016.
- 2 Pan-Hellenic Conference "*Teaching approaches and experimental teaching in Natural Sciences* », Pedagogical Department of Primary Education AUTH, Department of Physics AUTH, Pan-Hellenic Association of Directors' of Laboratory Centers of Natural Sciences, Thessaloniki, Greece, 16-17 April 2016.
- 1 1st Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences. University of the Aegean, Rhodes, Greece, 17-18 October 2014.

Member of Organising Committees of International Conferences

- 4 Young ERME Summer School – YESS 10, University of the Aegean, Rhodes, Greece, 21-26/04/2020 (Vice-chair of the Local Organising Committee).
- 3 International Workshop on Gravitation and Cosmology, Institute of Space Sciences, Rhodes, Greece, 02-05/07/2017 (Member of the Local Scientific Advisory Board).
- 2 CIEAEM 64 International Conference: "*Mathematics Education and Democracy: learning and teaching practices*", University of the Aegean, Rhodes, Greece, 23-27/07/2012.
- 1 8th International Conference on Computer Supported Collaborative Learning: "*CSCL Practices*", University of the Aegean, Rhodes, Greece, 08-13/06/2009.

Member of Organising Committees of Pan-Hellenic Conferences

- 6 3rd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences. University of the Aegean, Rhodes, Greece, 09-11 November 2018.
- 5 2nd Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences. University of the Aegean, Rhodes, Greece, 14-16 October 2016.
- 4 1st Pan-Hellenic Conference with International Participation for the Educational Material on Mathematics and Natural Sciences. University of the Aegean, Rhodes, Greece, 17-18 October 2014.
- 3 3rd Pan-Hellenic Conference of the Union of Researchers in Mathematical Education, Learning Technologies and Educational Engineering Laboratory, University of the Aegean, Rhodes, Greece, 29-31 October 2009.
- 2 The Mathematics of children on pre-school age and the practice of kindergarten, Learning Technologies and Educational Engineering Laboratory, University of the Aegean, Rhodes, Greece, 29 May 2008.
- 1 The digital world of the pre-school education, Learning Technologies and Educational Engineering Laboratory, University of the Aegean, Rhodes, Greece, 17 May 2008.

Member of Scientific Committees of Student Competitions

- 5 Team leader of Rhodes for the 3rd Balkan Physics Olympiad, Balkan Physical Union, European Physical Union, University of the Aegean, Rhodes, 25 September 2021.

- 4 Local Competition for the 15th European Union Science Olympiad (EUSO) 2017. Laboratory Centre of Natural Sciences, South Dodecanese, Greece, 10 December 2016.
- 3 Local Competition for the 14th European Union Science Olympiad (EUSO) 2016. Laboratory Centre of Natural Sciences, South Dodecanese, Greece, 05 December 2015.
- 2 Local Competition for the 13th European Union Science Olympiad (EUSO) 2015. Laboratory Centre of Natural Sciences, South Dodecanese, Greece, 13 December 2014.
- 1 Local Competition for the 11th European Union Science Olympiad (EUSO) 2013. Laboratory Centre of Natural Sciences, South Dodecanese, Greece, 08 December 2012.

Evaluator in Student Competitions

- 4 Pan-Hellenic Students' Competition for the European Union Science Olympiad (EUSO) 2016, Pan-Hellenic Association of Directors' of Laboratory Centers of Natural Sciences, Athens, Greece, 23 January 2016.
- 3 Pan-Hellenic Students' Competition for the European Union Science Olympiad (EUSO) 2016, Pan-Hellenic Association of Directors' of Laboratory Centers of Natural Sciences, Athens, Greece, 07 January 2015.
- 2 6th Pan-Hellenic Competition of Educational Websites, e-Network, Pan-Hellenic Union of Educators "Michalis Dertouzos", Syros, Greece, 21-23 June 2013.
- 1 5th Pan-Hellenic Competition of Educational Websites, e-Network, Pan-Hellenic Union of Educators "Michalis Dertouzos", Syros, Greece, 06-08 May 2011.

Member of Scientific Associations

- 1 European Science Education Research Association (ESERA), www.esera.org
- 2 Groupe International de Recherche sur l'Enseignement de la Physique (GIREP), www.girep.org
- 3 European Association for Technology Enhanced Learning (EATEL), www.ea-tel.eu
- 4 European Physical Society (EPS), www.eps.org
- 5 Pan-Hellenic Physical Society (HPS), www.eef.gr
- 6 Association for Science and Technology Education, www.enephet.gr
- 7 Pan-Hellenic Scientific Association of Information and Communication Technologies in Education, www.etpe.gr
- 8 Pan-Hellenic Association for the Exploitation of ICT in Education "e-Network", www.e-diktyo.eu
- 9 Pan-Hellenic Association of Teachers for the Exploitation of ICT in Science Teaching "Michalis Dertouzos", www.ekped.gr
- 10 Association for the propagation of Science, sydife.wordpress.com

Production of Digital Material

Software Design and Development

ART (Analogical Reflection Tool)

Educational Software for Natural Sciences based on the Analogical Reasoning and Reflection. It supports English and Greek language. Available as freeware at the "Pan-Hellenic Ministry of Education Official Educational Portal" (e-yliko.gr/Lists/List30/openSoft.aspx).

Design, Development, and Administration of Websites

- 1 www.isls.org/cscl/2009 (International Conference CSCL2009)

- 2 ltee.aegean.gr/yess10 (Summer School YESS 10 - Young ERME Summer School)
- 3 ltee.aegean.gr/cieaem64 (International Conference CIEAEM64)
- 4 ltee.aegean.gr/sekpy (Pan-Hellenic Conference with International Participation)
- 5 ltee.aegean.gr (Learning Technology and Education Engineering Laboratory)
- 6 pse.aegean.gr/dithenet (Post-graduate programme)
- 7 users.sch.gr/gkritikos/fl ("Physicists in High School", Project in Secondary Education)
- 8 ekfe.dod.sch.gr (Laboratory Centre of Natural Sciences, South Dodecanese)