

CURRICULUM VITAE

Personal Information

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Educational Information

Yildiz Technical University	2014 - 2021	Ph. D. in Science Education
Istanbul University	2011 - 2014	M. Sc. in Science Education
Bogazici University	2006 - 2011	B. Sc. in Science Education

Professional Experience

April 2024 – ...	Assoc. Prof. Dr. Bogazici University, Faculty of Education, Department of Mathematics and Science Education
September 2022 – April 2024	Assist. Prof. Dr. Bogazici University, Faculty of Education, Department of Mathematics and Science Education
July 2021 - September 2022	Postdoctoral Researcher Bogazici University, Faculty of Education, Department of Mathematics and Science Education
February 2017 - April 2021	Research Assistant Yildiz Technical University, Faculty of Education, Department of Mathematics and Science Education
July 2013 - January 2017	Research Assistant Yildiz Technical University, Faculty of Education, Department of Primary Education

September 2012 - June 2013

Research Assistant

Kastamonu University, Faculty of Education, Department of Primary Education

June 2012 - August 2012

Research Assistant

Aksaray University, Faculty of Education, Department of Primary Education

Dissertations

Kapici, H. O. (2021). *The Effects of Virtual and Hands-on Laboratory Environments on the Conceptual Knowledge, Inquiry Skills and Attitudes of Middle School Students*. Doctoral Dissertation, Yildiz Technical University.

Advisor: Assoc. Prof. Dr. Hakan Akcay (Yildiz Technical University)

Co-Advisor: Prof. Dr. Ton de Jong (University of Twente, the Netherlands)

Kapıcı, H. Ö. (2014). *Ortaokul Fen ve Teknoloji Ders Kitaplarındaki Maddenin Tanecikli Yapısı ile İlgili Görsellerin İncelenmesi [Examination of Images Regarding the Particulate Nature of Matter in Middle School Science Textbooks]*. Master's Thesis, Istanbul University.

Advisor: Assoc. Prof. Dr. Funda Savasçi-Acikalin (Istanbul University)

Publications

Articles published in journals that are indexed in the Web of Science (SCI, SCI-E, or SSCI)

Benek, I., Akcay, B., & Kapici, H. O. (In press). Engineering design-based STEM learning for gifted elementary students: Effects on STEM attitudes, career interests, and design thinking. *International Journal of Technology and Design Education*, <https://doi.org/10.1007/s10798-026-10112-8>

Kapici, H. O. (2026). The impact of digital inquiry versus classroom-based instruction on learners' outcomes. *Journal of Science Education and Technology*, 35(1), 217-236.

de Jong, T., Georgiou, M., Kapici, H. O., Schwichow, M., & Visser, T. C. (2025). Why not have the best of two worlds? How to use direct instruction principles in inquiry-based instructional design. *Learning and Individual Differences*, 124, 102785.

Kapici, H. O. (2025). Does inquiry-based learning work better in regular classrooms or computer-based settings? *Instructional Science*, 53(4), 705-728.

Kapici, H. O., & Akcay, H. (2023). Improving student teachers' TPACK self-efficacy through lesson planning practice in the virtual platform. *Educational Studies*, 49(1), 76-98.

- Kapici, H. O., Akcay, H., & Cakir, H. (2022). Investigating the effects of different levels of guidance in inquiry-based hands-on and virtual science laboratories. *International Journal of Science Education*, 44(2), 324-345.
- Kapici, H. O., Akcay, H., & Koca, E. E. (2022). Comparison of the quality of written scientific arguments in different laboratory environments. *International Journal of Science and Mathematics Education*, 20(1), 69-88.
- Kapici, H. O., Akcay, H., & de Jong, T. (2020). How different laboratory environments influence students' attitudes toward science courses and laboratories. *Journal of Research on Technology in Education*, 52(4), 534-549.
- Kapici, H. O., Akcay, H., & de Jong, T. (2019). Using hands-on and virtual laboratories alone or together – which works better for acquiring knowledge and skills? *Journal of Science Education and Technology*, 28(3), 231-250.
- Kapici, H. O., & Ilhan, G. O. (2016). Pre-service teachers' attitudes toward socio-scientific issues and their views about nuclear power plants. *Journal of Baltic Science Education*, 15(5), 642-652.
- Kapici, H. O., & Savasci-Acikalin, F. (2015). Examination of visuals about the particulate nature of matter in Turkish middle school science textbooks. *Chemistry Education Research and Practice*, 16(5), 518-536.

Articles published in journals that are indexed in ESCI, SCOPUS, and ERIC

- Samsudin, A., Zahran, M., & Kapici, H. O. (In press). Integrating multimedia learning principles in middle school science: A cross-cultural study of computer-based optics instruction in Turkey and Indonesia. *Computers in the Schools*, 1-23.
<https://doi.org/10.1080/07380569.2026.2655613> (ESCI)
- Kapici, H. O. (2026). The effects of a design of inquiry-based learning spaces in science education: A mixed-method design study. *The Teacher Educator*, 61(2), 209-233. (SCOPUS)
- Kapici, H. Ö., & Coştu, F. (2023). Investigating the effects of different laboratory environments on gifted students' conceptual knowledge and science process skills. *Turkish Journal of Education*, 12(2), 94-105. (ESCI & TR Dizin)
- Kapici, H. O., & Costu, F. (2023). Gifted pupils' learning experience in virtual laboratories. *Journal of Turkish Science Education*, 20(1), 1-9. (SCOPUS)
- Arslan, K., Akcay, H., & Kapici, H. O. (2023). How do the images of scientists in secondary school science textbooks affect students' perceptions of scientists? *International Journal on Social and Education Sciences*, 5(2), 190-224. (ERIC)
- Kapici, H. O. (2023). From symbolic representation to submicroscopic one: Preservice science teachers' struggle with chemical representation levels in chemistry. *International Journal of Research in Education and Science*, 9(1), 134-147. (ERIC)

- Ivgin, A. B., Akçay, H., & Kapici, H. O. (2021). Middle school students' perceptions of scientists and views about to become a scientist. *International Journal on Social and Education Sciences*, 3(3), 410-428. (ERIC)
- Toprak Yallihep, E. S., Akçay, H., & Kapici, H. O. (2021). Impacts of serious games on middle school students' science achievement and attitudes towards science. *International Journal of Technology in Education and Science*, 5(2), 203-212. (ERIC)
- Cayvaz, A., Akçay, H., & Kapici, H. O. (2020). Comparison of simulation-based and textbook-based instructions on middle school students' achievement, inquiry skills, attitudes towards science. *International Journal of Education in Mathematics, Science and Technology*, 8(1), 34-43. (ESCI)
- Kapici, H. O., & Akçay, H. (2020). Enhancing pre-service science teachers' inquiry skills in hands-on and virtual laboratory environments. *Themes in e-Learning*, 13, 21-32. (ERIC)
- Akçay, H., Kapici, H. O., & Akçay, B. (2020). Analysis of the representations in Turkish middle school science textbooks from 2002 to 2017. *Participatory Educational Research*, 7(3), 192-216. (SCOPUS)
- Keskin, C., Akçay, H., & Kapici, H. O. (2020). The effects of environmental science e-projects on middle school students' behaviors and attitudes. *International Journal of Technology in Education and Science*, 4(2), 160-167. (ERIC)
- Kapici, H. O., & Akçay, H. (2018). Choices of pre-service science teachers about laboratory environments: Hands-on or hands-off? *World Journal on Educational Technology: Current Issues*, 10(1), 41-51. (SCOPUS)
- Kapici, H. O., Akçay, H., & Yager, R. (2017). Comparison of science-technology-society approach and textbook oriented instruction on students' abilities to apply science concepts. *International Journal of Progressive Education*, 13(2), 18-28. (ERIC)
- Akçay, H., Kapici, H. O., & Yager, R. (2017). Using newspapers and advertisements as a focus for science teaching and learning. *Universal Journal of Educational Research*, 5(1), 99-103. (ERIC)
- Kapici, H. O., & Akçay, H. (2016). Middle school students' attitudes toward science, scientists, science teachers and classes. *The Asia-Pacific Forum on Science Learning and Teaching*, 17(1), 1-22. (SCOPUS)

Articles published in journals that are indexed in TR DİZİN

- Kapici, H. O., & Akçay, H. (2025). Adapting and validating a differentiated cognitive load scale in the Turkish context. *Educational Academic Research*, 59, 130-138.
- Işın, O., Akçay, H., & Kapıcı, H. Ö. (2020). Fen öğrenme motivasyon ölçeğinin Türkçe 'ye uyarlanması [Adaptation of science motivation questionnaire into Turkish]. *Akdeniz Eğitim Araştırmaları Dergisi*, 14(31), 532-556.

Kapıcı, H. Ö., & Akçay, H. (2016). Fen bilgisi öğretmenleri, fen bilgisi öğretmen adayları ve maarif müfettişlerinin fen öğretimi ve öğrenimine yönelik inanışlarının karşılaştırılması [Comparisons of science teachers', pre-service science teachers' and superintendents' beliefs intended for science teaching and learning]. *Mustafa Kemal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 13(36), 153-168.

Articles published in journals that are indexed in other international indexes

Kapıcı, H. O., & Akçay, H. (2016). Particulate nature of matter misconceptions held by middle and high school students in Turkey. *European Journal of Education Studies*, 2(8), 43-58.

Erol, G., Akçay, H., Bayram, H., & Kapıcı, H. Ö. (2016). Asit ve baz konusunun öğrenme amaçlı çoklu yazma etkinlikleri kullanılarak öğretiminin değerlendirilmesi [Evaluation of using multimodal writing activities for Teaching acid and base concepts]. *Eğitim, Bilim ve Teknoloji Araştırmaları Dergisi*, 1(2), 94-102.

Kapıcı, H. O., Akçay, H., & İnaltekin, T. (2015). The impact of technology based learning on the beliefs and attitudes of pre-service teachers. *International Journal of Humanities and Education*, 1(2), 154-167.

Kapıcı, H. O., & Umdü Topsakal, Ü. (2015). Science and non-science teachers' views about astronomy diagrams in middle school science textbooks. *Eurasian Academy of Sciences Social Sciences Journal*, 2, 1-9.

Book Chapters

Coştu, F., & Kapıcı, H. Ö. (2025). Üstün yetenekli çocukların fen eğitiminde çevrimiçi laboratuvar kullanımı [The use of online laboratories in science education for gifted children]. In M. D. Gul, & Z. Ayık (Eds.), *Üstün yetenekli öğrenciler için fen eğitimi* [Science education for gifted students] (pp.167-183). Nobel Publishing.

Kapıcı, H. Ö., İnaltekin, T., & Akçay, H. (2021). İlkokul döneminde STEM eğitimi [STEM education in primary education]. In H. Vatansever Bayraktar, & K. A. Kırkıç (Eds.), *Kuramdan uygulamaya temel eğitimde güncel konular* [Current issues in primary education from theory to practice] (pp.53-74). Efe Akademi Publishing.

İnaltekin, T., Kapıcı, H. Ö., & Akçay, H. (2021). İlkokul eğitiminde uzaktan öğretim [Distance education in primary education]. In H. Vatansever Bayraktar, & K. A. Kırkıç (Eds.), *Kuramdan uygulamaya temel eğitimde güncel konular* [Current issues in primary education from theory to practice] (pp.129-152). Efe Akademi Publishing.

Kapıcı, H. Ö., & Akçay, H. (2020). Fen ve teknoloji okuryazarlığı [Scientific literacy]. In A. Öztuna (Ed.), *Fen öğretimi* [Teaching science] (pp. 49-68). Nobel Publishing.

Kapıcı, H. O., & Akçay, H. (2019). Cognitive theories of learning on virtual science laboratories. In O. T. Ozturk & W. Wu (Eds.), *Research highlights in education and science 2019* (pp. 107-126). ISRES Publication.

Kapıcı, H. Ö., & Akçay, H. (2019). Fen eğitiminde sanal laboratuvarlar [Virtual laboratories in science education]. In B. Akçay (Ed.), *Fen öğrenme ve öğretim yaklaşımları* [Learning and teaching approaches in science education] (pp. 331-344). Nobel Publishing.

Kapıcı, H. O. (2017). Model-based science education: The case of Turkey. In U. Umdü Topsakal & G. Özkan (Eds.), *New educational trends in Turkey* (pp. 41-57). Trafford Publishing.

Kapıcı, H. Ö., & Savaşçı-Açıkalın, F. (2017). Fen eğitiminde ders kitapları ve çoklu gösterimler [Textbooks in science education and multiple representations]. In B. Akçay (Ed.), *Fen bilimleri eğitimi alanındaki öğretim ve öğrenme yaklaşımları* [Teaching and learning approaches in science education] (pp. 227-240). Pegem A Publishing.

Akçay, H., & Kapıcı, H. Ö. (2016). Hayat bilgisi dersi öğretim programı ve temel beceriler [Curriculum of life science course and basic skills]. In S. Güven & S. Kaymakçı (Eds.), *Hayat bilgisi öğretimi* [Teaching life sciences] (pp. 100-124). Pegem A Publishing.

Conference Papers presented in the (inter)national conferences and published in the abstract books

Aydin, Z., Kapıcı, H. O., Akçay Yuyucu, S., Yuyucu, M. E., & Eren, B. (2026, September). *Yapay zeka destekli ve geleneksel ders planlamanın fen bilgisi öğretmen adaylarının öğretim performansı ve pedagojik yansımaları açısından incelenmesi* [Examining AI-supported and traditional lesson planning in terms of pre-service science teachers' instructional performance and pedagogical reflections]. Paper presented at the 17th National Science and Mathematics Education Congress, Mugla, Türkiye.

Sakalli, Z., & Kapıcı, H. O. (2026, September). *Okul öncesi çocukların matematik ve fen kavramlarına ilişkin akıl yürütme örüntülerinin incelenmesi* [Exploring preschool children's reasoning patterns in mathematics and science]. Paper presented at the 17th National Science and Mathematics Education Congress, Mugla, Türkiye.

Altuntas, R., Karabacak, N., & Kapıcı, H. O. (2025, August). *The power of one or many: Analyzing students' learning in a computer-based learning environment*. Paper presented at the 16th Biannual Conference of the European Science Education Research Association (ESERA), Copenhagen, Denmark.

Flegr, S., Kapıcı, H. O., Küchemann, S., & Kuhn, J. (2025, August). *Evaluating middle school students' attention distribution during learning in a virtual reality environment*. Paper presented at the 16th Biannual Conference of the European Science Education Research Association (ESERA), Copenhagen, Denmark.

Kapıcı, H. O. (2024, September). *Improving teachers' different aspects of TPACK and technology integration skills*. Paper presented at the EARLI SIG 20 & SIG 26 Conference, Berlin, Germany.

Kapıcı, H. O., & Akçay, H. (2024, September). *İçsel, dışsal ve etkili bilişsel yükü ölçen ölçeğin Türkçe'ye uyarlanması* [Adaptation of the scale that measures intrinsic,

extraneous and germane cognitive load in Turkish]. Paper presented at the 16th National Science and Mathematics Education Congress, Edirne, Türkiye.

Kapici, H. O. (2023, September). *Sorgulamaya dayalı öğrenmenin gerçek veya sanal sınıf ortamında öğrenme çıktılarına etkisi* [The effects of inquiry-based learning on learning outcomes in regular or virtual learning environments]. Paper presented at the 15th National Science and Mathematics Education Congress, Kars, Türkiye.

Kapici, H. O. (2023, August). *The effects of inquiry-based learning in a virtual learning environment*. Paper presented at the 15th Biannual Conference of the European Science Education Research Association (ESERA), Cappadocia, Turkey.

Kapici, H. O., Akcay, H., & Cakir, H. (2021, August). *Different levels of guidance in hands-on and virtual laboratories - what works best when?* Paper presented at the 19th Biannual EARLI Conference, Gothenburg, Sweden.

Kapici, H. O., Akcay, H., & Koca, E. E. (2021, June). *Assessing the written arguments developed in hands-on and virtual laboratories*. Paper presented at the Annual Meeting of the International Society of the Learning Sciences (ISLS), Bochum, Germany.

Akcay, H., Kapici, H. O., & Inaltekin, T. (2021, April). *Virtual laboratories in lesson plans: How they were inserted*. Paper presented at the International Conference on Humanities, Social and Education Sciences, New York, USA.

Kapici, H. O. (2019, April). *Technology supported lesson plan draft: Graasp platform*. Paper presented at the International Field Education Material Symposium, Istanbul, Turkey.

Kapici, H. O., Akcay, H., & de Jong, T. (2018, July). *Learning science in hands-on and online laboratories*. Paper presented at Junior Researcher of EARLI (JURE), Antwerp, Belgium.

Kapici, H. O., Koca, E. E., & Akcay, H. (2018, April). *Effects of writing to learn activities in hands-on and virtual laboratory environments*. Paper presented at the International Conference on Education in Mathematics, Science and Technology, Mugla, Turkey.

Kapici, H. O., & Akcay, H. (2018, April). *Examination of visuals about structure of matter in ninth grade chemistry textbooks*. Paper presented at the International Symposium on Textbooks, Istanbul, Turkey.

Kapici, H. O., de Jong, T., & Akcay, H. (2016, May). *Learning science by online experience: Go-Lab*. Paper presented at the International Conference on Education in Mathematics, Science and Technology, Mugla, Turkey.

Kapici, H. O. & Savasci-Acikalın, F. (2014, May). *Examination of visuals in middle school science textbooks*. Paper presented at the International Conference on Education in Mathematics, Science and Technology, Konya, Turkey.

Kapici, H. O. & Koc, I. (2013, June). *In-service science teachers' use of instructional materials*. Paper presented at the International Congress of Educational Research, Canakkale, Turkey.

Invited Speakers and Seminars

Kapici, H. O. (2023, October). *How to make inquiry learning effective in computer-based settings: the role of guidance*. International Joint Seminar on Education, Social Science, and Applied Science, Labuan Bajo, Indonesia.

Kapici, H. O. (2023, October). *How to write a research proposal*. Young Scholar Symposium on Science and Mathematics Education, Universitas Islam Negeri Raden Intan Lampung, Indonesia.

Kapici, H. O. (2023, October). *The effects of inquiry-based virtual learning environments on gifted students*. The 9th Mathematics, Science, and Computer Science Education International Seminar, Bandung, Indonesia.

Kapici, H. O. (2022, March). *Using hands-on and virtual laboratories alone or together – which works better for acquiring knowledge and skills?* Bogazici University, Faculty of Education, Faculty Seminar Series, Istanbul, Turkey.
<https://www.youtube.com/watch?v=GXowTMnJJMg>

Kapici, H. O. (2019, December). *Kimya eğitiminde sanal laboratuvarlar [Virtual laboratories in chemistry education]*. Samiha Ayverdi Anatolian High School, Istanbul, Turkey.

Citations and h-index Info

Google Scholar: citations – 1103; h-index 18 (as of September 2026)

Web of Science: citations – 219; h-index 7 (as of September 2026)

SCOPUS: citations – 366; h-index 8 (as of September 2026)

Projects

Researcher in the project entitled “Removing barriers in digital and STEM” funded by TUBITAK (The Scientific and Technological Research Council of Turkey), Grant Number 124K983, August 2024 -

Researcher in the project entitled “GIFTLED: A Learn by Design – Digital Toolkit to Include Gifted Individuals in STEAM Education,” funded by EU ERASMUS+, Grant Number 2022-1-PL01-KA220-SCH000087644, 31 December 2022-30 December 2024.

Principal investigator of the project entitled “Examining Students’ Interactions with Different Inquiry-Based Learning Environments through Learning Process Analyses,” funded by TUBITAK (The Scientific and Technological Research Council of Turkey) Grant Number 1059B192201329, May 2024-August 2024.

Principal investigator of the project entitled “Teaching Science on the Virtual Platform: Inquiry-Based Learning Spaces,” funded by TUBITAK (The Scientific and Technological Research Council of Turkey) Grant Number 118C505, July 2021 – December 2023.

Principal investigator of the project entitled “Finnish and Turkish pre-service science teachers’ learning of science and knowledge construction in different laboratory environments,” funded by the University of Jyväskylä, October 2021 - September 2022.

Researcher in the project entitled “Yarınımı bugünden düşünüyorum: Ekoyıldızlar iş başında” funded by TUBITAK (The Scientific and Technological Research Council of Turkey) Grant Number 2765617, June 2017 - June 2018.

Scientific Events

Go-Lab (Global Online Science Labs for Inquiry Learning in Schools) Winter School (2019, March), Cascais, Portugal.

Go-Lab (Global Online Science Lab for Inquiry Learning in Schools) Summer School (2019, July), Marathon, Greece.

Next-Lab (Next Generation Stakeholders and Next Level Ecosystem for Collaborative Science Education with Online Labs) Winter School (2019, November), Enschede, the Netherlands.

Awards, Grants, & Scholarships

Academic Publication Award - the Scientific and Technological Research Council of Turkey (TUBITAK), 2025

Fellowship for the registration fee of Domestic Scientific Events - the Scientific and Technological Research Council of Turkey (TUBITAK 2224-B), 2024

Academic Incentive Award – Bogazici University, 2024

Fellowship for the registration fee of Domestic Scientific Events - the Scientific and Technological Research Council of Turkey (TUBITAK 2224-B), 2023

Academic Incentive Award – Bogazici University, 2023

Academic Publication Award - the Scientific and Technological Research Council of Turkey (TUBITAK), 2023

Academic Publication Award - the Scientific and Technological Research Council of Turkey (TUBITAK), 2022

Fellowship for the registration fee of the EARLI 2021 Conference

Fellowship for the registration fee of the ISLS 2021 Conference

Academic Publication Award - the Scientific and Technological Research Council of Turkey (TUBITAK), 2021

Academic Incentive Award - Yildiz Technical University, 2020

Academic Incentive Award - Yildiz Technical University, 2019

Academic Publication Award - the Scientific and Technological Research Council of Turkey (TUBITAK), 2019

Academic Incentive Award - Yildiz Technical University, 2016

Academic Publication Award - the Scientific and Technological Research Council of Turkey (TUBITAK), 2016

Academic Publication Award - the Scientific and Technological Research Council of Turkey (TUBITAK), 2015

Academic Incentive Award - Yildiz Technical University, 2015

Memberships in Scientific Associations

The European Association for Research on Learning and Instruction (EARLI)

EARLI SIG 7 Technology-enhanced learning and instruction

EARLI SIG 20 Inquiry learning

European Science Education Research Association (ESERA)

ESERA SIG 10 AI in Science Education

Professional Services

Journals Referred to

Research in Science Education (SSCI)

Journal of Science Education and Technology (SSCI)

Science & Education (SSCI)

International Journal of Science and Mathematics Education (SSCI)

Journal of Research on Technology in Education (SSCI)

Education and Information Technologies (SSCI)

Chemistry Education Research and Practice (SSCI)

Journal of Chemical Education (SSCI)

Frontiers in Psychology (SSCI)

Humanities & Social Sciences (SSCI)

Cukurova University Faculty of Education Journal (ESCI)

Education Sciences (ESCI)

Journal of Turkish Science Education (SCOPUS)

Technological Skills

Statistical Programs: SPSS

Microsoft Office (Word, Excel, PowerPoint)

Languages

Turkish (Native Speaker)

English (Advanced) UDS:85; YOKDIL:90

References

Prof. Dr. Hakan Akcay, PhD Advisor, Bogazici University, hakan.akcay@bogazici.edu.tr

Prof. Dr. Ton de Jong, PhD Advisor, University of Twente, a.j.m.dejong@utwente.nl

Prof. Dr. Funda Savasci-Acikalin, MSc. Advisor, Istanbul University- Cerrahpasa, fsavasci@iuc.edu.tr

Jun.-Prof. Dr. Salome Flegr, Dresden University of Technology, salome.flegr@tu-dresden.de