

SINEM DEMIRCI, Ph.D.

PERSONAL INFORMATION

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Google Scholar: <https://tinyurl.com/3vam9js8>

WORK EXPERIENCE

2022- Present	Dept. of Statistical Science, University College London	(Postdoctoral) Visiting Researcher / Lecturer
2021 - 2022	TEDMEM	Social and Educational Research Specialist (Policy Analyst)
2013 - 2020	Dept. of Math. & Sci. Education, Middle East Technical University	Teaching & Research Assistant

EDUCATION

Degree	University	Year of Graduation
Ph.D.	Elementary (Science) Education, Middle East Technical University	2021
M.Sc.	Statistics, Middle East Technical University	2018
M.Sc.	Elementary Science and Mathematics Education, Middle East Technical University	2014
B.Sc.	Elementary Science Education, Middle East Technical University	2011

RESEARCH INTERESTS: Statistics & Data Science Education, Educational Statistics,
Systems Thinking in Environmental and Sustainability Education

FOREIGN LANGUAGES:

	Speaking	Reading	Writing
German	Pre-intermediate	Intermediate	Intermediate
Turkish	Advanced	Advanced	Advanced

COMPUTER SKILLS: R Project for Statistical Computing, R Markdown, IBM SPSS
Software, LISREL, Git (Version Control)

AWARDS

2021	Scientific and Technological Research Council of Turkey	2219-Postdoctoral Research Scholarship
2020	European Educational Research Association	Bursary Winner for ECER 2020
2015	Middle East Technical University	Thesis of the Year
2013	Scientific and Technological Research Council of Turkey	2224-A International Scientific Events Support Program

PUBLICATIONS

Peer Reviewed Articles

- Demirci, S., Şahin E., Teksöz, G. & Marcinkowski, T. J. (2021). Pre-Service teachers' beliefs on human population growth in the context of education for sustainable development: development and validation of an instrument. *Journal of Teacher Education for Sustainability*, 23(2), 121-142. <https://doi.org/10.2478/jtes-2021-0021>
- Demirci, S. & Şahin, E. (2018). An analysis of Turkish middle school science education program placing climate change issues in the context of education for sustainable development. *International Journal of Quality in Education*, 2(1), 13-21.
URL: <https://dergipark.org.tr/en/pub/ijqe/issue/37135/427929>
- Demirci, S. (2018). The context of sustainable development in Turkish elementary science curriculum. *International Journal of Quality in Education*, 1(1), 54-61.
URL: <https://dergipark.org.tr/en/pub/ijqe/issue/37117/427577>
- Demirci, S. & Teksöz, G. (2017). Self-Efficacy beliefs on integrating sustainability into profession and daily life: in the words of university students. *International Electronic Journal of Environmental Education*, 7(2), 116-133.
URL: <https://files.eric.ed.gov/fulltext/EJ1180990.pdf>
- Demirci, S., Yılmaz, A., & Şahin, E. (2016). Lise ve üniversite öğrencilerinin atomun yapısı ile ilgili zihinsel modellerine genel bir bakış. [An Overview of High School and University Students' Mental Models of the Structure of the Atom]. *Türkiye Kimya Derneği Dergisi, Kısım C: Kimya Eğitimi*, 1(1), 87-106.
URL: <https://dergipark.org.tr/en/pub/jotcsc/issue/30533/330312>

Conference Papers/Presentations

- Demirci, S., Şahin E. & Teksöz, G. (2021, September). *Eight-Graders' Understanding of Hidden Use of Water and Their Action Strategies for Sustainable Use of Water*. [Paper presentation]. European Conference on Educational Research, Geneva, Switzerland
- Demirci, S., Şahin E. & Teksöz, G. (2021, September). *Middle School Students' Perceptions on the Interactions among Water Cycle, Global Warming, and Climate Change*. [Paper presentation]. European Conference on Educational Research, Geneva, Switzerland

- Demirci, S., Şahin E. & Teksöz, G. (2020, September). *Redefining Urbanization: in the views of university students*. [Paper presentation]. 5th International Symposium on Environment and Morals, Turkey
- Demirci, S. & Teksöz, G. (2020, September). *Pre-service Teachers' Perceptions on the Interactions between COVID-19 Pandemic and the Environment*. [Paper presentation]. 5th International Symposium on Environment and Morals, Turkey
- Demirci, S. & Teksöz, G. (2018, June). *Pre-service Science Teachers' Skills on Problem/Issue Analysis in Environmental Education*. [Paper presentation]. ERPA International Congresses on Education, Istanbul, Turkey
- Demirci, S. (2018, June). *Middle School Students' Mental Models of the Water Cycle*. [Paper presentation]. ERPA International Congresses on Education, Istanbul, Turkey
- Teksöz, G. & **Demirci, S.** (2017, August). *About the Context of Climate Change Education for Sustainability: In the Words of University Students*. [Paper presentation]. 12th Biannual Conference of the European Science Research Association (ESERA), Dublin, Republic of Ireland.
- Demirci, S., Kaplan, G., Cengizoglu, S., & Şen, M. (2017, April). *Pre-service teachers' Understandings of sustainability based on ontological entities*. [Paper presentation]. 26th International Conference on Educational Sciences, Antalya, Türkiye.
- Cengizoglu, S & **Demirci, S.** (2016, September). *Türkiye'de Yaşayan Çocuklar ve Çevre-İnsan İlişkisi: Bir İçerik Analizi Çalışması*. [Paper presentation]. UFBMEK 2016, Trabzon, Türkiye.
- Demirci, S. & Cengizoglu, S. (2016, September). *Türkiye'de Okul Öncesi Dönemde Fen Eğitimi'nde Yapılan Çalışmaların Bölgelere, Değişkenlere ve Örneklem Gruplarına Göre İçerik Analizi*. [Poster presentation]. UFBMEK 2016, Trabzon, Türkiye.
- Demirci, S. & Şahin E. (2016, May). *An Analysis of Turkish Middle School Science Education Program Placing Climate Change Issues in The Context of Education for Sustainable Development*. [Paper presentation]. the 14th International JTEFS/BCCC Conference Sustainable Development, Culture, Education: Innovations and Challenges of Teacher Education for Sustainable Development, Konya, Turkey.

- Demirci, S. (2016, May). *The Context of Sustainable Development in Turkish Elementary Science Curriculum*. [Paper presentation]. the 14th International JTEFS/BBCC Conference Sustainable Development, Culture, Education: Innovations and Challenges of Teacher Education for Sustainable Development, Konya, Turkey.
- Demirci, S. & Şen, M. (2016, April). *Pre-Service Science Teachers' Misconceptions About Density and Buoyancy*. [Paper presentation]. The annual meeting of NARST International Conference toward Equity and Justice: Many Different Voices, Cultures, and Languages in Science Education Research for Quality Science Learning and Teaching, Baltimore, Maryland, U.S.A.
- Demirci, S., Şahin E. & Teksöz, G. (2015, October). *Is the Carrying Capacity Exceeded? Preservice Teachers' Beliefs on Human Population Growth*. [Paper presentation]. The annual meeting of North American Association in Environmental Education, San Diego, California, U.S.A.
- Demirci, S., Şahin, E. & Yılmaz, A. (2015, September). *The Effects of History of Science on Students' Mental Models Regarding Atomic Models*. [Poster presentation]. 11th biannual Conference of the European Science Research Association (ESERA), Helsinki, Finland.
- Yılmaz, A., Şahin, E. & **Demirci, S.** (2015, September). Lise ve Üniversite Öğrencilerinin Atomun Yapısı ile İlgili Zihinsel Modellerine Genel Bir Bakış. [Paper presentation]. 4. Ulusal Kimya Eğitimi Kongresi, Balıkesir, Turkey.
- Demirci, S. & Şen, M. (2015, September). *Fen Bilgisi Öğretmen Adaylarının Yoğunluk Konusunda Kavram Yanılgılarının Belirlenmesi*. [Paper presentation]. 2. Ulusal Fizik Eğitimi Kongresi, Ankara, Turkey.
- Demirci, S., Şahin E. & Teksöz, G. (2015, June). An Exploration of University Students' Beliefs on the Sustainable Growth of Human Population. [Paper presentation]. 8th World Environmental Education Congress (WEEC), Gothenburg, Sweden.
- Demirci, S. & Teksöz, G. (2015, April). *ESD in Higher Education: University students' perceptions of sustainability and its relation to their self-efficacy beliefs to integrate sustainability into their profession and daily lives*. [Poster presentation]. the Pathways to the Future: Education for Sustainable Development, Tallinn, Estonia.
- Şahin, E., Yılmaz, A. & **Demirci, S.** (2015, April). *A Review of Elementary Students' Conceptual Understandings of 'Atom'*. [Paper presentation]. International Organization for Science and Technology Education (IOSTE), İstanbul, Turkey.
- Demirci, S. & Teksöz, G. (2014, September). *Üniversite Öğrencilerinin Sürdürülebilir Kalkınma Kavramını Gelecekteki Meslekleri Ve Günlük Yaşamlarına Birleştirmek Konusundaki Öz-yeterlik İnanışları*. [Paper presentation]. UFBMEK 2014, Adana, Türkiye.
- Demirci, S., Şahin E. & Teksöz, G. (2014, April). *What does a Survey Study on Beliefs towards Human Population Growth Imply for Teacher Education?* [Paper presentation]. EJER 2014 Congress, İstanbul, Türkiye.

Demirci, S., Şahin E. & Teksöz, G. (2013, October). *Determining Pre-service Teachers' Beliefs towards Human Population Growth*. [Paper presentation]. The annual meeting of North American Association in Environmental Education, Baltimore, Maryland, U.S.A.

Çokoğlu, S. & Şahin, E. (2012, May). *Beliefs toward Population Growth in Turkey*. [Paper presentation]. 1. Ulusal Disiplinlerarası Çevre Kongresi, Sakarya, Türkiye.

Theses

Demirci S. (2021). Exploring middle school students' systems literacy within the context of water system. [Doctoral dissertation, Middle East Technical University].
<https://open.metu.edu.tr/handle/11511/89645>

Demirci S. (2018). *A Closer look to Turkish students' scientific literacy: What do PISA 2015 results tell us?* [Master's thesis, Middle East Technical University].
<https://open.metu.edu.tr/handle/11511/27834>

Demirci S. (2014). *Development and validation of human population growth scale in the context of sustainability*. [Master's thesis, Middle East Technical University].
<https://open.metu.edu.tr/handle/11511/23331>

Book Chapters about Education Policies

TEDMEM. (2022). *Seçimlerde eğitimin yeri: siyasi partilerin vaatleri, seçmenlerin beklentileri* [The role of education in elections: promises of political parties, expectations of voters] (TEDMEM Güncel Yayınlar Dizisi 7). Türk Eğitim Derneği. ISBN: 978-605-74377-3-0. <https://tinyurl.com/42dm6pk8>

Demirci S. (2022). Öğretmenlik ve mesleki süreç [Teaching and teacher education]. In TEDMEM (Ed.). *2021 eğitim değerlendirme raporu* [2021 education assessment report]. (TEDMEM Değerlendirme Dizisi 8) (pp.147-159). Türk Eğitim Derneği. ISBN: 978-605-74377-2-3. <https://tinyurl.com/3xz9unnn>

TEDMEM (2021). *20. Millî Eğitim Şûrası konularına ilişkin görüş ve öneriler* [Remarks and Recommendations on the themes of the 20th National Education Council] (TEDMEM Güncel Yayınlar Dizisi 6). Türk Eğitim Derneği. ISBN: 978-605-74377-1-6. <https://tinyurl.com/bdsub3xt>

Demirci S. (2021). Salgın sürecinde dünyada ve türkiye’de eğitimin bir yılı [One year in education in the world and in Turkey during the pandemic]. In TEDMEM (Ed.). *Türkiye’nin telaflı eğitimi yol haritası* [Turkey's education recovery roadmap] (TEDMEM Analiz Dizisi 9) (pp.7-22). Türk Eğitim Derneği. ISBN: 978-605-74377-0-9. <https://tinyurl.com/2p9y2ctr>

Other Publications

Demirci S. (2021). Öğretmenler, öğrenme ortamları ve okullar [Teachers, learning environments, and schools]. In TEDMEM (Ed.). *Bir bakışta eğitim 2021* [Education at a Glance 2021]. <https://tedmem.org/mem-notlari/degerlendirme/bir-bakista-egitim-2021>

Demirci S. (2021). Öğretmenlerin dijital yeterlikleri [Teacher Digital Competencies]. <https://tedmem.org/mem-notlari/degerlendirme/ogretmen-dijital-yeterlikleri>

Demirci, S. (2021). COVID-19 ve dünyada okulların durumu [COVID-19 and The Status of the Schools Worldwide]. <https://tedmem.org/covid-19/covid-19-ve-dunyada-okullarin-durumu>

PROJECT EXPERIENCE

Project title: Pedagogical Content Knowledge in Data Science Education: An Assessment of Readiness to Teach Data Science in Higher Education

PI: Dr. Sinem Demirci

Partners/Collaborators: Dr Mine Dogucu – UCL,
Assist. Prof. Dr Joshua M. Rosenberg – University of Tennessee, Knoxville,
Teaching Assoc. Prof. Dr Andrew Zieffler – University of Minnesota

Funded by: The Scientific and Technological Research Council of Turkey, TÜBİTAK

Sponsored by: University College London

Role & time spent: Principal Investigator, 01.08.2022 - 31.07.2023

Project Ethics Identification Number: 23773/001

Project title: From Waste to Fertilizer 3 - Composting

PI: Dr. Serap Bilen (METU, Society and Science Application and Research Center)

Supported by: The Scientific and Technological Research Council of Turkey, TÜBİTAK

Role & time spent: Trainer, 08.04.2019 - 19.04.2019

Project No: 218B226

Project title: From Waste to Fertilizer 1 - Composting

PI: Dr. Serap Bilen (METU, Society and Science Application and Research Center)

Supported by: The Scientific and Technological Research Council of Turkey, TÜBİTAK

Role & time spent: Trainer, 09.10.2017 -30.10.2017

Project No: 117B056

Project title: In-service Science Teachers' Teaching Experiences on Atomic Models within the context of History of Science

PI: Assoc. Prof. Dr. Elvan ŞAHİN (METU, Dept. of Science and Mathematics Education)

Supported by: Scientific Research Projects Coordination Unit, Middle East Technical University

Role & time spent: Researcher, 1.1.2015 -31.12.2015

Project No: BAP-05-06-2015-001

Project title: University Students' Beliefs on Human Population Growth

PI: Assoc. Prof. Dr. Elvan ŞAHİN (METU, Dept. of Science and Mathematics Education)

Supported by: Scientific Research Projects Coordination Unit, Middle East Technical University

Role & time spent: Researcher, 1.1.2013 -31.12.2013

Project No: BAP-07-03-2013-010

COURSES ASSISTED

Course Code	Course Name	Number of Semesters
MSE 501	Educational Statistics	8 Semesters (2014 – 2020)
MSE305	Assessment of Learning in Science and Mathematics	2 Semesters (Spring 2014 & Spring 2015)
MSE 309	Statistical Applications in Education	3 Semesters (2016 - 2020)
MSE 602	Advanced Educational Research	Fall 2016
MSE 487	Environmental Science	5 Semesters (2014 – 2020)
MSE 474	Education and Awareness for Sustainability	3 Semesters (2014 – 2020)
MSE 475	Climate Change Education for Sustainability	Spring 2014
ELE 477	Laboratory Applications in Environmental Education	2 Semesters (Spring 2012 & Spring 2017)
MSE 409 & MSE 410	Practice Teaching, I & II	6 Semesters (2016 – 2020)

ACTIVITIES AND COMMUNITY SERVICE

Jury Member at Science Fair, ODTÜ Geliştirme Vakfı Okulları, Ankara, Turkey, 2013.
Jury Member at Science Fair, ODTÜ Geliştirme Vakfı Okulları, Ankara, Turkey, 2014.
Jury Member at Science Fair, ODTÜ Geliştirme Vakfı Okulları, Ankara, Turkey, 2016.
Volunteer at the Charity Project of Construction of School Building “Okula Yüz Verin”, METU Alumni, Ankara, Turkey, 2010-2014.
Volunteer at the project of studying with visually impaired students “Engelsiz ODTÜ”, Ankara, Turkey, 2009-2010
Member of METU Scouts, Ankara, Turkey, 2006-...
Leader of METU Scouts, Ankara, Turkey, 2009-2011.
Head of Education Committee at METU Scouts, 2009-2010
Youth Summer Camp Leader at Middle East Technical University, Ankara, Turkey, 2009
Volunteer at Project of Collecting, Sorting, and Recycling Waste “Temiz Eymir”, Ankara, Turkey, 2008-2010
Volunteer at selling UNICEF Cards and Gifts at Middle East Technical University, Ankara, Turkey, 2006-2010
Volunteer at annual charity events for suburban elementary school students in Ankara, Turkey, 2006-2011.
Volunteer at organizing Wheelchair basketball game and selling the tickets, 2010.

PERSONAL INTERESTS: Camping, Pilates, Western concert flute (beginner)