

Res. Asst. PhD Aslı KOÇULU

Personal Information

Office Phone: [+90 212 383 4873](tel:+902123834873)

Email: akoculu@yildiz.edu.tr

Other Email: asli.koculu@alumni.metu.edu.tr

Web: <https://avesis.yildiz.edu.tr/akoculu>

Address: Yıldız Teknik Üniversitesi, Davutpaşa Kampüsü, Eğitim Fakültesi, A-210, Güngören, İstanbul

International Researcher IDs

ScholarID: c6wAavIAAAAJ

ORCID: 0000-0002-9103-2563

Publons / Web Of Science ResearcherID: JZY-4307-2024

ScopusID: 58843791400

Yoksis Researcher ID: 246631

Education Information

Doctorate, Yıldız Technical University, Graduate School Of Natural And Applied Sciences, Fen Bilgisi Eğitimi , Turkey 2018 - 2024

Postgraduate, Akdeniz University, Institute Of Educational Sciences, İlköğretim-Fen Bilgisi Eğitimi, Turkey 2016 - 2018

Postgraduate, Middle East Technical University, Graduate School Of Social Sciences, İlköğretim Fen ve Matematik Eğitimi, Turkey 2015 - 2016

Undergraduate, Middle East Technical University, Faculty Of Education, Fen Bilgisi Öğretmenliği, Turkey 2010 - 2015

Undergraduate, Anadolu University, İktisat Fakültesi, Uluslararası İlişkiler Bölümü, Turkey 2010 - 2014

Foreign Languages

English, C2 Mastery

Spanish, B2 Upper Intermediate

German, B1 Intermediate

Certificates, Courses and Trainings

Vocational Training, TÜBİTAK ARDEB 1001 Bilimsel ve Teknolojik Araştırma Projelerini Destekleme Programı, TÜBİTAK, 2023

Environment and Sustainability, The Age of Sustainable Development, SDG Academy, 2023

Environment and Sustainability, Ethics in Action, SDG Academy, 2023

Environment and Sustainability, Transforming Our World: Achieving the Sustainable Development Goals , SDG Academy, 2023

Environment and Sustainability, How to Achieve the Sustainable Development Goals, SDG Academy, 2023

Environment and Sustainability, Changing Behaviour for Sustainable Development, SDG Academy, 2022

Environment and Sustainability, The Best Start in Life: Early Childhood Development for Sustainable Development, SDG Academy, 2022

Vocational Training, Leaders of Learning, Harvard University, 2022

Vocational Training, Learning and memory in the brain: a guide for teachers, University of Cambridge, 2021
Vocational Training, Engineering for Your Classroom, The University of British Columbia, 2021
Vocational Training, Online Course Development: Planning and Implementation, The University of British Columbia, 2021
Vocational Training, Esera Summer School 2020, Oxford, European Science Education Research Association, 2020
Vocational Training, Design Thinking and Creativity for Innovation, The University of Queensland, 2020
Vocational Training, Creative Thinking: Techniques and Tools for Success, Imperial College London, 2020
Vocational Training, Designing for Change: Environmental Education Research and Practice, Stanford University, 2020
Vocational Training, Improvement Science in Education, University of Michigan, 2019
Vocational Training, Teaching Computational Thinking, University of Canterbury, 2019
Vocational Training, Teaching Science and Engineering, École Polytechnique Fédérale de Lausanne (EPFL), 2019
Vocational Training, The Science of Happiness, University of California, Berkeley, 2018
Foreign Language, English Language and Literature, Ankara University, 2015
Education Management and Planning, Educational Administration and Planning, Middle East Technical University, 2015

Dissertations

Doctorate, Development and Implementation of the Sustainable Development Goals Unit: Exploring Students' Systems Thinking Skills and Ethical Reasoning, Yildiz Technical University, Graduate School Of Natural And Applied Sciences, Matematik ve Fen Bilimleri Eğitimi Anabilim Dalı, 2024
Postgraduate, An Examination of the Relationship Between Pre-service Science Teachers' Awareness about Sustainable Development and Attitudes and Behaviours toward Environmental Issues, Akdeniz University, Institute Of Educational Sciences, 2018

Research Areas

Education, Education in Natural Sciences, Teacher Training

Academic Titles / Tasks

Research Assistant, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2017 - Continues
Research Assistant, Akdeniz University, Faculty Of Education, Mathematics And Science Education, 2015 - 2017

Academic and Administrative Experience

Erasmus Program Department Coordinator, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2019 - Continues
Matematik ve Fen Bilimleri Eğitimi Bölümü Web Sorumlusu, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2017 - Continues
Fen Bilgisi Eğitimi Anabilim Dalı Web Sorumlusu, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2017 - Continues
Ulusal Staj Programı Bölüm Sorumlusu, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2023 - 2025
Member of Department Promotion and Alumni Relations Commission, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2017 - 2024
Bölüm Kalite Komisyonu Üyesi, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2021 - 2023
Yatay Geçiş ve İntibak Komisyonu Üyesi, Yildiz Technical University, Faculty Of Education, Department Of Mathematics

And Science Education, 2017 - 2022

Akreditasyon, Sürekli Gelişim ve Yenilenme Kurulu Üyesi, Yıldız Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2020 - 2021

Yatay Geçiş ve İntibak Komisyonu, Akdeniz University, Faculty Of Education, Mathematics And Science Education, 2015 - 2017

Bölüm Tanıtım ve Mezunlarla İlişkiler Komisyonu Üyesi, Akdeniz University, Faculty Of Education, Mathematics And Science Education, 2015 - 2017

Fen Bilgisi Eğitimi Anabilim Dalı Web Sorumlusu, Akdeniz University, Faculty Of Education, Mathematics And Science Education, 2015 - 2017

Courses

Undergraduate

Öğretmenlik Uygulaması 2, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019

Biyoloji 1 Lab, Undergraduate, 2023 - 2024, 2020 - 2021, 2019 - 2020, 2018 - 2019

Sürdürülebilir Ekoloji, Undergraduate, 2024 - 2025

Biyoloji 3 Lab, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022

Biyoloji 2 Lab, Undergraduate, 2023 - 2024, 2020 - 2021, 2019 - 2020, 2018 - 2019

Fen Öğretim Programları, Undergraduate, 2022 - 2023

Öğretmenlik Uygulaması 1, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019

Fizik 2 Lab, Undergraduate, 2021 - 2022

Disiplinlerarası Fen Öğretimi, Undergraduate, 2022 - 2023

Fen Öğretimi Laboratuvar Uygulamaları 2, Undergraduate, 2021 - 2022

Fen Öğretimi Laboratuvar Uygulamaları 1, Undergraduate, 2022 - 2023

Kimya 2 Lab, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019

Fizik 1 Lab, Undergraduate, 2021 - 2022

STEM Eğitimi, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018

Çevre Eğitimi, Undergraduate, 2019 - 2020

Kimya 1 Lab, Undergraduate, 2020 - 2021, 2019 - 2020, 2018 - 2019

Çevre Bilimi, Undergraduate, 2018 - 2019, 2017 - 2018

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Development and Implementation of a Sustainable Development Goals (SDGs) Unit: Exploration of Middle School Students' SDG Knowledge**

Koçulu A., Topçu M. S.

Sustainability (Switzerland), vol.16, no.2, 2024 (SCI-Expanded)

Articles Published in Other Journals

- I. **Model Proposal for a Portable Rooftop Greenhouse: Improving Middle School Students' Environmental Conciousness and Attitudes**

Manisa K., Koltukoğlu B., Koçulu A., Topçu M. S.

New Design Ideas, vol.9, no.1, pp.1-33, 2025 (Scopus)

- II. **From Awareness to Attitude and Behavior? Relationships among Pre-Service Science Teachers' Awareness of Sustainable Development, Attitudes and Behaviors towards Environmental Issues**

- Koçulu A., Sert H.
Journal of Teacher Education and Lifelong Learning, vol.6, no.2, pp.421-434, 2024 (Peer-Reviewed Journal)
- III. **The Effect of E-STEM Education on Students' Perceptions and Engineering Design Process about Environmental Issues**
Koçulu A., Girgin Ş.
World Journal of Education, vol.12, no.6, pp.49-56, 2022 (Peer-Reviewed Journal)
- IV. **The Effect of STEM Education on Pre-Service Science Teachers' Perceptions of 21st Century Skills and Competences and Problem Solving Skills**
Koçulu A., Topçu M. S., Çiftçi A.
Open Journal For Educational Research (OJER), vol.6, no.2, pp.165-172, 2022 (Peer-Reviewed Journal)
- V. **Exploration of Pre-Service Science Teachers' Engineering Design Performance Development**
Koçulu A., Topçu M. S.
European Journal of Education Studies , vol.9, no.10, pp.46-54, 2022 (Peer-Reviewed Journal)
- VI. **Revealing Pre-service Teachers' Mind Maps on STEM Education through STEM Images**
Koçulu A., Girgin Ş., Umdü Topsakal Ü.
International Journal of Progressive Education, vol.18, no.5, pp.319-337, 2022 (Peer-Reviewed Journal)
- VII. **Sınıf Öğretmenlerinin Teknoloji Kullanımına İlişkin Öz-Yeterlik Algılarının Çeşitli Değişkenler Açısından İncelenmesi**
Doğru M., Şeren N., Koçulu A.
Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi (ASEAD), vol.4, no.12, pp.464-472, 2017 (Peer-Reviewed Journal)

Books

- I. **2024 Fen Bilimleri Dersi Öğretim Programının (Maarif Modeli) Özel Amaçları**
Topçu M. S., Koçulu A.
in: Fen Bilimleri Dersi Öğretim Programı-Fen Bilimleri Öğretmen ve Öğretmen Adayları için MEB 2024 (Maarif Modeli) Analizi, Prof. Dr. Hakan Şevki Ayvaci, Editor, Pegem A Yayıncılık, Ankara, pp.129-146, 2025
- II. **Socio-scientific Issues in Education for Sustainable Development**
Koçulu A., Topçu M. S.
in: Different Perspectives on Environmental Education, Prof. Dr. Sinan Erten, Editor, ISRES Publishing, Iowa, pp.135-145, 2021
- III. **Güncel (2018) Fen Bilimleri Öğretim Programının Öğrenme ve Alt Öğrenme Alanları**
Topçu M. S., Koçulu A.
in: Fen Öğretim Programları, Prof. Dr. Hakan Şevki Ayvaci, Editor, Pegem A Yayıncılık, Ankara, pp.98-118, 2020
- IV. **Uluslararası Fen Programlarının Karşılaştırılması: Amerika-Finlandiya-Singapur-Türkiye**
Koçulu A., Akçay H.
in: Fen Öğrenme ve Öğretim Yaklaşımları, Prof. Dr. Behiye Akçay, Editor, Nobel Yayınevi, Ankara, pp.307-326, 2019

Papers Published in Refereed Scientific Meetings

- I. **Developing Students' Systems Thinking with Education for Sustainable Development Goals**
Koçulu A., Topçu M. S.
NAAEE 2023- North American Association for Environmental Education-52th Annual Conference, Massachusetts, United States Of America, 18 - 20 October 2023, pp.1-2
- II. **Raising Students' Sustainable Living Awareness through Education for Sustainable Development**
Koçulu A., Topçu M. S.
NAAEE 2023- North American Association for Environmental Education-20th Annual Research Symposium, California, United States Of America, 12 October 2023, pp.1-2

- III. **The Effect of Environmental Education Course on Pre-service Science Teachers' Attitudes toward Sustainable Development**
Koçulu A., Topçu M. S., Arslan M.
ESERA 2023 - 15th Biennial Conference of the European Science Education Research Association, Cappadocia, Nevşehir, Turkey, 28 August - 01 September 2023, pp.146-148
- IV. **The Effect of Interdisciplinary Science Teaching Course on Pre-service Science Teachers' Integrative STEM Teaching Intentions**
Koçulu A., Topçu M. S., Arslan M.
ESERA 2023-15th Biennial Conference of the European Science Education Research Association, Cappadocia, Nevşehir, Turkey, 28 August - 01 September 2023, pp.142-145
- V. **Examining Turkish Pre-service Science Teachers' Awareness about Sustainable Development Goals**
Koçulu A.
4. International Liberty Interdisciplinary Studies Conference, New York, United States Of America, 2 - 03 August 2023, pp.1-2
- VI. **Development of the Sustainable Development Goals Unit for Middle School Students**
Koçulu A., Topçu M. S.
EJER 2023-10. International Eurasian Educational Research Congress , Ankara, Turkey, 8 - 11 June 2023, pp.621-622
- VII. **The Relationship Between Pre-Service Science Teachers' Views About Nature Of Science And Their Epistemological Beliefs**
Koçulu A.
Mediterranean Summit 6th International Social Sciences Congress, Adana, Turkey, 23 - 24 October 2021, pp.228
- VIII. **The Effect Of Environmental Science Course On Pre-Service Science Teachers' Self-Efficacy About Environmental Education**
Koçulu A., Arslan M.
Aegean Summit 3rd International Social Sciences Congress, İzmir, Turkey, 16 - 17 October 2021, pp.319
- IX. **Pre-Service Science Teachers' Views About Recycling And Recycling Plants**
Koçulu A., Arslan M.
Aegean Summit 3rd International Social Sciences Congress, İzmir, Turkey, 16 - 17 October 2021, pp.320
- X. **Developing Pre-Service Science Teachers' Self-Efficacy for STEM Practices through STEM Education**
Topçu M. S., Koçulu A.
ECER 2021-European Conference on Educational Research, Geneve, Switzerland, 6 - 10 September 2021, pp.200
- XI. **Exploration of Pre-service Science Teachers' Engineering Design Performance Development**
Koçulu A., Topçu M. S.
ESERA 2021-European Science Education Research Association , Braga, Portugal, 30 August - 03 September 2021, pp.15669
- XII. **Astronomi Dersinin Fen Bilgisi Öğretmen Adaylarının Astronomiye Yönelik İlgilerine Etkisi**
Koçulu A.
14. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi (UFBMEK), Burdur, Turkey, 19 - 21 May 2021, pp.194
- XIII. **Fen Bilgisi Öğretmen Adaylarının Bilimsel Süreç Becerileri ile Kimya Laboratuvarı Endişeleri Arasındaki İlişkinin İncelenmesi**
Koçulu A.
14. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi (UFBMEK), Burdur, Turkey, 19 - 21 May 2021, pp.122
- XIV. **Using STEM Education to Promote Pre-Service Science Teachers' Critical Thinking Dispositions**
Koçulu A., Topçu M. S.
ECER 2020-European Educational Research Association, Glasgow, England, 23 - 28 August 2020, pp.543
- XV. **Examining the Relationship between Pre-service Science Teachers' Awareness about Sustainable Development and Attitudes and Behaviours toward Environmental Issues**
Koçulu A., Sert H.
VI. Yıldız Sosyal Bilimler Kongresi, İstanbul, Turkey, 12 - 13 December 2019, pp.7
- XVI. **Investigating Students' Engineering Design Process Through Integrated STEM and Sustainability**

Education

Girgin Ş., Koçulu A., Umdu Topsakal Ü.

2. Uluslararası Eğitimde Yeni Arayışlar Kongresi (UEYAK), İstanbul, Turkey, 26 - 28 October 2019, pp.363-366

- XVII. **Examination of Pre-Service Science Teachers' Views About 2018 Science Curriculum: A SWOT Analysis**
Koçulu A., Girgin Ş., Coştu B.
2. Uluslararası Eğitimde Yeni Arayışlar Kongresi (UEYAK), İstanbul, Turkey, 26 - 28 October 2019, pp.52-54
- XVIII. **Investigation of Pre-Service Science Teachers' Views About Engineering Design Process**
Koçulu A., Topçu M. S.
2. Uluslararası Eğitimde Yeni Arayışlar Kongresi (UEYAK), İstanbul, Turkey, 26 - 28 October 2019, pp.359-362
- XIX. **A Meta Synthesis Study: Exploring Students' Conceptions on Condensation, Evaporation and Boiling Concepts**
Girgin Ş., Koçulu A., Coştu B.
ESERA 2019- European Science Education Research Association , Bologna, Italy, 26 - 30 August 2019, pp.142
- XX. **Revealing Pre-service Teachers' Mind Maps on STEM Education through STEM Images**
Koçulu A., Girgin Ş., Umdu Topsakal Ü.
ESERA 2019- European Science Education Research Association , Bologna, Italy, 26 - 30 August 2019, pp.131
- XXI. **Exploring Pre-Service Science Teachers' Views on STEM Education through a STEM Course**
Koçulu A., Topçu M. S., Çiftçi A.
Uluslararası V. TURKCESS Eğitim ve Sosyal Bilimler Kongresi, İstanbul, Turkey, 27 - 29 June 2019, pp.477
- XXII. **Stem Eğitiminin Fen Bilimleri Öğretmen Adaylarının Problem Çözme Sürecine Yönelik Algılarına Etkisi**
Çiftçi A., Topçu M. S., Koçulu A.
Uluslararası V. TURKCESS Eğitim ve Sosyal Bilimler Kongresi, İstanbul, Turkey, 27 - 29 June 2019, pp.350
- XXIII. **Developing Pre-Service Science Teachers' Views Of Nature Of Science And Scientific Inquiry Through Documentaries**
Koçulu A., Doğru M.
Uluslararası V. TURKCESS Eğitim ve Sosyal Bilimler Kongresi, İstanbul, Turkey, 27 - 29 June 2019, pp.531
- XXIV. **Effects of STEM Education on Pre-Service Science Teachers' Perception of 21st Century Skills and Competences**
Çiftçi A., Topçu M. S., Koçulu A.
NARST 2019-National Association for Research in Science Teaching , Maryland, United States Of America, 31 March - 03 April 2019, pp.1-5
- XXV. **An Investigation about Primary School Teachers' Self-Efficacy Perception related to Technology Use From the Point of Variables**
Doğru M., Şeren N., Koçulu A.
ASEAD II. Uluslararası Sosyal Bilimler Sempozyumu, Belek, Antalya, Turkey, 21 October 2017, pp.56
- XXVI. **Eğitimde Teknoloji Kullanımı Özyeterlik Ölçeği'nin Faktör Yapısının Farklı Kültürlerdeki Değişmezliğinin İncelenmesi**
Koçulu A., Uyumaz G., Koğar H.
World Congress on Lifelong Education, Antalya, Turkey, 16 December 2016, pp.39
- XXVII. **Gıda Zehirlenmeleri ve Turizm**
Fıstıkeken N., Adıyaman M., Koçulu A., Sert H.
I. Uluslararası Turizm ve Mikrobiyal Gıda Güvenliği Kongresi, Antalya, Turkey, 21 April 2016, pp.57-59
- XXVIII. **Genetiği Değiştirilmiş Organizmalar**
Adıyaman M., Fıstıkeken N., Koçulu A., Sert H.
I. Uluslararası Turizm ve Mikrobiyal Gıda Güvenliği Kongresi, Antalya, Turkey, 21 April 2016, pp.60-63

Supported Projects

Manisa K., Koçulu A., Koltukoğlu B., Topçu M. S., TÜBİTAK Project, Ortaokullarda Uygulamalı Çevre Eğitime Yönelik Çatı Üstü Sökülebilir Taşınabilir Sera Tasarımı Önerisi, 2022 - 2024

Memberships / Tasks in Scientific Organizations

North American Association for Environmental Education (NAAEE), Member, 2022 - Continues, United States Of America
British Educational Research Association (BERA), Member, 2021 - Continues, England
American Educational Research Association (AERA), Member, 2020 - Continues, United States Of America
European Educational Research Association (EERA), Member, 2020 - Continues, England
National Association for Research in Science Teaching (NARST), Member, 2019 - Continues, United States Of America
European Science Education Research Assosiation (ESERA), Member, 2018 - Continues, England

Peer Reviews in Scientific Publications

European Science Education Research Association (ESERA), Conference Paper (Full Text), August 2023
European Science Education Research Association (ESERA), Conference Paper (Full Text), August 2021
European Educational Research Association (EERA), Conference Paper (Full Text), August 2020
American Educational Research Association (AERA), Conference Paper (Full Text), July 2020
National Association for Research in Science Teaching (NARST), Conference Paper (Full Text), March 2020
European Science Education Research Association (ESERA), Conference Paper (Full Text), August 2019
National Association for Research in Science Teaching (NARST), Conference Paper (Full Text), March 2019

Scientific Research / Working Group Memberships

Ytü Mühendislik Eğitimi Merkezi, Yıldız Technical University, Türkiye, <https://avesis.yildiz.edu.tr/arastirma-grubu/ytumem>, 2023 - Continues

Metrics

Publication: 40

Congress and Symposium Activities

III. Alan Eğitiminde Materyal Tasarımı Sergisi, Attendee, İstanbul, Turkey, 2017
I. Akademik Okul Çalıştayları, Attendee, Antalya, Turkey, 2017
IV. Zeka ve Yetenek Kongresi (Beyin, Yaratıcılık ve Akış-Robotik Okuryazarlık), Attendee, Ankara, Turkey, 2016
TÜBA Bilim Eğitim Programı (III. Uygulamalı Bilim Eğitimi), Attendee, Antalya, Turkey, 2016
Antalya II. Bilim Festivali, Attendee, Antalya, Turkey, 2016
Bilime Yön Verenler Etkinliği, Working Group, Ankara, Turkey, 2015

Scholarships

NAAEE 2023 Scholarship : North American Association for Environmental Education Conference & Research Symposium, Other International Organizations, 2023 - 2023
ESERA 2023 Fellowship : 100-year anniversary of the Republic of Türkiye & In honour of Professor Phil Scott, Other International Organizations, 2023 - 2023

Yıldız Teknik Üniversitesi Yurt İçi Bilimsel Etkinlik Katılım Desteđi, University, 2023 - 2023
2224-A Yurt Dışı Bilimsel Etkinliklere Katılımı Destekleme Programı, TÜBİTAK, 2021 - 2021
European Conference on Educational Research (ECER) Fellowship, Other International Organizations, 2021 - 2021
European Science Education Research Association (ESERA) Fellowship, Other International Organizations, 2021 - 2021
2224-A Yurt Dışı Bilimsel Etkinliklere Katılımı Destekleme Programı, TÜBİTAK, 2019 - 2019
European Science Education Research Association (ESERA) Fellowship, Other International Organizations, 2019 - 2019

Awards

Koçulu A., High Honor Student, Yıldız Teknik Üniversitesi, June 2024
Koçulu A., High Honor Student, Akdeniz Üniversitesi, June 2018
Koçulu A., Akademik Teşvik Ödülü, Yüksek Öğretim Kurulu, January 2018
Koçulu A., High Honor Student, Middle East Technical University, June 2015
Koçulu A., 3rd ranked student at Elementary Science Education (ESE), Middle East Technical University, June 2015

Non Academic Experience

Public Corporation, ODTÜ Geliştirme Vakfı Okulları, Fen Bilgisi Eğitimi, Intern