

## Prof. Mustafa Sami TOPÇU

### Personal Information

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### International Researcher IDs

ScholarID: omFGZ0sAAAAJ

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### Biography

Dr. Topçu, Doktora eğitimini 2008 yılında Orta Doğu Teknik Üniversitesi İlköğretim (Fen Bilimleri) Eğitimi Programı'nda tamamlamıştır. 2007 yılında Amerika Birleşik Devletleri (ABD), Florida Üniversitesi'nde (University of Florida) misafir araştırmacı olarak bulunmuş ve burada doktora tezinin önemli bir kısmını tamamlamıştır. Doktora tez çalışması sosyo-bilimsel konular ve argümantasyon becerileri üzerinedir. 2009-2010 yılları arası Yüzüncü Yıl Üniversitesi'nde, 2011-2013 yılları arasında Muğla Sıtkı Koçman Üniversitesi'nde, 2014-2015 yılları arasında ABD'deki Missouri Üniversitesi'nde (University of Missouri-Columbia) sosyo-bilimsel konular ve STEM Eğitimi üzerine araştırmalar yapmak üzere öğretim üyesi olarak bulunmuştur. Ayrıca 2013 yılından itibaren Yıldız Teknik Üniversitesi'nde öğretim üyesi olarak görevine devam etmektedir.

Dr. Topçu'nun uzmanlık alanları sosyo-bilimsel konular, argümantasyon, epistemolojik inançlar ve STEM eğitimidir. Dr. Topçu, "International Journal of Science and Mathematics Education" dergisinin editörler kurulunda olmakla beraber "International Journal of Science Education" gibi alandaki birçok dergide hakemlik görevini yürütmektedir. 2007'den itibaren NARST (National Association for Research in Science Teaching) aktif üyesi olup, 2019 yılında NARST Yönetim Kurulu tarafından NARST Yönetim Kurulu Üyeliğine aday gösterilmiştir. TÜBİTAK Yönetim Kurulu tarafından "Fen Bilimleri Eğitimi alanında sosyo-bilimsel konular, argümantasyon ve epistemolojik inançlar konularındaki uluslararası düzeyde üstün nitelikli çalışmaları" nedeniyle 2018 Yılı TÜBİTAK Teşvik Ödülü'nü almaya layık görülmüştür.

### Education Information

Post Doctorate, University of Missouri-Columbia, Faculty of Education, Re-STEM Institute, United States Of America 2014 - 2015

Doctorate, Middle East Technical University, Graduate School Of Social Sciences, İlköğretim, Turkey 2005 - 2008

Postgraduate, Dokuz Eylül University, Eğitim Bilimleri Enstitüsü, İlköğretim, Turkey 2002 - 2004

Undergraduate, 19 Mayıs Üniversitesi, Amasya Eğitim Fakültesi, İlköğretim, Turkey 1998 - 2002

### Research Areas

Social Sciences and Humanities, Education, Education in Natural Sciences

## Academic Titles / Tasks

Professor, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2017 - Continues

## Academic and Administrative Experience

Coordinator of The Rectorate, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2021 - Continues

Fakülte Yönetim Kurulu Üyesi, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2021 - Continues

Head of Department, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2018 - 2021

Fakülte Kurulu Üyesi, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2018 - 2021

Rektörlüğe Bağlı Koordinatör, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2017 - 2018

Deputy Head of Department, Yildiz Technical University, Faculty Of Education, Department Of Mathematics And Science Education, 2016 - 2018

## Advising Theses

Topçu M. S., 8. Sınıf Fen Bilimleri Ders Kitabı Ölçme Değerlendirme Etkinliklerinin Uluslararası Öğrenci Değerlendirme Programının Fen Okuryazarlık Yeterlik Düzeyine Göre İncelenmesi, Postgraduate, M.Nur(Student), 2020

Topçu M. S., İlköğretim 7. ve 8. Sınıf Öğrencilerinin Sürdürülebilir Kalkınmaya Yönelik Tutumları ve İlişkili Faktörler, Postgraduate, D.Kanmaz(Student), 2019

Topçu M. S., Middle School Students' Development of Model-Based Explanations about Ecological Interactions through Socio- scientific Issue Based Instruction, Postgraduate, B.DURAK(Student), 2019

Topçu M. S., Development and implementation of the socioscientific issue-based unit plan in the context of "effects of pesticide use in agriculture and collapsing bee hives, Postgraduate, E.SARIKAYA(Student), 2018

Topçu M. S., Investigating middle school students' supporting reasons throughout written argumentation in the context of socio-scientific issue-based instruction, Postgraduate, B.AKKAŞ(Student), 2018

Topçu M. S., Preservice science teachers' views towards socioscientific issues and socioscientific issue-based instruction, Postgraduate, O.SIBIÇ(Student), 2017

Topçu M. S., Sosyobilimsel Konu Temelli Bir Ünitenin Geliştirilmesi: 7. Sınıf Öğrencilerinin Konu Alan Bilgisi ve Argümantasyon Nitelikleri, Doctorate, N.Atabay(Student), 2016

Topçu M. S., Fen Bilgisi Öğretmen Adaylarının İklim Değişiminin Dünyamıza Etkileri Konusundaki Yazılı Argümantasyon Yeteneklerinin İncelenmesi, Postgraduate, D.Karışan(Student), 2011

## Published journal articles indexed by SCI, SSCI, and AHCI

### I. Improving 6th Grade Students' Creative Problem Solving Skills Through Plugged and Unplugged Computational Thinking Approaches

AYTEKİN A., TOPÇU M. S.

Journal of Science Education and Technology, vol.33, no.6, pp.867-891, 2024 (SCI-Expanded)

### II. Elementary Students' Use of Mechanistic Reasoning to Explain Community-Connected Engineering Design Solutions

TOPÇU M. S., Wendell K. B., Andrews C. J.

Journal of Science Education and Technology, vol.33, no.5, pp.621-632, 2024 (SCI-Expanded)

- III. **The effect of integrating computational thinking (CT) components into science teaching on 6th grade students' learning of the circulatory system concepts and CT skills**  
Aytekin A., TOPÇU M. S.  
Education and Information Technologies, vol.29, no.7, pp.8079-8110, 2024 (SSCI)
- IV. **Development and implementation of engineering-based aircraft unit: middle school students' engineering design process skills**  
Arik M., TOPÇU M. S.  
International Journal of Technology and Design Education, vol.34, no.2, pp.603-628, 2024 (SCI-Expanded)
- V. **Analyzing socioscientific issues-based instruction studies focusing on character and value development: A systematic review**  
Atabey N., TOPÇU M. S.  
Journal of Moral Education, 2024 (SSCI)
- VI. **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)
- VII. **Improving early childhood pre-service teachers' computational thinking skills through the unplugged computational thinking integrated STEM approach**  
Çiftçi A., TOPÇU M. S.  
Thinking Skills and Creativity, vol.49, 2023 (SSCI)
- VIII. **Co-design and implementation of community-based engineering enriched science units: Exploration of pre-service science teachers' professional development**  
TOPÇU M. S., Çiftçi A.  
Teaching and Teacher Education, vol.127, 2023 (SSCI)
- IX. **Improving early childhood pre-service teachers' computational thinking teaching self-efficacy beliefs in a STEM course**  
ÇİFTÇİ A., TOPÇU M. S.  
RESEARCH IN SCIENCE & TECHNOLOGICAL EDUCATION, vol.41, no.4, pp.1215-1241, 2023 (SSCI)
- X. **Supporting 7th-Grade Students' Model-Based Explanations about Energy Transformations through Design Thinking\***  
Çiftçi A., TOPÇU M. S.  
Egitim ve Bilim, vol.48, no.215, pp.31-53, 2023 (SSCI)
- XI. **Implementation of Engineering Design Process in the K-12 Science Classrooms: Trends and Issues**  
Arik M., Topçu M. S.  
RESEARCH IN SCIENCE EDUCATION, vol.52, no.1, pp.21-43, 2022 (SSCI)
- XII. **Computational Thinking Integration into Science Classrooms: Example of Digestive System**  
Arik M., Topçu M. S.  
Journal Of Science Education And Technology, vol.31, no.1, pp.99-115, 2022 (SCI-Expanded)
- XIII. **Pre-service early childhood teachers' views on STEM education and their STEM teaching practices**  
Çiftçi A., Topçu M. S., Foulk J.  
Research in Science & Technological Education, vol.1, pp.1-27, 2020 (SSCI)
- XIV. **The classroom observation protocol for socioscientific issue-based instruction: development and implementation of a new research tool**  
TOPÇU M. S., FOULK J. A., SADLER T. D., PITIPORNTAPIN S., Atabey N.  
RESEARCH IN SCIENCE & TECHNOLOGICAL EDUCATION, vol.36, no.3, pp.302-323, 2018 (SSCI)
- XV. **EXAMINATION OF THE QUESTIONS USED IN SCIENCE LESSONS AND ARGUMENTATION LEVELS OF STUDENTS**  
Erdogan I., Ciftci A., TOPÇU M. S.  
JOURNAL OF BALTIC SCIENCE EDUCATION, vol.16, no.6, pp.980-993, 2017 (SSCI)
- XVI. **Factors Predicting Turkish and Korean Students' Science and Mathematics Achievement in TIMSS**

**2011**

TOPÇU M. S., Erbilgin E., Arikan S.

EURASIA JOURNAL OF MATHEMATICS SCIENCE AND TECHNOLOGY EDUCATION, vol.12, no.7, pp.1711-1737, 2016 (SSCI)

- XVII. **Learning science content through socio-scientific issues-based instruction: a multi-level assessment study**

Sadler T. D., Romine W. L., TOPÇU M. S.

INTERNATIONAL JOURNAL OF SCIENCE EDUCATION, vol.38, no.10, pp.1622-1635, 2016 (SSCI)

- XVIII. **Turkish preservice science teachers' socioscientific issues-based teaching practices in middle school science classrooms**

Genel A., TOPÇU M. S.

RESEARCH IN SCIENCE & TECHNOLOGICAL EDUCATION, vol.34, no.1, pp.105-123, 2016 (SSCI)

- XIX. **Turkish Students' Science Performance and Related Factors in PISA 2006 and 2009**

TOPÇU M. S., Arikan S., Erbilgin E.

AUSTRALIAN EDUCATIONAL RESEARCHER, vol.42, no.1, pp.117-132, 2015 (SSCI)

- XX. **Socioscientific Issues in Science Education: The Case of Turkey**

TOPÇU M. S., Mugaloglu E. Z., Guven D.

KURAM VE UYGULAMADA EGITIM BILIMLERI, vol.14, no.6, pp.2340-2348, 2014 (SSCI)

- XXI. **Preservice teachers' teacher efficacy beliefs and constructivist-based teaching practice**

Temiz T., Topcu M. S.

EUROPEAN JOURNAL OF PSYCHOLOGY OF EDUCATION, vol.28, no.4, pp.1435-1452, 2013 (SSCI)

- XXII. **PRESERVICE TEACHERS' EPISTEMOLOGICAL BELIEFS IN PHYSICS, CHEMISTRY, AND BIOLOGY: A MIXED STUDY**

Topcu M. S.

INTERNATIONAL JOURNAL OF SCIENCE AND MATHEMATICS EDUCATION, vol.11, no.2, pp.433-458, 2013 (SSCI)

- XXIII. **THE IMPACT OF PRESENTATION GRAPHICS ON PRESERVICE SCIENCE TEACHERS' ATTITUDES TOWARDS PHYSICS**

Erdemir N., TOPÇU M. S.

JOURNAL OF BALTIC SCIENCE EDUCATION, vol.11, no.2, pp.141-152, 2012 (SSCI)

- XXIV. **Turkish elementary student teachers' epistemological beliefs and moral reasoning**

Topcu M. S.

EUROPEAN JOURNAL OF TEACHER EDUCATION, vol.34, no.1, pp.99-125, 2011 (SSCI)

- XXV. **A Reliability and Validity Study of the Defining Issues Test: The Relationship of Age, Education, Gender and Parental Education with Moral Development**

Cesur S., TOPÇU M. S.

KURAM VE UYGULAMADA EGITIM BILIMLERI, vol.10, no.3, pp.1681-1696, 2010 (SSCI)

- XXVI. **Preservice Science Teachers' Informal Reasoning about Socioscientific Issues: The influence of issue context**

Topcu M. S., Sadler T. D., Yilmaz-Tuzun O.

INTERNATIONAL JOURNAL OF SCIENCE EDUCATION, vol.32, pp.2475-2495, 2010 (SSCI)

- XXVII. **Relationships among preservice science teachers' epistemological beliefs, epistemological world views, and self-efficacy beliefs**

Yilmaz-Tuzun O., Topcu M. S.

INTERNATIONAL JOURNAL OF SCIENCE EDUCATION, vol.30, no.1, pp.65-85, 2008 (SSCI)

## **Articles Published in Other Journals**

- I. **Navigating complexity: a multifaceted approach to teaching climate change in middle school**

Durak B., Topçu M. S.

SCIENCE ACTIVITIES CLASSROOM PROJECTS AND CURRICULUM IDEAS, vol.61, no.4, pp.163-179, 2024 (ESCI)

- II. **Exploring early childhood children's computational thinking skills**  
Ülker-Hançer N., Çiftçi A., Topçu M. S.  
International Journal of Quality in Education, vol.7, no.1, pp.37-57, 2023 (Peer-Reviewed Journal)
- III. **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)
- IV. **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)
- V. **Pre-service Early Childhood Teachers' Challenges and Solutions to Planning and Implementing STEM Education-Based Activities**  
ÇİFTÇİ A., TOPÇU M. S.  
CANADIAN JOURNAL OF SCIENCE MATHEMATICS AND TECHNOLOGY EDUCATION, vol.22, no.2, pp.422-443, 2022 (ESCI)
- VI. **Okul öncesi öğretmen adaylarının STEM eğitimine yönelik zihinsel modelleri ve görüşleri**  
Çiftçi A., Topçu M. S.  
Milli Eğitim Dergisi , vol.50, no.231, pp.41-65, 2021 (Scopus)
- VII. **The relationship between Turkish middle school students' 21st century skills and STEM career interest: Gender effect**  
Atabey N., Topçu M. S.  
Journal of Education in Science, Environment and Health, vol.7, no.2, pp.86-103, 2021 (Peer-Reviewed Journal)
- VIII. **Pre-service Science Teachers' Views towards Socio-scientific Issues and Socio-scientific Issue-based Instruction**  
Sıbiç O., Topçu M. S.  
Journal of Education in Science Environment and Health, vol.6, no.4, pp.268-281, 2020 (Peer-Reviewed Journal)
- IX. **Middle School Students' Environmental Attitudes and Informal Reasoning Regarding an Environmental Socioscientific Issue**  
Atabey N., Topçu M. S.  
International Journal of Progressive Education, vol.16, no.5, pp.90-105, 2020 (Peer-Reviewed Journal)
- X. **Design thinking: Opinions and experiences of middle school students**  
Çiftçi A., Topçu M. S.  
Pegem Journal of Education and Instruction, vol.10, no.3, pp.961-1000, 2020 (Peer-Reviewed Journal)
- XI. **Gender Gap and Career Choices in STEM Education: Turkey Sample**  
Çiftçi A., Topçu M. S., Erdoğan İ.  
International Journal of Progressive Education, vol.16, no.3, pp.53-66, 2020 (Peer-Reviewed Journal)
- XII. **Adaptation of the Scale of the Factors Affecting Argumentation Instruction into Turkish**  
Atabey N., Topçu M. S., Çiftçi A.  
Journal of Theoretical Educational Science, vol.13, no.2, pp.352-368, 2020 (Peer-Reviewed Journal)
- XIII. **Preservice Primary School Teachers' Sentiments, Attitudes And Concerns About Inclusive Education: Differentiated Science Experiments**  
Mertoğlu H., Topçu M. S.  
European Journal of Education Studies, vol.6, no.12, pp.162-180, 2020 (Peer-Reviewed Journal)
- XIV. **Classification of Assessment and Evaluation Activities in an Eighth-grade Turkish Science Textbook according to PISA Science Literacy Proficiency Levels**  
Genç M. N., Topçu M. S.  
European Journal of Educational Studies, vol.6, no.11, pp.248-260, 2020 (Peer-Reviewed Journal)
- XV. **Fizik Eğitiminde Bir STEM Etkinliği Tasarımı: "Crookes Radyometresi Tasarlıyorum"**  
Kurt H. S., Topçu M. S.  
Temel Eğitim Dergisi, vol.1, no.3, pp.11-16, 2019 (Peer-Reviewed Journal)
- XVI. **Sosyobilimsel konu senaryolarının incelenmesi: Bir içerik analizi çalışması**

- Atabey N., Topçu M. S.  
OPUS Uluslararası Toplum Araştırmaları Dergisi, vol.9, no.16, pp.1-15, 2018 (Peer-Reviewed Journal)
- XVII. **STEM Education Practices: Examination of the Argumentation Skills of Pre-service Science Teachers**  
Erdoğan İ., Çiftçi A., Yıldırım B., TOPÇU M. S.  
Journal of Education and Practice, vol.8, no.25, pp.164-173, 2017 (Peer-Reviewed Journal)
- XVIII. **The Effects of Socioscientific Issues Based Instruction on Middle School Students' Argumentation Quality**  
Atabey N., TOPÇU M. S.  
Journal of Education and Practice, vol.8, no.36, pp.61-71, 2017 (Peer-Reviewed Journal)
- XIX. **The Effect of Socioscientific Issues Based Field Trips on Elementary School Students' Argumentation Quality**  
Topçu M. S., Atabey N.  
Bartın Üniversitesi Eğitim Fakültesi Dergisi, vol.6, no.1, pp.68-84, 2017 (Peer-Reviewed Journal)
- XX. **The Development of a Socioscientific Issues-Based Curriculum Unit for Middle School Students: Global Warming Issue**  
Atabey N., Topçu M. S.  
INTERNATIONAL JOURNAL OF EDUCATION IN MATHEMATICS SCIENCE AND TECHNOLOGY, vol.5, no.3, pp.153-170, 2017 (ESCI)
- XXI. **The Effect of Field Trips on Middle School Students' Content Knowledge and Attitudes towards Environment**  
Topçu M. S., Atabey N.  
Yüzüncü Yıl Üniversitesi Eğitim Fakültesi Dergisi, vol.13, no.1, pp.494-513, 2016 (Peer-Reviewed Journal)
- XXII. **Contents exploring the preservice science teachers' written argumentation skills: The global climate change issue**  
Karisan D., TOPÇU M. S.  
International Journal of Environmental and Science Education, vol.11, no.6, pp.1347-1363, 2016 (Scopus)
- XXIII. **Teachings Based on Socioscientific Issues in Science Classrooms: A review Study**  
Pitiportapın S., TOPÇU M. S.  
KKU International Journal of Humanities and Social Sciences, vol.6, no.1, pp.119-136, 2016 (Peer-Reviewed Journal)
- XXIV. **Predicting Turkish preservice elementary teachers' orientations to teaching science with epistemological beliefs, learning conceptions, and learning approaches in science**  
Adibelli Şahin E., Deniz H., TOPÇU M. S.  
International Journal of Environmental and Science Education, vol.11, no.5, pp.515-534, 2016 (Scopus)
- XXV. **Preservice science teachers' attitudes towards chemistry and misconceptions about chemical kinetics**  
Çam A., Topçu M. S., Sülün Y.  
Asia-Pacific Forum on Science Learning and Teaching, vol.16, no.2, pp.1-6, 2015 (Scopus)
- XXVI. **Exploration of Preservice Science Teachers' Epistemological Beliefs, World Views, and Self-Efficacy Considering Gender and Achievement**  
Yılmaz-Tüzün Ö., Topçu M. S.  
e-İlköğretim Online (elektronik), vol.12, no.3, pp.659-673, 2013 (Peer-Reviewed Journal)
- XXVII. **Translation and validation of the Epistemic Belief Inventory with Turkish pre-service teachers**  
Cam A., Topcu M. S., Sulun Y., Guven G., Arabacioglu S.  
Educational Research and Evaluation, vol.18, no.5, pp.441-458, 2012 (Peer-Reviewed Journal)
- XXVIII. **Turkish Preservice Science Teachers' Informal Reasoning regarding Socioscientific Issues and the Factors Influencing Their Informal Reasoning**  
Topçu M. S., Yılmaz Tüzün Ö., Sadler T. D.  
Journal of Science Teacher Education, vol.22, no.4, pp.313-332, 2011 (Scopus)
- XXIX. **Investigating the Relationships among Elementary School Students' Epistemological Beliefs, Metacognition, and Constructivist Science Learning Environment**

Yılmaz Tüzün Ö., Topçu M. S.

Journal of Science Teacher Education, vol.21, no.2, pp.255-273, 2010 (Scopus)

**XXX. Development of Attitudes towards Socioscientific Issues Scale for undergraduate students**

Topcu M. S.

Evaluation and Research in Education, vol.23, pp.51-67, 2010 (Scopus)

**XXXI. Turkish Middle School Students' Difficulties in Learning Genetics Concepts**

Topçu M. S., Şahin-Pekmez E.

e-TÜFED / Türk Fen Eğitimi Dergisi (elektronik), vol.6, no.2, pp.55-62, 2009 (Scopus)

**XXXII. Elementary Students' Metacognition and Epistemological Beliefs Considering Science Achievement, Gender and Socioeconomic Status**

Topçu M. S., Yılmaz-Tuzun Ö.

e-İlköğretim Online (elektronik), vol.8, no.3, pp.676-693, 2009 (Peer-Reviewed Journal)

## **Books & Book Chapters**

**I. Nitel veri toplama yöntemleri ve verilerin analizi**

Çiftçi A., Topçu M. S.

in: Eğitimde Bilimsel Araştırma Yöntemleri , M. Küçük,S. Sevim, Editor, Nobel Yayınevi, Ankara, pp.141-160, 2022

**II. Disiplinlerarası fen öğretiminde sosyobilimsel konular**

Topçu M. S., Atabey N.

in: Disiplinlerarası Fen Öğretimi , H. Ş. Ayvacı,M. Ergün, Editor, Pegem Akademi, Ankara, pp.163-191, 2022

**III. Supporting Science Teachers' Professional Development and Teaching Practices: A Case Study of Socioscientific Issue-Based Instruction**

Topçu M. S., Atabey N., Çiftçi A.

in: Innovative Approaches to Socioscientific Issues and Sustainability Education. Learning Sciences for Higher Education, Hsu Y. S.,Tytler R.,White P. J., Editor, Springer, London/Berlin , Singapore, pp.135-158, 2022

**IV. Innovation in Preservice Teacher Education: Drone-Based Learning**

Cavadas B., Topçu M. S.

in: Handbook of Research on Global Education and the Impact of Institutional Policies on Educational Technologies, M. Loureiro,A. Loureiro,H. Gerber, Editor, IGI Global, Pennsylvania, pp.12-35, 2022

**V. Socio-scientific Issues in Education for Sustainable Development**

Koçulu A., Topçu M. S.

in: Different Perspectives on Environmental Education, Sinan Erten, Editor, ISRES Publishing, Iowa, pp.135-145, 2021

**VI. Erken Çocukluk Döneminde STEM Eğitimi ve Bilgi İşlemsel Düşünme**

Çiftçi A., Topçu M. S.

in: Erken Çocukluk Eğitimi Kuramdan Uygulamaya, Yaşar-Ekici F.,Kırkç K. A., Editor, Nobel Tıp Kitabevleri, İstanbul, pp.219-250, 2021

**VII. Küresel Vatandaşlık Eğitiminde Sosyobilimsel Konular**

Atabey N., Topçu M. S.

in: Sosyobilimsel Konular , Ayşe Yenilmez-Türkoğlu;,Dilek Karışan, Editor, Eğiten, Ankara, pp.261-277, 2021

**VIII. Erken çocukluk döneminde fen eğitimi**

Atabey N., Topçu M. S.

in: Erken Çocukluk Eğitimi Kuramdan Uygulamaya , Yaşar-Ekici F.,Kırkç K. A., Editor, Nobel Tıp Kitabevleri, İstanbul, pp.151-188, 2021

**IX. Socio-Scientific Issues and Model-Based Learning**

Durak B., Topçu M. S.

in: Socioscientific Issues-Based Instruction for Scientific Literacy Development, W. A. Powell, Editor, IGI Global, Virginia, pp.279-297, 2021

**X. Fen ve Teknoloji uygulamalarına genel bakış**

Atabey N., Topçu M. S.

in: Senaryolarla Desteklenmiş Fen ve Teknoloji Uygulamaları , E. G. Yıldırım ve A. N. Önder, Editor, Anı Yayıncılık, Ankara, pp.1-36, 2020

**XI. Sosyobilimsel Konuların Öğretiminde Medyanın Rolü**

Deliktaş S., Ertuğrul E., Topçu M. S.

in: Kuramdan Uygulamaya Sosyobilimsel Konular , Murat Genç, Editor, Nobel, Ankara, pp.259-286, 2020

**XII. Sosyobilimsel Konular ve STEM Eğitimi**

Durak B., Topçu M. S.

in: Kuramdan Uygulamaya Sosyobilimsel Konular , Murat Genç, Editor, Nobel, Ankara, pp.397-411, 2020

**XIII. 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 , Ankara, pp.98-118, 2020

**XIV. STEM+A Uygulamaları**

Topçu M. S. (Editor)

Pusula Yayıncılık, İstanbul, 2019

**XV. Erken Çocuklukta Fen Eğitimi**

Topçu M. S. (Editor), Özkan B. (Editor)

Efe Akademi, İstanbul, 2018

**XVI. Okul Öncesi Eğitimde Sosyobilimsel Konular**

Topçu M. S., Sıbiç O.

in: Erken Çocuklukta Fen Eğitimi, Asiye Parlak-Rakap, Editor, Eğiten Yayıncılık, İstanbul, pp.103-126, 2018

**XVII. STEM ve Mühendislik**

Topçu M. S., Gökçe A.

in: Merhaba STEM: Yenilikçi Bir Öğretim Yaklaşımı, Arif Kamik Kırkıç, Emin Aydın, Editor, Eğitim Yayınevi, Konya, pp.79-94, 2018

**XVIII. 21. Yüzyıl Becerileri ve STEM**

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## **Supported Projects**

Deniz M. E., Kert S. B., Özkan B., Topçu M. S., Güven G., Tuğluk M. N., TUBITAK Project, Yıldız Erken Çocuklukta Dijital Okuryazarlık Eğitim Programının Geliştirilmesi, 2022 - 2024

TOPÇU M. S., Arık M., Project Supported by Higher Education Institutions, Ortaokul Düzeyinde Uçak Mühendisliği Tasarım Ünitesinin Geliştirilmesi: Mühendislik Tasarım Süreci Becerilerinin ve Kavramsal Öğrenmelerinin İzlenmesi, 2019 - 2021

TOPÇU M. S., ÇİFTÇİ A., Project Supported by Higher Education Institutions, Tasarım Odaklı Düşünme Temelli Bir Enerji Dönüşümleri Modülünün Geliştirilmesi ve Uygulanması, 2018 - 2020

Özkan B., Topçu M. S., Tuğluk M. N., Altın G., Akçay Malçok B., Ceylan R., TUBITAK Project, Çocuklarımıza Sürdürülebilir Bir Dünya Bırakalım, 2018 - 2018

Akçay B., Topçu M. S., Ceylan R., TUBITAK Project, Çocuklarımıza Sürdürülebilir Bir Dünya Bırakalım, 2018 - 2018

Topçu M. S., Project Supported by Public Organizations in Other Countries, Reducing Achievement Gaps in Science, Technology, Engineering and Mathematics (STEM): Promising International Research, Policies and Practices, 2016 - 2018

TOPÇU M. S., Project Supported by Higher Education Institutions, Sosyo-bilimsel Konu (SBK)-Temelli Eğitim: 8. Sınıf Biyo-teknoloji Ünitesinin Geliştirilmesi, 2016 - 2018

TOPÇU M. S., TUBITAK Project, Fen Bilgisi Eğitimi Lisans Öğrencilerine Teknoloji Destekli Argümantasyon Eğitimi, 2017 - 2017

TOPÇU M. S., TUBITAK Project, Fen Bilimleri Öğretmenlerine Yönelik Bilimsel Temelli Argümantasyon Uygulamaları, 2017 - 2017

TOPÇU M. S., CB Strateji ve Bütçe Başkanlığı (Kalkınma Bakanlığı) Projesi, STEM Eğitimleri ile Girişimci Gençler, 2016 - 2017

TOPÇU M. S., CB Strateji ve Bütçe Başkanlığı (Kalkınma Bakanlığı) Projesi, 4-4'lük Destek Eğitim Odası, 2016 - 2017

Topçu M. S., Erbilgin E., TUBITAK Project, Teknolojinin Cebir Öğretimine Entegrasyonu, 2014 - 2014

Topçu M. S., TUBITAK Project, Cennet İlimiz Muğla'da Enerji Kaynakları: Sosyobilimsel Konulara Yolculuk, 2013 - 2013

## **Metrics**

Publication: 188

Citation (WoS): 154

Citation (Scopus): 215

H-Index (WoS): 7

H-Index (Scopus): 8

## **Scholarships**



Doktora Başarı Bursu, TUBITAK, 2005 - 2008

Yüksek Lisans Başarı Bursu, TUBITAK, 2002 - 2004

## Awards

Topçu M. S., TÜBİTAK AB Projeleri Eşik Üstü Ödülü (3. Kez), Tübitak, February 2021

Topçu M. S., TÜBİTAK AB Projeleri Eşik Üstü Ödülü (2. Kez), Tübitak, June 2020

Topçu M. S., TÜBİTAK AB Projeleri Eşik Üstü Ödülü , Tübitak, December 2019

Topçu M. S., Yıldız Teknik Üniversitesi 2018 Yılı Proje 1.'si, Yıldız Teknik Üniversitesi, November 2019

TOPÇU M. S., TÜBİTAK Teşvik Ödülü, TÜBİTAK, December 2018

Topçu M. S., 2017 Yılı SSCI Kapsamındaki Uluslararası Yayın Sıralamasında YTÜ Eğitim Fakültesi Üçüncülük Ödülü, Yıldız Teknik Üniversitesi, October 2018

Topçu M. S., 2016 Yılı SSCI Kapsamındaki Uluslararası Yayın Sıralamasında YTÜ Eğitim Fakültesi Birincilik Ödülü, Yıldız Teknik Üniversitesi, May 2018

Topçu M. S., ODTÜ Sosyal Bilimler Enstitüsü İlköğretim Doktora Programı En İyi Tez Ödülü , Orta Doğu Teknik Üniversitesi, May 2009

## Non Academic Experience

Muğla Üniversitesi

Yüzüncü Yıl Üniversitesi

Muğla Üniversitesi

Yüzüncü Yıl Üniversitesi

Orta Doğu Teknik Üniversitesi

Kaynaklar İlköğretim Okulu