

## Assoc. Prof. ÖMER FARUK ÖZDEMİR

### Personal Information

**Office Phone:** [+90 0312 210 3691](tel:+9003122103691)

**Fax Phone:** [+90 0535 461 7993](tel:+9005354617993)

**Email:** [ozdemir@metu.edu.tr](mailto:ozdemir@metu.edu.tr)

**Web:** <https://avesis.metu.edu.tr/ozdemir>

**Address:** [ozdemir@metu.edu.tr](mailto:ozdemir@metu.edu.tr)

### International Researcher IDs

ScholarID: xTty3CwAAAAJ

ORCID: 0000-0003-4715-195X

Publons / Web Of Science ResearcherID: P-9253-2016

ScopusID: 55119626000

Yoksis Researcher ID: 163776

### Education Information

Doctorate, Ohio State University, Teaching & Learning , United States Of America 1999 - 2004

Undergraduate, Selcuk University, Faculty Of Science, Department Of Physics, Turkey 1991 - 1995

### Dissertations

Doctorate, The coexistence of alternative and scientific conceptions in physics, Ohio State University, Teaching & Learning , 2004

### Research Areas

Education in Natural Sciences, Teacher Training, Teacher Training For Secondary School, Teacher Training in Science and Math. at Second. Sch. Lev.

### Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Education, Mathematics and Science Education, 2014 - Continues

Assistant Professor, Middle East Technical University, Faculty of Education, Mathematics and Science Education, 2008 - 2014

Lecturer PhD, Middle East Technical University, Faculty of Education, Mathematics and Science Education, 2005 - 2008

Research Assistant, Gebze Yüksek Teknoloji Enstitüsü, Fen Fakültesi, Fizik Bölümü, 1996 - 1998

### Academic and Administrative Experience

Deputy Head of Department, Middle East Technical University, Faculty Of Education, Ortaöğretim Fen Ve Matematik Alanlar Eğitimi Bölümü, 2007 - 2021

## Advising Theses

- ÖZDEMİR Ö. F., Content analysis of exhibit labels in science centers, Postgraduate, İ.GEZER(Student), 2022
- ÖZDEMİR Ö. F., Effectiveness of conceptual change strategies in science education: A meta-analysis, Doctorate, Ç.PAÇACI(Student), 2022
- ÖZDEMİR Ö. F., Effects of epistemologically enhanced instruction on ninth grade students' physics related personal epistemology and achievement in physics, Doctorate, K.ÖZMEN(Student), 2017
- ÖZDEMİR Ö. F., Development of an instrument for science teachers' perceived readiness in STEM education, Postgraduate, A.NİHAN(Student), 2017
- ÖZDEMİR Ö. F., Field trips to science centers: Teachers' perspectives, roles, and reflections, Doctorate, E.ŞENTÜRK(Student), 2015
- ÖZDEMİR Ö. F., ERYILMAZ A., The effect of a professional development program on physics teachers' knowledge and their students' achievement in modern physics unit, Doctorate, N.BALTA(Student), 2014
- ÖZDEMİR Ö. F., Field trips to science centers : teachers' perspectives, roles and reflections, Doctorate, E.Şentürk(Student), 2014
- ÖZDEMİR Ö. F., Effects of instructions based on cognitive bridging and cognitive conflict on 9th grade students' understanding of force and motion, epistemological beliefs, and self-efficacy, Doctorate, İ.YAMAN(Student), 2013
- ÖZDEMİR Ö. F., Mode-method interaction: The effects of inquiry vs. expository and blended vs. face-to-face instruction on 9th grade students' achievement in, science process skills in and attitudes towards physics, Doctorate, A.ÇETİN(Student), 2013
- ÖZDEMİR Ö. F., Mode-method interaction: the effects of inquiry vs. expository and blended vs. face-to-face instruction on 9th grade students' achievement in, science process skills in and attitudes towards physics, Doctorate, A.Çetin(Student), 2013
- YILDIRIM U., ÖZDEMİR Ö. F., Assessment of high school physics teachers' pedagogical content knowledge related to the teaching of electricity, Doctorate, E.BAĞÇIVAN(Student), 2012
- ÖZDEMİR Ö. F., An investigation of undergraduate students' scientific inquiry processes in a physics laboratory, Doctorate, C.ÜNAL(Student), 2012
- ÖZDEMİR Ö. F., Method-approach interaction: The effects of learning cycle vs traditional and contextual vs non-contextual instruction on 11th grade students achievement in and attitudes towards physics, Doctorate, H.PEŞMAN(Student), 2012
- ÖZDEMİR Ö. F., Method-approach interaction:the effects of learning cycle vs traditional and contextual vs non-contextual instruction on 11th grade students' achievement in and attitudes towards physics, Doctorate, H.Peşman(Student), 2012
- ÖZDEMİR Ö. F., Role of thought experiments in solving conceptual physics problems, Doctorate, Ş.DÖNERTAŞ(Student), 2011
- ÖZDEMİR Ö. F., ÇAKIROĞLU J., Relation of cognitive and motivational variables with students' human circulatory system achievement in traditional and learning cycle classrooms, Doctorate, Ö.SADİ(Student), 2010
- ÖZDEMİR Ö. F., The effect of science centres on students' attitudes towards science, Postgraduate, E.ŞENTÜRK(Student), 2009

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

- I. **Effectiveness of conceptual change strategies in science education: A meta-analysis**  
Pacaci C., Ustun U., ÖZDEMİR Ö. F.  
Journal of Research in Science Teaching, vol.61, no.6, pp.1263-1325, 2024 (SSCI)
- II. **Explicit Versus Implicit Instruction: Effects of Epistemological Enhancement on Ninth Graders' Physics-Related Personal Epistemology and Physics Achievement**  
Özmen K., ÖZDEMİR Ö. F.  
Research in Science Education, vol.54, no.3, pp.439-458, 2024 (SSCI)
- III. **An experimental study exploring the effects of predict-observe-explain method supported with simulations**

TÜYSÜZ A., ÖZDEMİR Ö. F.

Research in Science and Technological Education, 2024 (SSCI)

- IV. **Conceptualisation and development of the physics related personal epistemology questionnaire (PPEQ)**  
Ozmen K., ÖZDEMİR Ö. F.  
INTERNATIONAL JOURNAL OF SCIENCE EDUCATION, vol.41, no.9, pp.1207-1227, 2019 (SSCI)
- V. **Mode-Method Interaction: The Role of Teaching Methods on The Effect of Instructional Modes on Achievements, Science Process Skills, and Attitudes Towards Physics**  
ÇETİN A., ÖZDEMİR Ö. F.  
EURASIA JOURNAL OF MATHEMATICS SCIENCE AND TECHNOLOGY EDUCATION, vol.14, no.5, pp.1815-1826, 2018 (SSCI)
- VI. **Pre-service Physics Teachers' Metacognitive Knowledge about Their Instructional Practices**  
Yerdelen-Damar S., ÖZDEMİR Ö. F., Unal C.  
EURASIA JOURNAL OF MATHEMATICS SCIENCE AND TECHNOLOGY EDUCATION, vol.11, no.5, pp.1009-1026, 2015 (SSCI)
- VII. **The Nature and Role of Thought Experiments in Solving Conceptual Physics Problems**  
Kosem S. D., ÖZDEMİR Ö. F.  
SCIENCE & EDUCATION, vol.23, no.4, pp.865-895, 2014 (SCI-Expanded)
- VIII. **Transfer and conceptual change: the change process from the theoretical perspectives of coordination classes and phenomenological primitives**  
Ozdemir Ö. F.  
INSTRUCTIONAL SCIENCE, vol.41, no.1, pp.81-103, 2013 (SSCI)
- IX. **Approach-Method Interaction: The role of teaching method on the effect of context-based approach in physics instruction**  
PEŞMAN H., ÖZDEMİR Ö. F.  
INTERNATIONAL JOURNAL OF SCIENCE EDUCATION, vol.34, no.14, pp.2127-2145, 2012 (SSCI)
- X. **Avoidance from Thought Experiments: Fear of misconception**  
ÖZDEMİR Ö. F.  
INTERNATIONAL JOURNAL OF SCIENCE EDUCATION, vol.31, no.8, pp.1049-1068, 2009 (SSCI)

## Articles Published in Other Journals

- I. **HARMANLANMIŞ VE YÜZ-YÜZE ÖĞRENME ORTAMLARINDA KULLANILAN ÖĞRETİM YÖNTEMLERİNİN İNTERNETE YÖNELİK TUTUMA ETKİSİ**  
ÇETİN A., ÖZDEMİR Ö. F.  
Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, vol.18, pp.1378-1403, 2018 (Peer-Reviewed Journal)
- II. **A Qualitative Inquiry about Students Conceptualizations of Force Concept in terms of Ontological Categories**  
ÖZDEMİR Ö. F.  
Journal of Turkish Science Education, vol.12, pp.29-42, 2015 (Scopus)
- III. **Using a Force Concept Inventory Test with Visually Impaired and Blind Students**  
Bülbül M. Ş., Garip B., Özdemir Ö. F.  
European Journal of Physics Education, vol.6, pp.20-31, 2015 (Peer-Reviewed Journal)
- IV. **A physics laboratory course designed using problem based learning for prospective physics teachers**  
ÜNAL C., ÖZDEMİR Ö. F.  
European Journal of Science and Mathematics Education, vol.1, pp.29-33, 2013 (Scopus)
- V. **The Effect of Science Centres on Students Attitudes Towards Science**  
ŞENTÜRK E., ÖZDEMİR Ö. F.  
International Journal of Science Education, Part B, vol.4, pp.1-24, 2012 (Scopus)

## Books & Book Chapters

- I. **Kavramsal Fizik**  
Güneş B., Ateş S., Eryılmaz A., Özdemir Ö. F., Korur F., Taşlıdere E., Damar S. Y., Kaltakçı Gürel D., Özdemir E., Üstün U., et al.  
Palme Yayın Dağıtım, Ankara, 2021
- II. **Kavramsal Fizik**  
GÜNEŞ B., ATEŞ S., ERYILMAZ A., ÖZDEMİR Ö. F., KORUR F., TAŞLIDERE E., YERDELEN DAMAR S., KALTAKÇI GÜREL D., ÖZDEMİR E., ÜSTÜN U., et al.  
Palme, Ankara, 2021
- III. **Doğru Bilinen Yanlılardan, Yanlış Bilinen Doğrulara: Fizikte Kavram Yanılgıları**  
GÜNEŞ B., ATEŞ S., ERYILMAZ A., YÜRÜK N., ÖZDEMİR Ö. F., KANLI U., SERİN G., ÜSTÜN U., AYGÜN M., GÜLÇİÇEK Ç., et al.  
Palme Yayıncılık, Ankara, 2017

## Refereed Congress / Symposium Publications in Proceedings

- I. **Argumentation with counterintuitive physics questions: participants' views and critics**  
AYDIN ŞENGÜLEÇ Ö., BAHÇIVAN E., ÖZDEMİR Ö. F., AZAR A.  
Turkish Physical Society 33rd International Physics Congress, 6 - 10 September 2017
- II. **The effect of argumentation-based laboratory implementation on participants' perceptions regarding argumentation**  
AYDIN ŞENGÜLEÇ Ö., BAHÇIVAN E., ÖZDEMİR Ö. F.  
Turkish Physical Society 33rd International Physics Congress, 6 - 10 September 2017
- III. **Fen Bilgisi Öğretmen Adaylarının Sezgiye Ters Fizik Problemleri ve Bilimsel Tartışma (Argümantasyon) Kavramlarına İlişkin Metaforik Algılarının İncelenmesi**  
ÇETİN A., AYDIN ŞENGÜLEÇ Ö., ÖZDEMİR Ö. F., AZAR A.  
3. Ulusal Fizik Eğitim Kongresi, Ankara, Turkey, 14 - 16 September 2017
- IV. **Argumentation With Counterintuitive Physics Questions:Participants' Views And Critics**  
AYDIN ŞENGÜLEÇ Ö., BAHÇIVAN E., ÖZDEMİR Ö. F., AZAR A.  
Turkish Physical Society 33rd International Physics Congress, Muğla, Turkey, 06 September 2017 - 10 September 2017, pp.472
- V. **Argumentation with counterintuitive physics questions:Participants'views and critics**  
AYDIN ŞENGÜLEÇ Ö., BAHÇIVAN E., ÖZDEMİR Ö. F., AZAR A.  
Türk Fizik Derneği 33. uluslararası fizik kongresi, 6 - 10 September 2017, pp.472
- VI. **The Effect Of Argumentation-Based Laboratory Implementation On Participants' Perceptions Regarding Argumentation**  
AYDIN ŞENGÜLEÇ Ö., BAHÇIVAN E., ÖZDEMİR Ö. F.  
Turkish Physical Society 33rd Physics Congress, Muğla, Turkey, 6 - 10 September 2017, pp.483
- VII. **Lise Öğrencilerinin Yedi Coğrafik Bölgeye Göre Kavram Yanılgıları Dağılımı Ve Öğrencilerin Kavram Yanılgıları Arasındaki İlişki Analizi**  
ERYILMAZ A., ÖZDEMİR Ö. F., YILDIRIM U., Eraslan F., Eryurt K., GARİP B., DEMİRTAŞ D.  
12. ULUSAL FEN BİLİMLERİ VE MATEMATİK EĞİTİMİ KONGRESİ, Turkey, 28 - 30 September 2016
- VIII. **Türkiye'de Lise Öğrencilerinin Fizik Konularındaki Kavram Yanılgılarının Coğrafik Bölgelere Göre Haritalanması**  
ERYILMAZ A., ÖZDEMİR Ö. F., YILDIRIM U., Eraslan F., Eryurt K., GARİP B., DEMİRTAŞ D.  
12. ULUSAL FEN BİLİMLERİVE MATEMATİK EĞİTİMİ KONGRESİ, Turkey, 28 - 30 September 2016
- IX. **Lise Öğrencilerinin Kuvvet Ve Hareket Konusundaki Kavram Yanılgıları Ve Kinematik Grafiklerini Anlama Konusunda Yaşadığı Zorluklar**  
ERYILMAZ A., ÖZDEMİR Ö. F., YILDIRIM U., Eraslan F., Kübra E., GARİP B., DEMİRTAŞ D.

12. ULUSAL FEN BİLİMLERİ VE MATEMATİK EĞİTİMİ KONGRESİ, Turkey, 28 - 30 September 2016
- X. **Lise Öğrencilerinin Basit Elektrik Devreleri Ve Geometrik Optik Konusundaki Kavram Yanılgıları**  
ERYILMAZ A., ÖZDEMİR Ö. F., YILDIRIM U., ERASLAN F., ERYURT K., GARİP B., DEMİRTAŞ D.  
12. ULUSAL FEN BİLİMLERİ VE MATEMATİK EĞİTİMİ KONGRESİ, Turkey, 28 - 30 September 2016
- XI. **Türkiye’de Lise Öğrencilerinin Fizik Konularındaki Kavram Yanılgılarının Coğrafik Bölgelere Göre Haritalanması**  
ERYILMAZ A., ÖZDEMİR Ö. F., YILDIRIM U., ALPTEKİN F., ÖZMEN K., DEMİRTAŞ D., Garip B.  
12. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, 28 September 2016, pp.280
- XII. **Lise Öğrencilerinin Kuvvet ve Hareket Konusundaki Kavram Yanılgıları Ve Kinematik Grafiklerini Anlama Konusunda Yaşadığı Zorluklar**  
ERYILMAZ A., ÖZDEMİR Ö. F., YILDIRIM U., ERASLAN F., ÖZMEN K., DEMİRTAŞ D., GARİP B.  
12. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, 28 September 2016
- XIII. **Lise Öğrencilerinin Basit Elektrik Devreleri Ve Geometrik Optik Konusundaki Kavram Yanılgıları**  
ERYILMAZ A., ÖZDEMİR Ö. F., YILDIRIM U., ERASLAN F., ERYURT K., DEMİRTAŞ D., Garip B.  
12. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, 28 September 2016
- XIV. **Lise Öğrencilerinin Yedi Coğrafik Bölgeye Göre Kavram Yanılgıları Dağılımı ve Öğrencilerin Kavram Yanılgıları Arasındaki İlişki Analizi**  
ERYILMAZ A., ÖZDEMİR Ö. F., YILDIRIM U., ERASLAN F., ERYURT K., DEMİRTAŞ D., Garip B.  
12. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, 28 September 2016, pp.282
- XV. **The effect of teaching method on the effect of contextual approach A factorial design**  
PEŞMAN H., ÖZDEMİR Ö. F.  
2010 National Summer Conference – Integrating Science and Mathematics Education Research into Teaching, 20 - 23 June 2010
- XVI. **The Nature Of Thought Experiments Used By Students In Different Levels During Problem Solving In Physics**  
KÖSEM Ş., ÖZDEMİR Ö. F.  
The World Conference on Physics Education, 01 July 2012 - 06 September 2009
- XVII. **Preservice physics teachers knowledge about and use of students pre instructional thinking**  
YILDIRIM U., ÖZDEMİR Ö. F.  
European Science Education Research Association, 31 August - 04 September 2009
- XVIII. **Approaching to transfer from the perspective of actor oriented model**  
YERDELEN DAMAR S., ÖZDEMİR Ö. F.  
European Science Education Research Association, 31 August - 04 September 2009
- XIX. **What is the north star of the teacher s curriculum or national exams**  
ÜNAL C., PEŞMAN H., ÖZDEMİR Ö. F.  
European Science Education Research Association, 31 August - 04 September 2009
- XX. **University students perceptions about the laboratory environments and their interactions in a physics laboratory**  
ÜNAL C., ÖZDEMİR Ö. F.  
Frontiers in Science Education Research Conference, 22 - 24 March 2009, pp.119-127
- XXI. **The Role of Metacognition in Facilitating Conceptual Change**  
YÜRÜK N., beeth m. e., ÖZDEMİR Ö. F.  
National Association for Research in Science Teaching, 23 - 26 March 2003

## Supported Projects

ÖZDEMİR Ö. F., Project Supported by Higher Education Institutions, ORTAÖĞRETİM FEN ÖĞRETMENLERİNİN STEM EĞİTİMİ HAKKINDAKİ GÖRÜŞLERİ, 2017 - 2017

YILDIRIM U., ERYURT K., ÖZDEMİR Ö. F., ERYILMAZ A., GARİP B., DEMİRTAŞ D., Project Supported by Higher Education Institutions, Türkiye’de Lise Öğrencilerinin Fizik Konularındaki Kavram Yanılgılarının Coğrafik Bölgelere göre

Haritalanması, 2013 - 2013

Özdemir Ö. F., Akdur T. E., TUBITAK Project, Geleneksel ve Mikro-Bilgisayar Temelli Laboratuvar Uygulamalarının 9. ve 10. Sınıf Öğrencilerinin Mekanik ve Elektrik Konularındaki Başarılarına, Tutumlarına, Özyeterlilik İnançlarına ve Bilimsel Süreç Becerilerine Etkilerinin Karşılaştırılması, 2010 - 2012

## **Metrics**

Publication: 39

Citation (WoS): 56

Citation (Scopus): 104

H-Index (WoS): 6

H-Index (Scopus): 6

## **Non Academic Experience**

METU

Gebze Institute of Technology