

Asst. Prof. TUĞBA YÜKSEL

Personal Information

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Education Information

Doctorate, Purdue University, College of Education, Science Education / Physics Education , United States Of America
2011 - 2017

Postgraduate, Purdue University, College of Education, Science Education / Physics Education, United States Of America
2009 - 2011

Undergraduate, Hacettepe University, Ofma, Fizik Eğitimi, Turkey 2001 - 2007

Masters (Non-Thesis), Hacettepe University, Eğitim Fakültesi, Ofma- Fizik Öğretmenliği, Turkey 2001 - 2007

Foreign Languages

English, C1 Advanced

German, B1 Intermediate

Dissertations

Doctorate, UNDERGRADUATE STUDENTS' UNDERSTANDING OF CONCEPTS FOUNDATIONAL TO THE LEARNING OF QUANTUM MECHANICS (QM) VIA MODELS-BASED INQUIRY, Purdue University, College Of Education, Fizik Eğitimi / Bilim Eğitimi, 2017

Postgraduate, TURKISH EIGHTH GRADE STUDENTS' MENTAL MODEL REPRESENTATIONS ABOUT THE NATURE OF MAGNETS AND MAGNETIC INTERACTIONS, Purdue University, College Of Education, Fizik Eğitimi / Bilim Eğitimi, 2011

Research Areas

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

Academic Titles / Tasks

Assistant Professor, Recep Tayyip Erdogan University, Eğitim Fakültesi, Matematik Ve Fen Bilimleri Eğitimi Bölümü, 2021 - Continues

Lecturer PhD, Recep Tayyip Erdogan University, Eğitim Fakültesi, Matematik Ve Fen Bilimleri Eğitimi Bölümü, 2018 - 2021

Research Assistant, Purdue University, Polytechnic Institute, Computer and Information Technology, 2013 - 2017

Research Assistant, Purdue University, College of Education, Educational Studies, 2011 - 2013

Courses

Fizikte Özel Konular, Undergraduate, 2018 - 2019, 2019 - 2020, 2021 - 2022
Fizik I, Undergraduate, 2021 - 2022
Special Teaching Methods, Undergraduate, 2021 - 2022
Out of School Environments, Undergraduate, 2019 - 2020, 2021 - 2022
Genel Fizik Laboratuvarı I, Undergraduate, 2018 - 2019, 2021 - 2022
Genel Fizik Laboratuvarı II, Undergraduate, 2018 - 2019, 2019 - 2020
Field Experience , Undergraduate, 2019 - 2020
Özel Öğretim Yöntemleri I, Undergraduate, 2019 - 2020
Modern Fiziğe Giriş I, Undergraduate, 2019 - 2020
Okul Deneyimi, Undergraduate, 2018 - 2019, 2019 - 2020
Öğretmenlik Uygulaması, Undergraduate, 2018 - 2019
Fizik I, Undergraduate, 2018 - 2019, 2019 - 2020
Okul Dışı Öğrenme Ortamları, Undergraduate, 2019 - 2020
Fizik-2, Undergraduate, 2018 - 2019
Fen – Teknoloji Programı ve Planlama , Undergraduate, 2017 - 2018

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **A learner-centered approach for designing visuohaptic simulations for conceptual understanding of truss structures**
Walsh Y., Magana A. J. , Will H., Yüksel T., Bryan L. A. , Berger E., Berger B.
Computer Applications In Engineering Education, vol.29, no.6, pp.1567-1588, 2021 (Journal Indexed in SCI Expanded)
- II. **Visuohaptic experiments: Exploring the effects of visual and haptic feedback on students' learning of friction concepts**
Yüksel T., Walsh Y., Magana A. J. , Nova N., Krs V., Ngambeki I., Berger E. J. , Benes B.
COMPUTER APPLICATIONS IN ENGINEERING EDUCATION, vol.27, no.6, pp.1376-1401, 2019 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Examining the Views of Preservice Teachers about Online Science Education during the Covid-19 Lockdown: Expectations, Opportunities, Threats, Motivations, and Beliefs**
Avşar Erümit B., Tanış Özçelik A., Yüksel T., Tekbiyık A.
Journal of Turkish Science Education, vol.18, pp.1-25, 2021 (Refereed Journals of Other Institutions)
- II. **Identifying the Expectations of Three Stakeholders of the Field Experience Course via Expectancy Violation Theory**
Yüksel T., Avşar Erümit B.
Hacettepe Eğitim Fakültesi Dergisi, vol.36, no.3, pp.712-741, 2021 (Journal Indexed in ESCI)
- III. **Exploring continuity equation via a modeling activity: in the context of crowd science**
Yüksel T., Tekbiyık A., Avşar Erümit B.
SCIENCE ACTIVITIES-PROJECTS AND CURRICULUM IDEAS IN STEM CLASSROOMS, vol.57, no.2, pp.67-76, 2020 (Journal Indexed in ESCI)
- IV. **In-Service and Pre-Service Teachers' Views about STEM Integration and Robotics Applications**
Yüksel T., Delen I., İlhan Sen A.
EURASIAN JOURNAL OF EDUCATIONAL RESEARCH, no.90, pp.243-268, 2020 (Journal Indexed in ESCI)

Books & Book Chapters

- I. **Argümantasyon İle Modelleme ve Fen Öğretimindeki Örnekleri**
Namdar B., Yüksel T.
in: Fen Öğretiminde Model ve Modelleme, Prof. Dr. Hakan Şevki AYVACI, Editor, Pegem A Yayıncılık, Ankara, pp.103-123, 2021
- II. **Online STEM Education with Web-Based Tools**
Yüksel T., Avşar Erümit B.
in: Fen Bilimleri Öğretimi ve STEM Etkinlikleri (Güncel Öğretim Programlarıyla Uyumlu, PISA-TIMSS Soru Örnekleriyle İlişkilendirilmiş), Ahmet Tekbıyık, Gültekin Çakmakçı, Editor, Nobel Yayınevi, Ankara, pp.283-312, 2021
- III. **Out-of-school learning in Turkey**
Yüksel T., Delen İ.
in: Out-of-School Learning in European Countries, A. İ. Şen, Editor, E-Book, Ankara, pp.24-46, 2021
- IV. **Overview of Out-of-School Learning in Teacher Education Literature**
Şen A. İ., Delen İ., Oktay Ö., Yüksel T., Lindner M., Bilek M., Skoršepa M., Milanović V., Rusek M., Kmet'ová J.
in: Out-of-School Learning in European Countries, A. İ. Şen, Editor, E-Book, Ankara, pp.1-21, 2021
- V. **Adaptation to online science teaching: Experiences of Turkish middle school science teachers.**
Avşar Erümit B., Yüksel T., Tanış Özçelik A., Tekbıyık A.
in: Science Education during the COVID-19 Pandemic: Tales from the Front Lines, Valarie L. Akerson, Ingrid S. Carter, Editor, The International Society for Technology, Education and Science (ISTES), Colorado, pp.35-62, 2021
- VI. **X-Işınları Teknolojisi**
YÜKSEL T., ŞEN A. İ.
in: Bilimin Teknolojideki Uygulamaları, Hakan Şevki Ayvaci, Salih Çepni, Editor, Pegem Akademi Kitabevi Yayınları, Ankara, pp.74-87, 2020
- VII. **Ses**
TEKBİYIK A., YÜKSEL T.
in: Fen Öğretiminde Kavram Yanılgıları: Tespiti ve Giderilmesi, Canan Laçın Şimşek, Editor, Pegem Akademi Kitabevi Yayınları, Ankara, pp.295-328, 2019

Refereed Congress / Symposium Publications in Proceedings

- I. **Using Expectation Violation Theory to Determine the Three Stakeholders' Expectations from the Teaching Experience Course based on Clinical Supervision Model**
Yüksel T., Avşar Erümit B.
National Association for Research in Science Teaching, Oregon, United States Of America, 15 - 18 March 2020, pp.1
- II. **Öğretmen Adaylarının Biyoloji Tabanlı Sosyo-Bilimsel Konularla İlgili Görüşlerini Bilimin Doğası Boyutlarıyla Birleştirerek Modellemesi**
AVŞAR ERÜMİT B., YÜKSEL T.
3. Ulusal Biyoloji Eğitimi Kongresi UBK, Turkey, 21 - 22 December 2019
- III. **Öğretmen Adaylarının Günlük Yaşantıları Okul Dışı Öğrenme Ortamı Olarak Kullanmaları**
YÜKSEL T., Delen İ.
I. Uluslararası İnfomal Öğrenme Kongresi, Nevşehir, Turkey, 1 - 03 November 2019, pp.1
- IV. **USING MODELING PERSPECTIVE TO SOLVE REAL-LIFE PHYSICS PROBLEMS VIA MATHEMATICAL MODELING**
YÜKSEL T., BARAN BULUT D.
European Science Education Research Association, Bologna, Italy, 26 - 30 August 2019, pp.1
- V. **Using Modelling Perspective to Solve Real-Life Physics Problems via Mathematical Modelling**
YÜKSEL T., BARAN BULUT D.
European Science Education Research Association (ESERA), 26 - 30 August 2019
- VI. **Yeniden Yapılandırılan Öğretmenlik Uygulaması Derslerinin Öğretmen Adayları Tarafından Değerlendirilmesi**
YÜKSEL T., AVŞAR ERÜMİT B.

XII. Uluslararası Eğitim Araştırmaları Kongresi, 25 - 28 April 2019

VII. **YENİDEN YAPILANDIRILAN ÖĞRETMENLİK UYGULAMASI DERSLERİNİN ÖĞRETMEN ADAYLARI TARAFINDAN DEĞERLENDİRİLMESİ**

YÜKSEL T., AVŞAR ERÜMİT B.

The Twelfth International Congress of Educational Research, Rize, Turkey, 25 - 28 April 2019, pp.275

VIII. **SON YILLARDA ÜNİVERSİTEYE GİRİŞ SINAVINDA EN ÇOK TERCİH EDİLEN STEM BÖLÜMLERİNİN ANALİZİ**

Mestan F., YÜKSEL T.

The Twelfth International Congress of Educational Research, Rize, Turkey, 25 - 28 April 2019, pp.195

IX. **Öğretmen Adaylarının STEM Eğitimi Çeşitli Fen konularına Uygulama Çalışmaları ve Değerlendirme Yöntemleri**

YÜKSEL T.

13. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Denizli, Turkey, 5 - 07 October 2018, pp.1

X. **What STEM and robotics mean for teachers?**

YÜKSEL T., Delen İ.

27. Uluslararası Eğitim Bilimleri Kongresi ICES / UEBK, Antalya, Turkey, 18 - 20 April 2018, pp.1

XI. **Students' Models about Quantization and Atomic Spectra Before and After Engaging with Model-Based Inquiry**

YÜKSEL T., Bryan L. A.

the National Association for Research in Science Teaching, Atlanta, United States Of America, 10 - 13 March 2018, pp.1

XII. **Model-based inquiry vs. Traditional computer simulation-based instruction: Which can better help students construct the quantum-mechanical model of an atom?**

Yüksel T., Rebello S. N. , Bryan L. A.

Physics Education Research Conference, Ohio, United States Of America, 26 - 27 July 2017, pp.456-459

XIII. **Identifying Affordances of Physical Manipulative Tools for the Design of Visuo-haptic Simulations**

Walsh Y., Magana A. J. , Yüksel T., Krs V., Ngambeki I. B. , Berger E. J. , Benes B.

American Society for Engineering Education (ASEE), Ohio, United States Of America, 24 - 28 June 2017, pp.1-21

XIV. **Monitoring students' atomic model change via model-based inquiry.**

YÜKSEL T., Bryan L. A.

the National Association for Research in Science Teaching, San Antonio, Tx, United States Of America, 22 - 25 April 2017, pp.1

XV. **Exploration of Affordances of Visuo-Haptic Simulations to Learn the Concept of Friction**

Yüksel T., Walsh Y., Krs V., Benes B., Ngambeki I. B. , Berger E. J. , Magana A. J.

IEEE Frontiers in Education Conference (FIE), Indiana, United States Of America, 18 - 21 October 2017

XVI. **Investigating Students Understanding Early Atom Model via Model-Based Inquiry**

YÜKSEL T., Bryan L.

Modeling and Model-Based Reasoning in STEM Conference, West Lafayette, In, United States Of America, 26 - 27 August 2016, pp.1

XVII. **Investigating students' understanding early atomic models via model-based inquiry.**

YÜKSEL T., Bryan L. A.

the American Association of Physics Teachers, Sacramento, Ca, United States Of America, 28 - 30 July 2016, pp.1

XVIII. **Undergraduate students' understandings of concepts foundational to the learning of quantum mechanics (QM) via models-based inquiry.**

YÜKSEL T.

the Physics Education Research Seminar, West Lafayette, In, United States Of America, 15 April 2016, pp.1

XIX. **SMASH*: Modern Physics - Developing Questions**

May B., Thompson P., Walker B., Yannell M., YÜKSEL T.

the American Association of Physics Teachers, New Orleans, La, United States Of America, 22 - 24 January 2016, pp.1

XX. **Evaluation of SMASH*: Modern Physics App.**

YÜKSEL T., Lindell R.

the American Association of Physics Teachers, New Orleans, La, United States Of America, 22 - 24 January 2016, pp.1

- XXI. **Undergraduate students' understandings of concepts foundational to the learning of quantum mechanics.**
YÜKSEL T., Bryan L. A.
the biannual international meeting of the European Science Education Research Association, Helsinki, Finland, 4 - 07 September 2015, pp.1
- XXII. **Learning difficulties and teaching strategies in quantum mechanics: A synthesis of current literature.**
YÜKSEL T., Bryan L. A.
the American Association of Physics Teachers, College Park, Md, United States Of America, 24 - 26 July 2015, pp.1
- XXIII. **<https://peer.asee.org/engineering-and-physics-students-perceptions-about-learning-quantum-mechanics-via-computer-simulations>**
Gong Y., YÜKSEL T., Magana A., Bryan L. A.
ASEE Annual Conference & Exposition, Seattle, Wa, United States Of America, 14 - 17 June 2015
- XXIV. **Engineering and Physics Students' Perceptions About Learning Quantum Mechanics via Computer Simulations**
Gong Y., YÜKSEL T., Alejandra M., Bryan L. A.
ASEE Annual Conference Exposition, Seattle, WA, United States Of America, 14 - 17 June 2015, pp.266141-2661413
- XXV. **Modeling in the Primary Grades (MPG): Examining second graders' emerging particulate models of matter in the context of learning through model-based inquiry.**
Samarapungavan A., Bryan L. A. , Wills J., YÜKSEL T.
the American Educational Research Association, Chicago, Il, United States Of America, 15 - 21 April 2015, pp.1-30
- XXVI. **What do engineering and physics students know about basic quantum concepts?**
YÜKSEL T., Gong Y., Magana A., Bryan L. A.
the annual Graduate Student Educational Research Symposium, West Lafayette, In, United States Of America, 14 - 15 March 2015, pp.1
- XXVII. **Students' understanding of magnetism-related representations through the sense of touch**
YÜKSEL T., Gong Y., Magana A.
the Physics Education Research Conference, Minneapolis, Ma, United States Of America, 30 - 31 July 2014, pp.1
- XXVIII. **Teachers' Experiences of Nanoscale Phenomena through the Sense of Touch: An Exploratory Study of the Use of an AFM Visuohaptic Simulation**
YÜKSEL T., Gong Y., Magana A.
the Physics Education Research Conference, Minneapolis, Ma, United States Of America, 30 July 2014 - 31 July 2014, pp.1
- XXIX. **Basic quantum mechanics concepts from the eyes of engineering and physics students.**
YÜKSEL T., Gong Y., Magana A., Bryan L. A.
the American Association of Physics Teachers, Minneapolis, Ma, United States Of America, 25 - 27 July 2014, pp.1
- XXX. **Physics and engineering students' initial conceptual understanding on basic quantum mechanics concepts**
YÜKSEL T.
the Physics Education Research Seminar, West Lafayette, In, United States Of America, 18 April 2014, pp.1
- XXXI. **Examining the consistency in eight grade students' mental model representations about magnetic interactions**
YÜKSEL T., Bryan L. A.
the National Association for Research in Science Teaching, San Juan, Puerto Rico, 6 - 09 April 2013, pp.1
- XXXII. **The Next Generation Science Standards: To what extent are modern physics concepts included?**
YÜKSEL T., Bryan L. A.
the American Association of Physics Teachers, New Orleans, La, United States Of America, 25 - 28 January 2013, pp.1

- XXXIII. **Design fixation and cooperative learning strategies in elementary engineering education.**
Boots N., Tafur M., Kim W., Carr R. L. , Luo Y., Sun Y., YÜKSEL T., Weber N. R. , Dyehouse M., Strobel J.
the American Educational Research Association, Vancouver, British Columbia, Canada, 13 - 17 April 2012, pp.1
- XXXIV. **Eight grade Turkish students' mental models about magnetism and magnetic interactions**
YÜKSEL T., Bryan L. A.
the 6th Annual Graduate Student Educational Research Symposium, West Lafayette, In, United States Of America, 9
- 10 March 2012, pp.1

Supported Projects

- YÜKSEL T., AVŞAR ERÜMİT B., AYDIN B., Project Supported by Higher Education Institutions, Beklentinin İhlali Teorisi Kullanılarak Klinik Danışmanlık Modeline Göre Yürütülen Öğretmenlik Uygulaması Dersinin Başarısının Değerlendirilmesi İçin Yeni Bir Ölçek Geliştirilmesi, 2019 - Continues
- Baran Bulut D., Yüksel T., TUBITAK Project, Hayatı Modelleyen Öğretmenler: Matematiksel Modelleme Eğitimi-II, 2021 - 2022
- Yüksel T., Şen A. İ. , Delen İ., Oktay Ö., EU Supported Other Project, Developing an Out-of-School Learning Curriculum for Teacher Education Programs, 2019 - 2021
- Yarar Kaptan S., Deniz Ü., Tekbıyık A., Beldağ A., Yüksel T., Uzun N., Altun E., TUBITAK Project, Fen-Sosyal-Matematik Entegrasyonu ile Disiplinlerarası Tematik Öğretim Uygulamaları, 2018 - 2019
- Yüksel T., Samarapungavan A., Bryan L., Other Supported Projects, Sensing Science through Modeling Matter, 2017 - 2018
- Yüksel T., Magana A., Other Supported Projects, Haptic-Based Learning Experiences as Cognitive Mediators for Conceptual Understanding and Representational Fluency in Engineering Education, 2016 - 2017
- Yüksel T., Magana A., Other Supported Projects, Quantum LEAP, 2013 - 2016
- Yüksel T., Reifengerger R., Other Supported Projects, SMASH Physics Mobil App, 2015 - 2015
- Yüksel T., Samarapungavan A., Bryan L., Other Supported Projects, Modeling in Primary Grades, 2012 - 2014
- YÜKSEL T., Other Supported Projects, Modeling in Primary Grades (MPG): Science Learning through Content-rich Inquiry, 2012 - 2014
- YÜKSEL T., Other Supported Projects, I-STEM Resource Network, 2011 - 2012

Memberships / Tasks in Scientific Organizations

- National Association of Research in Science Teaching (NARST) , Membership Committee, Member, 2021 - Continues, United States Of America
- European Science Education Research Associaton, Member, 2014 - Continues
- National Association for Research in Science Teaching (NARST), Member, 2011 - Continues

Scientific Refereeing

- SCIENCE ACTIVITIES-PROJECTS AND CURRICULUM IDEAS IN STEM CLASSROOMS, Journal Indexed in ESCI, September 2021
- Hacettepe Üniversitesi Eğitim Dergisi, National Scientific Refreed Journal, November 2019
- Hacettepe Üniversitesi Eğitim Dergisi, National Scientific Refreed Journal, April 2019
- SDU International Journal of Educational Studies, National Scientific Refreed Journal, March 2019
- Computer Applications in Engineering Education, SCI Journal, October 2017

Scientific Research / Working Group Memberships

Cyberlearning Consortium, Purdue University, United States Of America, <https://polytechnic.purdue.edu/cyberlearning-consortium>, 2017 - Continues

ROCKETEd (Research on Computing in Engineering and Technology Education at Purdue University, Purdue University, United States Of America, <https://polytechnic.purdue.edu/rocketed>, 2014 - 2017

Citations

Total Citations (WOS):4

h-index (WOS):1

Scholarships

Dean's Doctoral Scholarship, University, 2016 - Continues

Yurtdışında Lisansüstü Eğitim Bursu, Ministry of Education, 2008 - Continues

Awards

YÜKSEL T., The Jane and Michael Wilson Doctoral Award in Science Education, College of Education, Purdue University, May 2013

YÜKSEL T., Certificate of Appreciation, Turkish Educational Consulate, August 2010