

# CURRICULUM VITAE

## EBRU KAYA, Ph.D.

### Personal Information

**Academic Title** : Professor  
**Work Phone** : +90 212 359 6914  
**Mail Address** : Bogazici University, Faculty of Education, Department of Mathematics and Science Education, 34342, Bebek, Istanbul/TURKEY  
**E-mail** : [eburu.kaya@boun.edu.tr](mailto:eburu.kaya@boun.edu.tr)

### Educational Background

**B.S.&M.S.** **University** : Dokuz Eylul University  
**Faculty** : Faculty of Education  
**Department** : Secondary Science and Mathematics  
Education/Chemistry Education  
**Year of Graduation** : 2003

**Ph.D.** **University** : Middle East Technical University  
**Faculty** : Faculty of Education  
**Department** : Secondary Science and Mathematics  
Education/Chemistry Education  
**Title of Dissertation** : The Effect of Conceptual Change Based Instruction on Students' Understanding of Rate of Reaction Concepts  
**Supervisor** : Prof. Ömer Geban  
**Year of Graduation** : 2011

### Academic Experience

Title	Affiliation	Year
Professor	Bogazici University, Istanbul, Turkey	June 2020-
Honorary Research Fellow	University of Oxford, United Kingdom	Nov. 2019-
Visiting Scholar	University of Oxford, United Kingdom	Sep. 2022-Sep.2023
Associate Professor	Bogazici University, Istanbul, Turkey	Aug. 2014-July 2020

Visiting Scholar	National Taiwan Normal University, Taipei, Taiwan	July 2017-August 2017
Visiting Scholar	National Taiwan Normal University, Taipei, Taiwan	July 2016-Aug. 2016
Associate Professor	Selcuk University, Konya, Turkey	Jan. 2014-Aug. 2014
Post-Doc Researcher	Middle East Technical University, Ankara, Turkey	Apr. 2013-Apr. 2014
Graduate Research Assistant	Selcuk University, Konya, Turkey	Oct. 2011- Jan. 2014
Visiting Scholar	University of Bristol, Bristol, United Kingdom	Jan. 2009- Jan. 2010
Research Assistant	Middle East Technical University, Ankara, Turkey	Apr. 2004- Oct. 2011

### Research Interests

Nature of Science  
 Argumentation in Science Education  
 Epistemological Perspectives in Science Education  
 Misconceptions and Conceptual Change in Chemistry

### Awards

1. Middle East Technical University Incentive Award for Scientific Publication 2009
2. TÜBİTAK (The Scientific and Technological Research Council of Turkey) Incentive Award for Scientific Publication 2012
3. Middle East Technical University Incentive Award for Scientific Publication 2013
4. TÜBİTAK Incentive Award for Scientific Publication 2013
5. TÜBİTAK Incentive Award for Scientific Publication 2014
6. Science Academy Young Scientists Program Award 2015
7. Bogazici University Special Award 2015
8. Bogazici University Academic Incentive Award 2015
9. Bogazici University Academic Incentive Award 2016
10. EASE (East-Asian Association Science Education) Outstanding Paper Award 2016
11. Bogazici University Publication Award 2016
12. TÜBİTAK Incentive Award for Scientific Publication 2017
13. TÜBİTAK Incentive Award for Scientific Publication 2017
14. TÜBİTAK Young Scientist Award 2017
15. Bogazici University Publication Award 2018
16. TÜBİTAK Incentive Award for Scientific Publication 2019

17. TÜBİTAK Incentive Award for Scientific Publication	2019
18. Bogazici University Publication Award	2019
19. Bogazici University Publication Award	2019
20. Honorary Research Fellowship, University of Oxford	2019
21. TÜBİTAK Incentive Award for Scientific Publication	2020
22. TÜBİTAK Incentive Award for Scientific Publication	2020
23. Bogazici University Publication Award	2020
24. Bogazici University Publication Award	2020
25. Bogazici University Publication Award	2020
26. Bogazici University Publication Award	2020
27. TÜBİTAK Incentive Award for Scientific Publication	2021
28. Bogazici University Publication Award	2021
29. TÜBİTAK Incentive Award for Scientific Publication	2023
30. TÜBİTAK Incentive Award for Scientific Publication	2023
31. TÜBİTAK Incentive Award for Scientific Publication	2023

## Scholarships

### International Scholarships

1. NARST International Committee Conference Scholarship	2006
2. NARST International Committee Conference Scholarship	2010
3. ESERA Biannual Conference Scholarship	2011
4. NARST LSEP (Linking Science Educators Program) Project in Rwanda	2014
5. NARST LSEP (Linking Science Educators Program) Project in Lebanon	2015
6. ESERA Biannual Conference Scholarship	2015
7. IHPST Conference Scholarship	2015

### National Scholarships

1. OYP (Program of Training Academicians) Conference Scholarship	2005
2. TÜBİTAK Ph.D. Scholarship (5 years)	2005
3. TÜBİTAK Conference Scholarship	2006
4. TÜBİTAK Conference Scholarship	2007
5. OYP Conference Scholarship	2008
6. OYP Conference Scholarship	2008
7. OYP, Ph.D. Research Scholarship in United Kingdom (1 year)	2009
8. TÜBİTAK, Ph.D. Research Scholarship in United Kingdom (3 months)	2009
9. OYP Conference Scholarship	2010

10. OYP Conference Scholarship	2010
11. Selcuk University, Conference Scholarship	2012
12. Selcuk University, Conference Scholarship	2013
13. Bogazici University, Conference Scholarship	2015
14. Bogazici University, Conference Scholarship	2015
15. Bogazici University, Conference Scholarship	2015
16. TÜBİTAK Conference Scholarship	2015
17. Bogazici University, Conference Scholarship	2016
18. Bogazici University, Conference Scholarship	2016
19. Bogazici University, Conference Scholarship	2017
20. Bogazici University, Conference Scholarship	2018
21. Bogazici University, Conference Scholarship	2019
22. TÜBİTAK, Post-Doc Research Scholarship in United Kingdom (12 months)	2022
23. Bogazici University, Conference Scholarship	2023

### Projects

Researcher in the project entitled “Revisiting Scientific Inquiry in the Classroom: Towards an Interdisciplinary Framework for Science Teaching and Learning”, funded by TUBITAK and European Union Marie Curie Co-Fund Brain Circulation Scheme Fellowship (291762/2236), Principal Investigator: Prof. Sibel Erduran (University of Limerick, Ireland). July 2013- July 2015

Researcher in the project entitled “Enhancing Argumentation in Science Education in Rwanda”, funded by NARST (A Worldwide Organization for Improving Science Teaching and Learning Through Research) - LSEP (Linking Science Educators Program), Principal Investigator: Prof. Sibel Erduran (University of Limerick, Ireland). May 2014- Nov. 2014

Researcher in the project entitled “Infusing Scientific Practices in Science Education in Lebanon”, funded by NARST (A Worldwide Organization for Improving Science Teaching and Learning Through Research) - LSEP (Linking Science Educators Program), Principal Investigator: Prof. Zoubeida Dagher (University of Delaware, USA). April 2015- Dec. 2015

Principal investigator of the project entitled “Nature of Science in Science Teacher Education: A Comparative Research and Development Project”, funded by Bogazici University Research Fund (Grant Number: 10621). Feb. 2016- 2018

Principal investigator of the project entitled “University Students’ Understanding of Reconceptualized Family Resemblance Approach to Nature of Science: A Case Study”, funded by Bogazici University Research Fund (Grant Number: 12860). June 2017- 2018

Principal investigator of the project entitled “Integration of Reconceptualized Family Resemblance Approach to Nature of Science in 5th Grade Science Content”, funded by Bogazici University Research Fund (Grant Number: 14922). December 2018-2019

Principal investigator of the project entitled “Science Textbooks Analysis, and Relationship between Understanding of Nature of Science and Metacognitive Awareness”, funded by Bogazici University Research Fund (Grant Number: 17142). August 2020-September 2021

Researcher in the project entitled “SciKids Project: Understanding the Nature of Science Education in Early Years in the UAE”, funded by United Arab Emirates University (Grant Number: G00003448). Principal Investigator: Assoc. Prof. Rachel Takriti (United Arab Emirates University, UAE). January 2021-June 2023

Principal investigator of the project entitled “Nature of Science in Physics, Chemistry and Biology Curricula: Comparison between Turkey and England”, funded by TUBITAK 2219-International Post-Doctoral Research Fellowship Programme. September 2022-September 2023

## Publications

### Articles published in the journals that are indexed in SCI (Science Citation Index), SSCI (Social Science Citation Index), AHCI (Arts and Humanities Citation Index)

1. Cetin, P. S., Kaya, E., & Geban, O. (2009). Facilitating conceptual change in gases concepts. *Journal of Science Education and Technology*, 18(2), 130-137.
2. Kaya, E. & Geban, O. (2012). Facilitating conceptual change in rate of reaction concepts using conceptual change oriented instruction. *Education and Science*, 37(163), 216-225.
3. Aydeniz, M., Pabuccu, A., Cetin, P. S., & Kaya, E. (2012). Argumentation and students' conceptual understanding of properties and behaviors of gases. *International Journal of Science and Mathematics Education*, 10(6), 1303-1324. DOI: 10.1007/s10763-012-9336-1.
4. Kaya, E. & Erduran, S. (2013). Integrating epistemological perspectives on chemistry in chemical education: The cases of concept duality, chemical language, and structural explanations. *Science & Education*, 22(7), 1741-1755. DOI: 10.1007/s11191-011-9399-3.
5. Kaya, E. (2013). Argumentation practices in classroom: Pre-service teachers' conceptual understanding of chemical equilibrium. *International Journal of Science Education*, 35(7), 1139-1158. DOI:10.1080/09500693.2013.770935.
6. Erduran, S. & Kaya, E. (2016). Scientific argumentation and deliberative democracy: An incompatible mix in school science? *Theory into Practice*. 55(4), 302-310. DOI: 10.1080/00405841.2016.1208067.
7. Kaya, E. & Erduran, S. (2016). From FRA to RFN, or how the family resemblance

approach can be transformed for science curriculum analysis on nature of science. *Science & Education*, 25(9), 1115-1133.

8. Erduran, S. & Kaya, E. (2018). Drawing nature of science in pre-service science teacher education: Epistemic insight through visual representations. *Research in Science Education*, 48(6), 1133-1149. DOI: 10.1007/s11165-018-9773-0.
9. Kaya, E. (2018). Argumentation in elementary science education: addressing methodological issues and conceptual understanding. *Cultural Studies in Science Education*, 13(4), 1087-1090. DOI: 10.1007/s11422-017-9848-7.
10. Kaya, E., Erduran, S., Aksoz, B., & Akgun, S. (2019). Reconceptualised family resemblance approach to nature of science in pre-service science teacher education. *International Journal of Science Education*, 41(1), 21-47. DOI: 10.1080/09500693.2018.1529447.
11. Akgun, S. & Kaya, E. (2020). How do university students perceive the nature of science? *Science & Education*, 29(2), 299-330. DOI: 10.1007/s11191-020-00105-x.
12. Akbayrak, M. & Kaya, E. (2020). Fifth-grade students' understanding of social-institutional aspects of science. *International Journal of Science Education*, 42(11), 1834-1861. DOI: 10.1080/09500693.2020.1790054.
13. Erduran, S., Kaya, E., Cilekrenkli, A., Akgun, S., & Aksoz, B. (2021). Perceptions of nature of science emerging in group discussions: A comparative account of pre-service teachers from Turkey and England. *International Journal of Science and Mathematics Education*, 19(7), 1375-1396. DOI: 10.1007/s10763-020-10110-9.
14. Cilekrenkli, A. & Kaya, E. (2023). Learning science in context: Integrating a holistic approach to nature of science in the lower secondary classroom. *Science & Education*, 32(5), 1435-1469. DOI: 10.1007/s11191-022-00336-0.
15. Okan, B. & Kaya, E. (2023). Exploring the inclusion of nature of science in Turkish middle school science textbooks. *Science & Education*, 32(5), 1515-1535. DOI: 10.1007/s11191-022-00371-x.
16. Goren, D. & Kaya, E. (2023). How is students' understanding of nature of science related with their metacognitive awareness? *Science & Education*, 32(5), 1471-1496. DOI: 10.1007/s11191-022-00381-9.
17. Takriti, R. A., Erduran, S., Tairab, H., Kaya, E., Alhosani, N., Rabbani, L. & Alamirah, I. (2022). Translation and validation of a questionnaire for measuring teachers' views on nature of science. *Research in Science & Technological Education*. DOI: 10.1080/02635143.2022.2138846.
18. Aksoz, B., Kaya, E., & Cilekrenkli, A. (2023). A science teacher's autoethnographic reflections on teaching nature of science. *Science & Education*. DOI: 10.1007/s11191-023-00462-3.
19. Kurt, G. & Kaya, E. (2023). Toward a holistic vision on the nature of science in science curricula: an investigation of primary and middle school curricula in Turkey. *Research in Science & Technological Education*. DOI: 10.1080/02635143.2023.2262400.

#### Articles published in the journals that are not indexed in SCI, SSCI, and AHCI

1. Kaya, E., Erduran, S., & Cetin, P. S. (2010). High school students' perceptions of argumentation. *Procedia – Social and Behavioral Sciences*, 2(2), 3971-3975.
2. Kaya, E. & Geban, O. (2011). The effect of conceptual change based instruction on students' attitudes toward chemistry. *Procedia – Social and Behavioral Sciences*, 15, 515-

3. Aydeniz, M. & Kaya, E. (2012). Factors impacting Turkish students' attitudes towards science and their academic performance in science. *Journal of Turkish Science Education*, 9(2), 25-48.
4. Kaya, E. & Cetin, P. S. (2012). Investigation of pre-service chemistry teachers' chemistry laboratory anxiety levels. *International Journal of New Trends in Education and Their Implications*, 3(3), 90-98.
5. Kaya, E., Erduran, S., & Cetin, P. S. (2012). Discourse, argumentation, and science lessons: Match or mismatch in high school students' perceptions and understanding? *Mevlana International Journal of Education*, 2(3), 1-32.
6. Kaya, E., Cetin, P. S., & Yildirim, A. (2012). Transformation of centralized curriculum into classroom practice: An analysis of teachers' experiences. *International Journal of Curriculum and Instructional Studies*, 2(3), 103-113.

### Articles published in the National Journals

1. Akcay, H. Alpat, S. K., Oter, O., Demir, D., Ozbayrak, O., Kaya, E., Acar, B., & Bekci, Z. (2001). Analitik kimyada aktif öğrenme: Asit baz indikatörlerinin değişik çözgenlerde öğrenci tasarımı titrasyon uygulamaları. *Buca Eğitim Fakültesi Dergisi*, 13, 69-74.
2. Cetin, P. S., Erduran, S., & Kaya, E. (2010). Understanding the nature of chemistry and argumentation: The case of pre-service chemistry teachers. *Kırşehir Üniversitesi Eğitim Fakültesi Dergisi (KEFAD)*, 11(4), 41-59.
3. Kaya, E. & Yildirim, A. (2014). Science anxiety among failing students. *Elementary Education Online*, 13(2), 518-525.
4. Kaya, E., Cetin, P. S., & Erduran, S. (2014). Adaptation of two argumentation tests in Turkish. *Elementary Education Online*, 13(3), 1014-1032.
5. Cetin, P. S., Kutluca, A. Y., & Kaya, E. (2014). Öğrencilerin argümantasyon kalitelerinin incelenmesi. *Fen Bilimleri Öğretimi Dergisi*, 2(1), 56-66.
6. Cetin, P. S., Kaya, E., & Geban, O. (2014). Students', pre-service teachers', and in-service teachers' views about constructivist implementations. *Necatibey Eğitim Fakültesi Dergisi*, 8(2), 143-163.
7. Kaya, E. & Erduran, S. (2016). Yeniden kavramsallaştırılmış "Aile Benzerliği Yaklaşımı": Fen eğitiminde bilimin doğasına bütünsel bir bakış açısı, *Türk Fen Eğitimi Dergisi*, 13(2), 76-89.
8. Cetin, P. S., Metin, D., & Kaya, E. (2016). Laboratuvar uygulamalarında yeni bir yaklaşım: Argüman temelli sorgulayıcı araştırma (ATSA). *Kırşehir Eğitim Fakültesi Dergisi*, 17(2), 223-242.
9. Erduran, S., Kaya, E., & Cetin, P. S. (2016). Pre-service teachers' perceptions of argumentation: Impact of a teacher education project in Rwanda. *Bogazici University Journal of Education*, 33(1), 5-25.
10. Kaya, E., Erduran, S., Akgun, S., & Aksoz, B. (2017). Öğretmen eğitiminde bilimin doğası: Bütünsel bir yaklaşım. *Necatibey Eğitim Fakültesi Elektronik Fen ve Matematik Eğitimi Dergisi*, 11(2), 464-501.
11. Kurt, G. & Kaya, E. (2023). Fen bilimleri öğretim programında yeniden kavramsallaştırılmış aile benzerliği yaklaşımına dayalı bilimin doğası ve öğretmen görüşleri. *Buca Eğitim Fakültesi Dergisi*, 57, 1780-1807.

12. Gören, D. & Kaya, E. (2023). Öğrencilerin bilimin doğası anlayışları ile üst bilişsel farkındalıkları arasındaki ilişki. *Boğaziçi Üniversitesi Eğitim Dergisi*, 40-2(2), 315-336.
13. Okan, B. & Kaya, E. (2023). 5. sınıf fen bilimleri ders kitabında bilimin doğası: bütünsel bir yaklaşıma dayalı içerik analizi. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi*, 43(3), 1521-1560.

## Books

1. Erduran, S. & Kaya, E. (2019). *Transforming Teacher Education through the Epistemic Core of Chemistry: Empirical Evidence and Practical Strategies*. Dordrecht: Springer.

## Book Chapters

1. Erduran, S., Kaya, E., & Dagher, Z. (2018). From lists in pieces to coherent wholes: Nature of science, scientific practices, and science teacher education. In, J. Yeo, T. W. Teo & K. S. Tang (Eds.), *Research and Practice in the Asia-Pacific Region* (pp.3-24). Dordrecht: Springer.
2. Erduran, S., Kaya, E., & Cetin, P. S. (2018). Consolidation of conceptual change, argumentation, models and explanations: Why it matters for science education. In, T. Amin, & O. Levrini (Eds.), *Converging and Complementary Perspectives on Conceptual Change* (pp.153-162). London: Routledge.
3. Erduran, S., & Kaya, E. (2018). STEM'in Dogasi: Aile Benzerligi Yaklasimi'nin STEM Eğitimi'ne Uygulanmasi. D. In Akgunduz (Eds), *Okul Oncesinden Universiteye Kuram ve Uygulamada STEM Eğitimi* (pp. 51-67). Ankara: Ani Yayıncılık.
4. Erduran, S., Kaya, E., Cullinane, A., Imren, O., & Kaya, S. (2020). Practical learning resources and teacher education strategies for understanding nature of science. In, W. McComas (Ed.), *Nature of Science in Science Instruction: Rationales and Strategies*, (pp. 377-398). Dordrecht: Springer.
5. Erduran, S., Kaya, E., & Avraamidou, L. (2020). Does research on nature of science and social justice intersect? Exploring theoretical and practical convergence for science education. In H. Yacoubian & L. Hansson (Eds.), *Nature of Science for Social Justice*, (97-113). Dordrecht: Springer.
6. Okan, B. & Kaya, E. (2023). A content analysis of the representation of the nature of science in a Turkish science textbook. In G. S. Carvalho, A. S. Afonso, & Z. Anastácio (Eds.), *Fostering Scientific Citizenship in an Uncertain World: Selected Papers from the ESERA 2021 Conference*, (63-78). Dordrecht: Springer.

## Published Resources

1. Erduran, S., Mugaloglu, E. Z., Kaya, E., Sarıbaş, D., Ceyhan, G. & Dagher, Z. (2016). *Learning to Teach Scientific Practices: A Professional Development Resource*. University of Limerick.
2. Adams, J., Avraamidou, L., Bayram-Jacobs, D., Boujaoude, S., Bryan, L., Christodoulou,



A., ...Kaya, E., ... Zembal-Saul, C. (2018). *The Role of Science Education in a Changing World*. Lorentz Center, Netherlands.

#### **Conference Papers presented in the international conferences and published in the proceedings**

1. Cetin, A., Kaya, E., & Geban, O. (2005). *Facilitating conceptual change in acid-base concepts*. Proceedings of the British Educational Research Association (BERA) Annual Conference, Cardiff, United Kingdom.
2. Kaya, E., Cetin, P. S., & Geban, O. (2008). *Facilitating conceptual change in gases concepts*. Proceedings of the XIII. International Organization for Science and Technology Education (IOSTE) Symposium, Kusadasi, Turkey.
3. Cetin, P. S., Kaya, E., & Erduran, S. (2009). *Investigating pre-service science teachers' understanding of argument*. Proceedings of the III. International Computer & Instructional Technologies Symposium, Trabzon, Turkey.
4. Akgun, S. & Kaya, E. (2019). *How do university students perceive social-institutional aspects of nature of science?* Proceedings of the International History, Philosophy, and Science Teaching (IHPST) Conference, Thessaloniki, Greece.
5. Cilekrenkli, A., Okan, B., & Kaya, E. (2020). *Comparison of illustrative cases: Changes in students' understanding and perceptions of NOS*. Proceedings of the VII. International Eurasian Educational Research Congress. Eskisehir, Turkey.
6. Okan, B. & Kaya, E. (2021). *Second and fourth grade pre-service science teachers' understanding of Reconceptualized Family Resemblance Approach to Nature of Science (RFN)*. Proceedings of the XIX. International Organization for Science and Technology Education (IOSTE) Symposium, Daegu, Korea.
7. Aksoz, B. & Kaya, E. (2021). *Exploring scientists' perceptions about the nature of science*. Proceedings of the XIX. International Organization for Science and Technology Education (IOSTE) Symposium, Daegu, Korea.
8. Goren, D. & Kaya, E. (2021). *Students' understanding of Reconceptualized Family Resemblance Approach to Nature of Science*. Proceedings of the XIX. International Organization for Science and Technology Education (IOSTE) Symposium, Daegu, Korea.

#### **Conference Papers presented in the international conferences and published in the abstract books**

1. Kaya, E., Bozkoyun, Y., & Geban, O. (2006). *Facilitating conceptual change in learning rate of reaction concepts*. Paper presented at the NARST (A Worldwide Organization for Improving Science Teaching and Learning Through Research) Annual Conference, San Francisco, CA.
2. Cetin, P. S., Kaya, E., & Geban, O. (2007, September). *Promoting conceptual change in chemical equilibrium concepts*. Paper presented at the European Conference on Educational Research (ECER), Ghent, Belgium.
3. Kaya, E. & Yildirim, A. (2008). *Science anxiety among failing students*. Paper presented at the NARST Annual Conference, Baltimore, MD.
4. Kaya, E. Erduran, S., & Cetin, P. S. (2010, February). *High school students' perceptions of argumentation*. Paper presented at the II. World Conference on Educational Sciences,

Istanbul, Turkey.

5. Kaya, E., Erduran, S., & Cetin, P. S. (2010). *Assessing understanding of argument: Investigating pre-service science teachers' arguments and implications for classroom practice*. Paper presented at the NARST Annual Conference, Philadelphia, PA.
6. Scheid, N. M., Schwartz, R., Kremer, K., Mayer, J., Cetin, P. S., Erduran, S., & Kaya, E. (2010). *NOS between subject-specific and subject-comprehensive science education approaches*. Paper presented at the NARST Annual Conference, Philadelphia, PA.
7. Kaya, E. & Erduran, S. (2010, June). *The case of concept duality in chemistry and implications for restructuring the chemistry curriculum*. Paper presented at XIV. World Congress of Comparative Education Societies, Istanbul, Turkey.
8. Kaya, E. & Geban, O. (2011, February). *The effect of conceptual change based instruction on students' attitudes toward chemistry*. Paper presented at the III. World Conference on Educational Sciences, Istanbul, Turkey.
9. Kaya, E. & Aydeniz, M. (2011, September). *Variables predicting Turkish high school students' attitudes toward science*. Paper presented at European Conference on Educational Research, Berlin, Germany.
10. Kaya, E., Cetin, P. S., & Yildirim, A. (2011, September). *Transformation of centralized curriculum into classroom practice: An analysis of teachers' experiences*. Paper presented at European Conference on Educational Research, Berlin, Germany.
11. Kaya, E. & Erduran, S. (2011, September). *Integrating epistemological perspectives on chemistry in chemical education*. Paper presented at the European Science Education Research Association (ESERA) Conference, Lyon, France.
12. Aydeniz, M., Cetin, P. S., Pabuccu, A., & Kaya, E. (2012). *Exploring the impact of argumentation on college students' conceptual understanding of the properties and behavior of gases*. Paper presented at the NARST Annual Conference, Indianapolis, IN.
13. Kaya, E. & Cetin, P. S. (2012, April). *Pre-service chemistry teachers' laboratory anxiety levels*. Paper presented at International Conference on New Trends in Education, Antalya, Turkey.
14. Cetin, P. S. & Kaya, E. (2012, April). *Relationship between students' content knowledge and engagement in argumentation: literature review*. Paper presented at International Conference on New Trends in Education, Antalya, Turkey.
15. Kaya, E. & Cetin, P. S. (2012, October). *Pre-service chemistry teachers' perceptions of difficult chemistry topics*. Paper presented at International Journal of Arts and Sciences Conference, Rome, Italy.
16. Kaya, E., Erduran, S., & Cetin, P. S. (2013). *Pre-service science teachers' understanding and evaluation of arguments*. Paper presented at the NARST Annual Conference, Rio Grande, Puerto Rico.
17. Cetin, P. S., Kaya, E., & Geban, O. (2013, April). *Perceptions about constructivist science classes: Students, pre-service teachers, and in-service teachers*. Paper presented at International Conference on New Trends in Education, Antalya, Turkey.
18. Erduran, S., Kaya, E., & Cetin, P. S. (2015, January). *Promoting pre-service teachers' learning of argumentation in Rwanda*. Paper presented at Southern African Association for Research in Math, Science, & Technology Education (SAARMSTE) Conference, Maputo, Mozambique.
19. Kaya, E. & Erduran, S. (2015, January). *Pre-service science teachers' visual representations of scientific practices*. Paper presented at Southern African Association for Research in Math, Science, & Technology Education (SAARMSTE) Conference, Maputo,

Mozambique.

20. Erduran, S., Kaya, E., Cetin, P. S., O'Grady, A., Leahy, K., Uworwabayeho, A., & Mutarutinya, V. (2015, April). *Enhancing science teachers' learning of argumentation in Rwanda*. Paper presented at the NARST Annual Conference, Chicago, IL.
21. Erduran, S., Saribas, D., Mugaloglu, E. Z., Kaya, E., Dagher, Z. R., & Ceyhan, G. (2015, April). *Defining and understanding scientific practices in pre-service science teacher education*. Paper presented at the NARST Annual Conference, Chicago, IL.
22. Erduran, S., Dagher, Z. R., Mugaloglu, E. Z., Kaya, E., Saribas, D., & Ceyhan, G. (2015, April). *Toward a holistic account of scientific practices in science teacher education*. Paper presented at American Educational Research Association (AERA) Conference, Chicago, IL.
23. Kaya, E., Saribas, D., & Erduran, S. (2015, April). *Pre-service science teachers' perceptions of scientific practices*. Paper presented at International Organization for Science and Technology Education (IOSTE) Symposium, Istanbul, Turkey.
24. Kaya, E. & Erduran, S. (2015, July). *Missing pieces and holes in the Turkish middle school science curriculum: Towards a reconceptualized holistic account of NOS*. Paper presented at the International History, Philosophy, and Science Teaching (IHPST) Conference, Rio de Janeiro, Brasil.
25. Kaya, E. & Erduran, S. (2015, September). *Integrating epistemological perspectives on chemistry in chemical education*. Paper presented at the European Science Education Research Association (ESERA) Conference, Helsinki, Finland. (Invited Symposium)
26. Kaya, E., Erduran, S., & Cetin, P. S. (2016, March). *Incorporating a holistic model of nature of science in pre-service science teacher education*. Paper presented at the New Perspectives in Science Education Conference, Florence, Italy.
27. Cetin, P. S. & Kaya, E. (2016, March). *Effectiveness of argument-driven inquiry on pre-service teachers' scientific writing skills*. Paper presented at the New Perspectives in Science Education Conference, Florence, Italy.
28. Dagher, Z., Erduran, S., Kaya, E., BouJaoude, S. (2016, April). *Supporting science teachers' inclusion of scientific practices in Lebanon*. Paper presented at the Annual NARST Conference, Baltimore, MD.
29. Akdemir, Z. G., Babur, N., & Kaya, E. (2016, April). *Reading scientific text for students with learning difficulties (LD)*. Paper presented at the World Conference on Psychology, Counseling and Guidance, İzmir, Turkey.
30. Kaya, E., & Erduran, S. (2016, June). *Nature of science in science education: A curriculum analysis based on the family resemblance approach*. Paper presented at III. International Eurasian Educational Research Congress, Mugla, Turkey.
31. Erduran, S., & Kaya, E., (2016, June). *Argumentation in science education: Contributions from models of deliberative democracy*. Paper presented at III. International Eurasian Educational Research Congress, Mugla, Turkey.
32. Aksoz, B., Kaya, E., Erduran, S., Akgun, S., & Tas, T. (2016, June). *Pre-service science teachers' perceptions of the nature of science: An investigation based on the Family Resemblance Approach*. Paper presented at III. International Eurasian Educational Research Congress, Mugla, Turkey.
33. Kaya, E., & Erduran, S. (2016, August). *Bird's eye view on science: Pre-service science teachers' representations of nature of science*. Paper presented at the International Conference of East-Asian Association for Science Education. Tokyo, Japan.
34. Kaya, E., & Erduran, S. (2016, August). *Nature of science in pre-service teacher*

- education: Learning to teach epistemic practices of chemistry.* Paper presented at the International Conference of East-Asian Association for Science Education. Tokyo, Japan.
35. Erduran, S. & Kaya, E. (2016, August). *Infusing epistemic practices in chemistry curricula: A theoretical framework.* Paper presented at the International Conference of East-Asian Association for Science Education. Tokyo, Japan.
  36. Erduran, S. & Kaya, E. (2016, August). *Using political theory to frame argumentation for science education: The case of deliberative democracy.* Paper presented at the International Conference of East-Asian Association for Science Education. Tokyo, Japan.
  37. Akgun, S., Aksoz, B., Kaya, E., & Erduran, S. (2016, October). *Pre-service science teachers' perceptions about social-institutional systems of science: A research project based on the Family Resemblance Approach.* Paper presented at the Limerick Symposium on Nature of Science in Science Education: Recent Debates and Future Directions. Limerick, Ireland.
  38. Aksoz, B., Akgun, S., Kaya, E., & Erduran, S. (2016, October). *Teaching scientific practices and scientific knowledge through a holistic approach.* Paper presented at the Limerick Symposium on Nature of Science in Science Education: Recent Debates and Future Directions. Limerick, Ireland.
  39. Kaya, E. & Erduran, S. (2017, April). *Theories, laws and models as scientific knowledge forms and their inclusion in science teacher education.* Paper presented at the Annual NARST Conference, San Antonio, TX.
  40. Erduran, S. & Kaya, E. (2017, April). *Beyond the myth of the "Scientific Method": A case study of pre-service chemistry teachers' understanding of the diversity of scientific methods.* Paper presented at the Annual NARST Conference, San Antonio, TX.
  41. Akgun, S., Kaya, E., Erduran, S., & Aksoz, B. (2017, April). *Pre-service science teachers' perceptions of scientific knowledge.* Paper presented at the Annual NARST Conference, San Antonio, TX.
  42. Akgun, S., Aksoz, B., Kaya, E., & Erduran, S. (2017, July). *Pre-service science teachers' understanding of methods and methodological rules of science.* Paper presented at the International History, Philosophy, and Science Teaching (IHPST) Conference. Ankara, Turkey.
  43. Aksoz, B., Akgun, S., Erduran, S., & Kaya, E. (2017, July). *Exploring pre-service science teachers' understanding about social-institutional aspects of science.* Paper presented at the International History, Philosophy, and Science Teaching (IHPST) Conference. Ankara, Turkey.
  44. Aksoz, B. Kaya, E., Erduran, S., & Akgun, S. (2017, August). *Pre-service science teachers' understanding of scientific practices: A mixed method investigation.* Paper presented at the European Science Education Research Association (ESERA) Conference, Dublin, Ireland.
  45. Akgun, S., Erduran, S., Kaya, E., & Aksoz, B. (2017, August). *Pre-service science teachers' understanding of aims and values of science.* Paper presented at the European Science Education Research Association (ESERA) Conference, Dublin, Ireland.
  46. Erduran, S. & Kaya, E. (2017, August). *Drawing nature of science in pre-service science teacher education.* Paper presented at the European Science Education Research Association (ESERA) Conference, Dublin, Ireland.
  47. Yeh, Y-F., Erduran, S., Ying-Shao, H., & Kaya, E. (2017, August). *Scientific practices-A kaleidoscopic array of scientific learning?* Paper presented at the European Science Education Research Association (ESERA) Conference, Dublin, Ireland.
  48. Kaya, E. & Erduran, S. (2017, August). *A Holistic view on nature of science in pre-service*

- science teacher education*. Paper presented at the European Science Education Research Association (ESERA) Conference, Dublin, Ireland.
49. Kaya, E. & Erduran, S. (2017, August). *How social justice can be promoted through nature of science in science education*. Paper presented at the European Science Education Research Association (ESERA) Conference, Dublin, Ireland.
  50. Kampourakis, K., Abd-El-Khalick, F., Lederman, J., Lederman, N. G., Clough, M., McComas, W. F., Erduran, S., Kaya, E., Aksoz, B., & Akgun, S. (2018, March). *Practical perspectives in teaching and learning nature of science*. Paper presented at the Annual NARST Conference, Atlanta, GA.
  51. Aksoz, B., Erduran, S., Kaya, E., & Akgun, S. (2018, March). *Investigating pre-service science teachers' understanding about cognitive-epistemic systems of science*. Paper presented at the Annual NARST Conference, Atlanta, GA.
  52. Demirtas, C. & Kaya, E. (2018, May). *Scientific practices in early childhood science education: An action research*. Paper presented at V. International Eurasian Educational Research Congress, Antalya, Turkey.
  53. Aksoz, B., Kiziltepe, Z., & Kaya, E. (2018, May). *Science teachers' understanding of the aims and values, and social-institutional aspects of nature of science*. Paper presented at V. International Eurasian Educational Research Congress, Antalya, Turkey.
  54. Alayoglu, M. & Kaya, E. (2018, May). *5<sup>th</sup> grade students' understanding of social-institutional aspects of science*. Paper presented at V. International Eurasian Educational Research Congress, Antalya, Turkey.
  55. Cilekrenkli, A., Akgun, S., Aksoz, B., Erduran, S., & Kaya, E. (2018, May). *Nature of science in science teacher education: A comparative study in the contexts of Turkey and England*. Paper presented at V. International Eurasian Educational Research Congress, Antalya, Turkey.
  56. Akgun, S. & Kaya, E. (2018, May). *University students' understanding of nature of science in terms of reconceptualized family resemblance approach*. Paper presented at V. International Eurasian Educational Research Congress, Antalya, Turkey.
  57. Kaya, E. & Erduran, S. (2018, July). *A holistic view on nature of chemistry in pre-service teacher education*. Paper presented at 25<sup>th</sup> IUPAC International Conference on Chemistry Education (ICCE), Sydney, Australia.
  58. Erduran, S. & Kaya, E. (2018, July). *Visualizing nature of science: case studies of pre-service chemistry teachers*. Paper presented at 25<sup>th</sup> IUPAC International Conference on Chemistry Education (ICCE), Sydney, Australia.
  59. Cilekrenkli A. & Kaya, E. (2019, April). *Teaching 13reconceptualized family resemblance approach to nature of science in lower secondary lessons*. Paper presented at the Annual NARST Conference, Baltimore, MD.
  60. Cilekrenkli, A., Kaya, E., Erduran, S., Akgun, S., & Aksoz, B. (2019, April). *Perceptions of nature of science: a comparative study on pre-service teachers from England and Turkey*. Paper presented at the Annual NARST Conference, Baltimore, MD.
  61. McDonald, C. V., Dagher, Z. R., Erduran, S., Kaya, E., Cullinane, A., Kelly, R., Cilekrenkli, A., Aksoz, B., & Akgun, S. (2019, April). *Emergent Research using the family resemblance approach to nature of science in science education*. Paper presented at the Annual NARST Conference, Baltimore, MD.
  62. Erduran, S. & Kaya, E. (2019, August). *Epistemic core of chemistry in teacher education: Practical approaches and empirical evidence*. Paper presented at the European Science Education Research Association (ESERA) Conference, Bologna, Italy.

63. Aksoz, B., Kiziltepe, Z., & Kaya, E. (2019, August). *Science teachers' perceptions of the nature of science considering their pre and in-service education*. Paper presented at the European Science Education Research Association (ESERA) Conference, Bologna, Italy.
64. Aksoz, B., Kaya, E., Erduran, S., Akgun, S., & Cilekrenkli, A. (2019, August). *Pre-service science teachers' perceptions of nature of science: Focus group discussion*. Paper presented at the European Science Education Research Association (ESERA) Conference, Bologna, Italy.
65. Cilekrenkli, A. & Kaya, E. (2019, August). *Teaching with reconceptualized family resemblance approach to nature of science in 5<sup>th</sup> grade classroom: An experimental study*. Paper presented at the European Science Education Research Association (ESERA) Conference, Bologna, Italy.
66. Kaya, E. & Erduran, S. (2019, October). *How do chemistry teachers perceive the epistemic core of science?* Paper presented at the International Conference on Educational Research (ICER), Izmir, Turkey.
67. Kaya, E. & Erduran, S. (2019, October). *Integration of the epistemic core of chemistry in pre-service teacher education*. Paper presented at the Alliance of Improving Scientific Literacy for All Students (AISL) Conference, Beijing, China.
68. Erduran, S. & Kaya, E. (2020, June). *Epistemic core of chemistry in chemistry education: Implications for teacher education*. Paper presented at the Australian Science Education Research Association (ASERA) 2020 Online Conference.
69. Cilekrenkli, A. & Kaya, E. (2020, September). *Towards more comprehensive and contextualized NOS teaching approaches: Can RFN improve students' understanding of social-institutional aspects of science?* Paper presented at VII. International Eurasian Educational Research Congress (Online). Eskisehir, Turkey.
70. Akgun, S. & Kaya, E. (2021, April). *Investigating university students' perceptions of the nature of science*. Poster presented at the Annual NARST Conference (Online).
71. Aksoz, B., Kaya, E., & Erduran, S. (2021, August). *How do science teachers from different career stages perceive the nature of science?* Paper presented at the European Science Education Research Association (ESERA) Conference, Braga, Portugal (Online).
72. Goren, D., & Kaya, E. (2021, August). *The relationship between students' understanding of nature of science and their metacognitive awareness*. Paper presented at the European Science Education Research Association (ESERA) Conference, Braga, Portugal (Online).
73. Okan, B., & Kaya, E. (2021, August). *A content analysis of the representation of nature of science in Turkish science textbook*. Paper presented at the European Science Education Research Association (ESERA) Conference, Braga, Portugal (Online).
74. Okan, B., & Kaya, E. (2022, March). *Exploring the articulation of nature of science ideas in Turkish middle school science textbooks*. Paper presented at the Annual NARST Conference, Vancouver, BC. (Online).
75. Goren, D., & Kaya, E. (2022, March). *Middle school students' understanding of nature of science and their metacognitive awareness*. Paper presented at the Annual NARST Conference, Vancouver, BC.
76. Takriti, R., Tairab, H. H., Erduran, S., Kaya, E., Alhosani, N., Rabbani, L. M., & AlAmirah, I. (2022, March). *Adaptation and validation of a questionnaire for measuring teachers' views on nature of science*. Paper presented at the Annual NARST Conference, Vancouver, BC.
77. Okan, B., & Kaya, E. (2022, July). *Representation of nature of science in science textbooks: Science, engineering and entrepreneurship applications*. Paper presented at the 3rd International STEM Education Conference, Istanbul, Turkey.

78. Okan, B., & Kaya, E. (2022, July). *The science teachers' views on social-institutional aspects of science represented in the science textbooks*. Paper presented at the IHPST Conference, Calgary, Canada. (Online).
79. Kurt, G., & Kaya, E. (2022, July). *Cognitive-epistemic categories of science in the Turkish science curriculum*. Paper presented at the IHPST Conference, Calgary, Canada. (Online).
80. Goren, D., & Kaya, E. (2022, July). *6<sup>th</sup> grade students' understanding of nature of science and their metacognitive awareness*. Paper presented at the IHPST Conference, Calgary, Canada.
81. Okan, B. & Kaya, E. (2023, April). *Representation of social-institutional aspects of science in the science textbooks: Textbook analysis and teachers' views*. Paper presented at the Annual NARST Conference, Chicago, IL.
82. Goren, D. & Kaya, E. (2023, April). *Examining middle school students' nature of science views*. Paper presented at the Annual NARST Conference, Chicago, IL.
83. Kaya, E. & Erduran, S. (2023, August). *Nature of science in physics, chemistry and biology curricula in England*. Paper presented at the European Conference on Educational Research (ECER), Glasgow, UK.
84. Okan, B. & Kaya, E. (2023, August). *How science teachers' views on inclusion of nature of science in the textbooks are in line with the textbook analysis findings?* Paper presented at the European Science Education Research Association (ESERA) Conference, Cappadocia, Turkey.
85. Aksoz, B., Kaya, E., & Cilekrenkli, A. (2023, August). *Teaching nature of science: A science teacher's autoethnographical reflections*. Poster presented at the European Science Education Research Association (ESERA) Conference, Cappadocia, Turkey.
86. Goren, D. & Kaya, E. (2023, August). *How do students view social-institutional systems of nature of science?* Paper presented at the European Science Education Research Association (ESERA) Conference, Cappadocia, Turkey.
87. Kurt, G. & Kaya, E. (2023, August). *Science teachers' views on nature of science and its inclusion in the science curriculum*. Paper presented at the European Science Education Research Association (ESERA) Conference, Cappadocia, Turkey.

#### **Conference Papers presented in the national conferences and published in the proceedings**

1. Seker, A., Kaya, E., Firat, G. G., & Geban, Ö. (2006). *Atom, molekül, iyon ve madde kavramlarında kavramsal değişim sağlama*. VII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Ankara.
2. Cetin, P. S., Kaya, E., & Yildirim, A. (2008). *Kimya öğretmenlerinin program algısı ve öğretimde yaşanan problemler*. VIII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Bolu.
3. Kaya, E., Cetin, P. S., & Geban, O. (2008). *Kimya öğretmen adaylarının bazı kimya konuları ile ilgili kavram yanlışları*. VIII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Bolu.
4. Kaya, E. (2012). *Argümantasyona dayalı etkinliklerin öğretmen adaylarının kimyasal denge konusunu anlamalarına etkisi*. X. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Niğde.

**Conference Papers presented in the national conferences and published in the abstract books**

1. Kaya, E. & Geban, O. (2008, October). *Lise öğrencilerinin reaksiyon hızı konusundaki kavram yanlışları*. XXII. Ulusal Kimya Kongresi, Magusa, K.K.T.C.
2. Sağlam, G., Cetin, P. S., Kaya, E., & Geban, O. (2008, October). *Öğrencilerin kimya dersinde başarı ve başarısızlık algılarının yüklenme teorisi açısından incelenmesi*. XXII. Ulusal Kimya Kongresi, Magusa, K.K.T.C.
3. Kaya, E. & Geban, O. (2010, September). *Reaksiyon hızı konusunda kavramsal değişim sağlama*. IX. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, İzmir.
4. Kaya, E. & Erduran, S. (2015, September). *Parçalardan bütünlere: Bilimin doğasını kimya öğretim programında yeniden nasıl tanımlayabiliriz?* Ulusal Kimya Eğitimi Kongresi, Ayvalık-Balıkesir.
5. Akgun, S., Aksoz, B., Kaya, E., Erduran, S., & Tas, T. (2016, September). *Aile benzerliği yaklaşımına dayalı bilimin doğası öğretimi: Öğretmen adaylarının bilimin sosyal ve kurumsal yönlerine ilişkin algıları*. XII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Trabzon.
6. Tas, T., Cetin, P. S., Kaya, E., Erduran, S., Akgun, S., & Aksoz, B. (2016, September). *Öğretmen adaylarının bilimin doğasına ilişkin görüşleri: Aile benzerliği yaklaşımına dayalı bir çalışma*. XII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Trabzon.
7. Akgun, S. & Kaya, E. (2018, October). *Üniversite öğrencileri bilimi nasıl algılıyor?* XIII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Denizli.
8. Akgun, S. & Kaya, E. (2018, October). *Üniversite öğrencilerinin bilimin doğasına ilişkin anlayışları*. XIII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Denizli.
9. Aksoz, B., Kızıltepe, Z., & Kaya, E. (2018, October). *Fen branşındaki öğretmenlerin bilimin amaç ve değerleri ile sosyal ve kurumsal yönlerine ilişkin algılarının lisans eğitimi ve hizmet içi eğitimler kapsamında değerlendirilmesi*. XIII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Denizli.
10. Akgun, S., Erduran, S., Kaya, E., & Aksoz, B. (2018, October). *Öğretmen adaylarının bilimin 16lişkin16c, bilişsel ve sosyal-kurumsal yönlerine ilişkin algıları*. XIII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Denizli.
11. Cilekrenkli, A., Kaya, E., Erduran, S., Aksoz, B., & Akgun, S. (2018, October). *Türkiye ve İngiltere'deki öğretmen adaylarının bilimin doğasına ilişkin görüşlerinin karşılaştırılması*. XIII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi, Denizli.
12. Aksoz, B., Kurt, G., & Kaya, E. (2021, May). *Fen bilimleri öğretmenlerinin bilimin doğasına yönelik algılarının hizmet yıllarına göre incelenmesi*. XIV. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi (Online), Burdur.
13. Okan, B. & Kaya, E. (2021, May). *5. Sınıf fen bilimleri ders kitabının bilimin doğası açısından incelenmesi*. XIV. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi (Online), Burdur.
14. Okan, B. & Kaya, E. (2021, May). *Fen bilimleri öğretmenlerinin bilimin doğası anlayışlarının incelenmesi*. XIV. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi (Online), Burdur.
15. Goren, D. & Kaya, E. (2021, May). *Ortaokul öğrencilerinin bilimin doğasına 16lişkin görüşleri*. XIV. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi (Online), Burdur.
16. Goren, D. & Kaya, E. (2021, May). *Bilimin doğası ve üstbilişsel farkındalık ilişkili mi?*



### Plenary Speaker

1. *From Theory to Practice: Reconceptualized Family Resemblance Approach to Nature of Science in Science Teacher Education*, Limerick Symposium on Nature of Science in Science Education: Recent Debates and Future Directions, University of Limerick, Limerick, Ireland, October 26-28. 2016
2. *The Integration of the Reconceptualized Family Resemblance Approach to Nature of Science in Science Teacher Education*, 13. International Balkan Education and Science Congress, Trakya University, Edirne, Turkey, September 06-08. 2018

### Invited Speaker

1. *Pre-Service Science Teachers' Understanding and Evaluation of Arguments*, University of Rwanda, Kigali, Rwanda, June 18. 2014
2. *A New Perspective on Nature of Science: Scientific Practices and Teacher Education*, Hacettepe University, Ankara, Turkey, September 20. 2014
3. *A New Perspective on Nature of Science*, Gaziosmanpasa University, Tokat, Turkey, May 14. 2015
4. *Implementing the Reconceptualized Family Resemblance Approach to Nature of Science in Science Teacher Education*, National Taiwan Normal University, Taipei, Taiwan, August 2. 2016
5. *Application of Reconceptualized Family Resemblance Approach to Nature of Science (RFN) in Teacher Education*, Adnan Menderes University, Aydin, Turkey, March 9-10. 2017
6. Workshop entitled "Argumentation and Nature of Science in Science Teaching", National Taitung University, Taitung, Taiwan, July 13-18. 2017
7. *Re-conceptualizing the Nature of Science*, Lorentz Center, Leiden, Netherlands, January 10. 2018
8. *Application of Reconceptualized Family Resemblance Approach to Nature of Science (RFN) in Teacher Education*, Bartın University, Bartın, Turkey, March 19. 2018

### Teaching Experience

#### Instructor in Undergraduate & Graduate Courses (Bogazici University)

PRED 470 Assessment in Mathematics and Science Education, Fall	2014
PRED 471 Teaching Science II, Fall	2014
PRED 462 Applied Research in Mathematics and Science Education, Spring	2015
PRED 474 Practice Teaching in Science, Spring	2015
PRED 476 Seminar on Practice Teaching in Science, Spring	2015
PRED 460 Research Methods in Mathematics and Science Education, Summer	2015
PRED 460 Research Methods in Mathematics and Science Education, Fall	2015
PRED 470 Assessment in Mathematics and Science Education, Fall	2015
PRED 474 Practice Teaching in Science, Spring	2016
PRED 476 Seminar on Practice Teaching in Science, Spring	2016
PRED 431 Nature of Science for Science Teachers, Spring	2016
PRED 539 Graduate Seminar, Spring	2016
PRED 460 Research Methods in Mathematics and Science Education, Fall	2016
PRED 462 Applied Research in Mathematics and Science Education, Spring	2017
PRED 474 Practice Teaching in Science, Spring	2017
PRED 476 Seminar on Practice Teaching in Science, Spring	2017
SCED 404 Research Methods in Mathematics and Science Education, Fall	2017
SCED 461 Teaching Methods in Science, Fall	2017
SCED 462 Practice Teaching in Science, Spring	2018
SCED 464 Seminar on Practice Teaching in Science, Spring	2018
SCED 58E Special Topic/Nature of Science in Science Education, (Graduate) Spring	2018
SCED 404 Research Methods in Mathematics and Science Education, Fall	2018
SCED 461 Teaching Methods in Science, Fall	2018
SCED 462 Practice Teaching in Science, Spring	2019
SCED 464 Seminar on Practice Teaching in Science, Spring	2019
LS 669 Argumentation and Learning Sciences, Spring	2019
SCED 404 Research Methods in Mathematics and Science Education, Fall	2019
SCED 461 Teaching Methods in Science, Fall	2019
SCED 462 Practice Teaching in Science, Spring	2020
SCED 464 Seminar on Practice Teaching in Science, Spring	2020
SCED 58E Special Topic/Nature of Science in Science Education, (Graduate)	2020

Spring

SCED 404 Research Methods in Mathematics and Science Education, Fall	2020
SCED 370 Assessment and Evaluation of Learning in Science and Mathematics, Fall	2020
SCED 462 Practice Teaching in Science, Spring	2021
SCED 464 Seminar on Practice Teaching in Science, Spring	2021
SCED 450 Practice Teaching in Mathematics and Science, Fall	2021
SCED 464 Seminar on Practice Teaching in Science, Spring	2022
SCED 404 Research Methods in Mathematics and Science Education, Fall	2023
SCED 450 Practice Teaching in Mathematics and Science, Fall	2023

### **Guest Instructor at Medipol University**

PSY2151270 Research Methods in Psychology, Fall	2019
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### **Master Supervision**

Nihal Karabas (2017)	The Effect of Scientific Practice-Based Instruction on Seventh Graders' Perceptions of Scientific Practices, Bogazici University.
Melike Alayoglu (2018)	Fifth-Grade Students' Attitudes Towards Science and Their Understanding of Its Social-Institutional Aspects, Bogazici University.
Selin Akgun (2018)	University Students' Understanding of the Nature of Science, Bogazici University.
Aysegul Çilekrenkli (2019)	Teaching Reconceptualized Family Resemblance Approach to Nature of Science in Lower Secondary Classroom, Bogazici University.
Busra Aksoz (2019) (Co-Advisor)	The Effects of Pre- and In-Service Training on Teachers' Understanding of the Nature of Science, Bogazici University.
Beyza Okan (2021)	Exploring The Representation of the Nature of Science in Science Textbooks, Bogazici University.
Dilara Goren (2021)	The Relationship Between Students' Understanding of Nature of Science and Their Metacognitive Awareness, Bogazici University.

Gözde Kurt (2022)

The Inclusion of the Nature of Science in Turkish Science Curriculum, Bogazici University.

### External Examination

Marmara University, Turkey	Ph. D. Viva, Candan Cengiz, June 5, 2017
University of Limerick, Ireland	Ph. D. Viva, Alison Cullinane, April 6, 2018
Dokuz Eylul University, Turkey	Ph. D. Viva, Ayse Buber Kilinc, June 29, 2021
Bolu Abant Izzet Baysal University, Turkey	Ph. D. Viva, Ferah Ozer, August 16, 2021

### Invitation to Advice at International Levels

South Africa's National Research Foundation (NRF)	2018 Sep.
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### Editor

#### Journals

Fen Bilimleri Öğretimi Dergisi (as the editor in the field of Chemistry Education)	2013-2015
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### Reviewer

#### Journals

International Journal of Science Education	2013-
Science & Education	2013-
International Journal of Science and Mathematics Education	2014-
Cultural Studies of Science Education	2017-
Eğitim ve Bilim/Education and Science	2019-

### Seminars and Workshops Delivered

1. Science Education and Research Association Summer School funded by TUBITAK: Recent Approaches in Science Education and Statistical Applications, Canakkale, Turkey, June 23-29. 2013
2. Workshop on Argumentation in Science Teaching and Learning funded by NARST-LSEP (Linking Science Educators Program), University of Rwanda, Kigali, Rwanda, June 16-18. 2014
3. Seminar entitled "From Pieces to Wholes: Reconceptualizing the Nature of 2014

- Scientific Practices and Implications for Teachers' Professional Development", Bogazici University, Istanbul, Turkey, June 24.
4. Seminar entitled "Scientific Practices: What Are They and How Can They Be Promoted in School Science?", Bogazici University, Istanbul, Turkey, December 22. 2014
  5. Workshop entitled "The Application of Scientific Practices in Science Education", Bogazici University, Istanbul, Turkey, December 22. 2014
  6. Seminar entitled "Reconceptualizing the Nature of Scientific Practices and Implications for Teachers' Professional Development", Bogazici University, Istanbul, Turkey, February 20. 2015
  7. Workshop entitled "The Application of Scientific Practices in Science Education", Gaziosmanpasa University, Tokat, Turkey, May 14. 2015
  8. Seminar entitled "From scientific inquiry to scientific practices: Redefining teaching and learning of science", American University of Beirut, Beirut, Lebanon, October 29. 2015
  9. Workshop entitled "Scientific Practices: Implications for the Science Classroom", American University of Beirut, Beirut, Lebanon, October 30-31. 2015
  10. Workshop entitled "Toulmin Argumentation Model", TÜBİTAK Project, Dokuz Eylül University, Izmir, Turkey, November 9-10. 2015
  11. Workshop entitled "How Can We Teach Nature of Science through a Holistic Approach?", Bartın University, Bartın, Turkey, May 5. 2016
  12. Seminar entitled "Application of Reconceptualized Family Resemblance Approach to Nature of Science (RFN) in Teacher Education" Kafkas University, Kars, Turkey, November 25. 2016
  13. Workshop entitled "What Can Be Done to Give Students a Compatible and Holistic Story about Science? Kafkas University, Kars, Turkey, November 25. 2016
  14. Workshop entitled "How Can We Teach Nature of Science Through a Consistent and Holistic Approach?", Adnan Menderes University, Aydin, Turkey, March 9. 2017
  15. Workshop entitled "How Can We Teach Scientific Practices and Scientific Knowledge Through a Holistic Approach?", Middle East Technical University, Ankara, Turkey, March 16-17. 2017
  16. Seminar entitled "Application of Reconceptualized Family Resemblance Approach to Nature of Science (RFN) in Teacher Education", Middle East Technical University, Ankara, Turkey, March 17. 2017
  17. Workshop entitled "How Can We Teach Scientific Practices and Scientific Knowledge Through a Holistic Approach?", Mugla Sitki Kocman University, Mugla, Turkey, November 16. 2017
  18. Seminar entitled "Application of Reconceptualized Family Resemblance Approach to Nature of Science (RFN) in Teacher Education", Mugla Sitki Kocman University, Mugla, Turkey, November 17. 2017
  19. Workshop entitled "How Can We Teach Scientific Practices and Scientific Knowledge Through a Holistic Approach?", Yuzuncu Yil University, Van, Turkey, November 30. 2017
  20. Seminar entitled "Application of Reconceptualized Family Resemblance 2017

Approach to Nature of Science (RFN) in Teacher Education”, Yuzuncu Yil University, Van, Turkey, December 1.

21. Workshop entitled “How Can We Teach Scientific Practices and Scientific Knowledge Through a Holistic Approach?”, Firat University, Elazig, Turkey, December 14. 2017
22. Seminar entitled “Application of Reconceptualized Family Resemblance Approach to Nature of Science (RFN) in Teacher Education”, Firat University, Elazig, Turkey, December 15. 2017
23. Workshop entitled “How Can We Teach Scientific Practices and Scientific Knowledge Through a Holistic Approach?”, Bartin University, Bartin, Turkey, March 19. 2018
24. Seminar entitled “Application of Reconceptualized Family Resemblance Approach to Nature of Science (RFN) in Teacher Education”, Bartin University, Bartin, Turkey, March 19. 2018
25. Workshop entitled “Reconceptualized Family Resemblance Approach to Nature of Science”, TÜBİTAK 2237 Project, Mugla Sitki Kocman University, Online, October 19-20. 2021
26. Workshop entitled “A Recent Approach on Nature of Science”, TÜBİTAK 2237 Project, Bolu Abant İzzet Baysal University, Online, March 9. 2022
27. Workshop entitled “A Recent Approach on Nature of Science: Reconceptualized Family Resemblance Approach to Nature of Science”, Bartin University and Tokat Gaziosmanpaşa University, Online, May 25. 2022

### Panelist

1. Panel on Measurement and Evaluation with Different Aspects in Education, Teachers’ Day Program, Bogazici University, Istanbul, Turkey, November 24. 2017
2. Evaluation Panel of Project Proposals, TUBITAK (The Scientific and Technological Research Council of Turkey), Ankara, Turkey. 2017
3. Evaluation Panel of Project Proposals, TUBITAK, Ankara, Turkey. 2018
4. Evaluation Panel of Project Proposals, TUBITAK, Ankara, Turkey. 2019
5. Evaluation Panel of Project Proposals, TUBITAK, Ankara, Turkey. 2020
6. Panel 2: Nature of Science, 3. International Conference on Science, Mathematics, Entrepreneurship and Technology Education, October 2. 2021

### Memberships in Scientific Associations

1. The Young Science Academy
2. European Science Education Research Association (ESERA)
3. NARST: A Worldwide Organization for Improving Science Teaching and Learning Through Research
4. International History, Philosophy, and Science Teaching (IHPST)

### Seminars and Workshops Attended

1. 1<sup>st</sup> Turkish Doctoral Symposium in Science Education, Ahi Evran University, Kirsehir, Turkey, August 29-30. 2009
2. 8<sup>th</sup> Research Methods Seminar/ Academic Writing Seminar by Dr. Metin Kozak, Concorde De Luxe Resort, Antalya, Turkey, January 27-31. 2010
3. Foundations in Teaching in Higher Education Seminars by Dr. Virginia Lee. Middle East Technical University, Ankara, Turkey, October 05-11. 2010
4. Workshop on Cooperation of Theory and Practice in Education, Selcuk University, Konya, Turkey, November 25. 2011
5. Science Education and Research Association Workshops-II: LISREL and NVivo, Nigde University, Nigde, Turkey, June 26. 2012
6. Seminar on Socio-Scientific Issues, Prof. Dana Zeidler, Dr. Ahmet Kilinc, Dr. Ozgul Yilmaz-Tuzun, Learning and Student Development (LSD) Office Middle East Technical University, Ankara, Turkey, August 1. 2012
7. Seminar on Students' Engagement in Epistemic Practices in the Science Classroom: Producing Expressed Models by Prof. Maria Pilar Jimenez-Alexiandre, Boğaziçi University, Istanbul, Turkey, August 26. 2013
8. Seminar on From Dogma to Reason: Research and Development on Argumentation in Science Education by Prof. Sibel Erduran, Bogazici University, Istanbul, Turkey, November, 22. 2014
9. TÜBİTAK Seminar on Project Proposal Writing, Ankara, Turkey, March 26. 2014

### Board and Committee Memberships in National and International Associations and Actions

1. Project Reviewer, METU College Science Festival 2005
2. Administrative Board Member, Science Education and Research Association 2012-2014
3. Regulatory Board Member, Science Education and Research Association –Seminar on Nature of Science and its Teaching, Selcuk University, Konya, Turkey. 2013
4. Regulatory Board Member and Scientific Board Member, Science Education and Research Association Summer School funded by TUBITAK: Recent Approaches in Science Education and Statistical Applications, Canakkale, Turkey. 2013
5. Committee Member, NARST Outstanding Paper Award (OPA) Committee 2013-2015
6. Regulatory Board Member, Science Education and Research Association Workshops III: Developments in Curriculum of Science Education, Marmara University, Istanbul, Turkey. 2013
7. Scientific Board Member, National Chemical Education Congress, Balikesir University, Ayvalik-Balikesir, Turkey. 2015
8. Proposal Reviewer, 25<sup>th</sup> National Educational Sciences Congress, Antalya, Turkey. 2016

9. Strand Co-coordinator, ESERA, Strand 6: Nature of Science: History, Philosophy and Sociology of Science. 2018-2022
10. Scientific Board Member, National Chemical Education Congress, Hacettepe University, Ankara, Turkey. 2019
11. Board Member, Directorate of Science Fellowships and Grant Programmes (BİDEB) Advisory Board, TÜBİTAK, Turkey. 2020-2021
12. Board Member, Journal of Bayburt Faculty of Education Advisory Board, Bayburt University, Turkey. 2020-
13. Board Member, BİDEB-Social and Human Sciences Research Grant Group (SOBAG) Advisory Board, TÜBİTAK, Turkey. 2023-

### **Board and Committee Memberships at Bogazici University**

1. Board Member, Research Politics Advisory Board, Bogazici University, Turkey 2016-
2. Board Member (Associate Professors Representative), Faculty Board, Faculty of Education, Bogazici University, Turkey 2015-2018
3. Committee Member, Award Committee, Faculty of Education, Bogaziçi University, Turkey 2015-2018
4. Committee Member, Accreditation and Evaluation Committee, Faculty of Education, Bogazici University, Turkey 2015-2020
5. Committee Member, The Ethics Committee for Master and PhD Theses in Social Sciences and Humanities, Bogazici University, Turkey 2016-2022
6. Advisor, Education and Research Club (EREC), Bogazici University, Turkey 2016-2022
7. Board Member (as Head of Department), Faculty Board, Faculty of Education, Bogazici University, Turkey 2021-2022
8. Board Member (as Professors Representative), Faculty Executive Board, Faculty of Education, Bogazici University, Turkey 2021-2022

### **Administrative Duties**

1. Associate Head of Department, Department of Mathematics and Science Education, Bogazici University 2016-2018
2. Head of the Department, Department of Mathematics and Science Education, Bogazici University April 2021-September 2022

### **Others**

<b>Title</b>	<b>Explanation</b>
NLP (Neuro Linguistic Programming) Certificate	Middle East Technical University, Continuing Education Center (2005)