

# CURRICULUM VITAE

## EBRU KAYA, Ph.D.

### Personal Information

**Academic Title** : Associate Professor  
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### 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. Dr. Omer Geban  
**Year of Graduation** : 2011

### Academic Experience

Title	Affiliation	Year
Associate Professor	Bogazici University, Istanbul, Turkey	August 2014-
Visiting Scholar	National Taiwan Normal University, Taipei, Taiwan	July 2017
Visiting Scholar	National Taiwan Normal University, Taipei, Taiwan	July 2016-August 2016

Associate Professor	Selcuk University, Konya, Turkey	January 2014-August 2014
Post-Doc Researcher	Middle East Technical University, Ankara, Turkey	April 2013-April 2014
Graduate Research Assistant	Selcuk University, Konya, Turkey	October 2011- January 2014
Visiting Scholar	University of Bristol, Bristol, United Kingdom	January 2009- January 2010
Research Assistant	Middle East Technical University, Ankara, Turkey	April 2004- October 2011

### Research Interests

Nature of Science  
 Argumentation in Science Education  
 Misconceptions and Conceptual Change in Chemistry  
 Epistemological Perspectives in Science Education  
 Attitude towards Science/Chemistry- Science Anxiety

### 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. Kaya, E., Erduran, S., Aksoz, B., & Akgun, S. (2018). Reconceptualised Family Resemblance Approach to Nature of Science in pre-service science teacher education. *International Journal of Science Education*.
9. Erduran, S. & Kaya, E. (2018). Epistemic insight through visual representations: Drawing nature of science in pre-service science teacher education, *Research in Science Education*.

#### 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, 515-519.
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.
7. 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.
8. Kaya, E. (2017). Argumentation in elementary science education: addressing methodological issues and conceptual understanding. *Cultural Studies in Science Education*. 10.1007/s11422-017-9848-7.

#### 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 çözümlerde 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. 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.

## 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). Epistemic grounding 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. (in press). Designing practical learning resources and teacher education strategies on nature of science. In, W. McComas (Ed.), *The Nature of Science in Science Education: Rationales and Strategies*, Second Edition. 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.

### 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*. Proceedings of 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*. Proceedings the NARST Annual Conference, Baltimore, MD.
4. Kaya, E. Erduran, S., & Cetin, P. S. (2010, February). *High school students' perceptions of argumentation*. Proceedings of 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*. Proceedings of 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*. Proceedings of 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*. Proceedings of 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) Biannual 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*. Proceedings of 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*. Proceedings of 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*. Proceedings of 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*. Proceedings of 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) Biannual 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) Biannual 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) Biannual 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) Biannual 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) Biannual 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) Biannual 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) Biannual 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.

#### **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 yükleme 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 benzerliđi yaklařımına dayalı bilimin dođası öđretimi: Öđretmen adaylarının bilimin sosyal ve kurumsal yönlerine iliřkin algıları*. XII. Ulusal Fen Bilimleri ve Matematik Eđitimi Kongresi, Trabzon.
6. Tas, T., Cetin, P. S., Kaya, E., Erduran, S., Akgun, S., & Aksoz, B. (2016, September). *Öđretmen adaylarının bilimin dođasına iliřkin görüřleri: Aile benzerliđi yaklařımına dayalı bir çalıřma*. XII. Ulusal Fen Bilimleri ve Matematik Eđitimi Kongresi, Trabzon.
7. Akgun, S. & Kaya, E. (2018, October). *Üniversite öđrencileri bilimi nasıl algılıyor?* XIII. Ulusal Fen Bilimleri ve Matematik Eđitimi Kongresi, Denizli.
8. Akgun, S. & Kaya, E. (2018, October). *Üniversite öđrencilerinin bilimin dođasına iliřkin anlayıřları*. XIII. Ulusal Fen Bilimleri ve Matematik Eđitimi Kongresi, Denizli.
9. Aksoz, B., Kiziltepe, Z., & Kaya, E. (2018, October). *Fen branřındaki öđretmenlerin bilimin amaç ve deđerleri ile sosyal ve kurumsal yönlerine iliřkin algılarının lisans eđitimi ve hizmet içi eđitimler kapsamında deđerlendirilmesi*. XIII. Ulusal Fen Bilimleri ve Matematik Eđitimi Kongresi, Denizli.
10. Akgun, S., Erduran, S., Kaya, E., & Aksoz, B. (2018, October). *Öđretmen adaylarının bilimin epistemik, biliřsel ve sosyal-kurumsal yönlerine iliřkin algıları*. XIII. Ulusal Fen Bilimleri ve Matematik Eđitimi Kongresi, Denizli.
11. Cilekrenkli, A., Kaya, E., Erduran, S., Aksoz, B., & Akgun, S. (2018, October). *Türkiye ve İngiltere'deki öđretmen adaylarının bilimin dođasına iliřkin görüřlerinin karřılařtırılması*. XIII. Ulusal Fen Bilimleri ve Matematik Eđitimi Kongresi, Denizli.

## 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), Project coordinator: Prof. Sibel Erduran (University of Limerick, Ireland)., Other researchers in the project team: Dr. Ebru Mugaloglu and Gaye Ceyhan (Bogazici University, Turkey), Dr. Deniz Saribas (Istanbul Aydin University), and Prof. Zoubeida Dagher (University of Delaware, USA). 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), Project coordinator: Prof. Sibel Erduran (University of Limerick, Ireland). Other researchers in the project team: Dr. Keelin Leahy and Dr. Audrey O'Drady (University of Limerick, Ireland), Dr. Pinar Seda Cetin (Abant Izzet Baysal University, Turkey), Dr. Alphonse Uworwabayeho and Dr. Vedaste Mutarutinya (University of Rwanda, Rwanda) May 2014- November 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), Project coordinator: Prof. Zoubeida April 2015- December 2015

Dagher (University of Delaware, USA). Other researchers in the project team: Prof. Saouma BouJaoude (American University of Beirut), Prof. Sibel Erduran (University of Limerick, Ireland)

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. Researchers in the project team: Prof. Sibel Erduran (University of Oxford, UK), Selin Akgun (Bogazici University), Busra Aksoz (Bogazici University), Aysegul Cilekrenkli (Bogazici University) 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. Researchers in the project team: Selin Akgun (Bogazici University) June 2017-2018

### 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* 2017

*Science (RFN) in Teacher Education*, Adnan Menderes University, Aydin, Turkey, March 9-10.

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| 6. | Workshop entitled “ <i>Argumentation and Nature of Science in Science Teaching</i> ”, National Taitung University, Taitung, Taiwan, July 13-18.                   | 2017 |
| 7. | <i>Re-conceptualizing the Nature of Science</i> , Lorentz Center, Leiden, Netherlands, January 10.  | 2018 |
| 8. | <i>Application of Reconceptualized Family Resemblance Approach to Nature of Science (RFN) in Teacher Education</i> , 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

### 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.

### 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

### 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-

Eurasia Journal of Mathematics, Science, and Technology Education	2014-
International Journal of Science and Mathematics Education	2014-
Kırşehir Eğitim Fakültesi Dergisi	2015-
Cultural Studies of Science Education	2017-

### 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 Scientific Practices and Implications for Teachers’ Professional Development”, Bogazici University, Istanbul, Turkey, June 24. 2014
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”, Dokuz Eylul University, Izmir, Turkey, November 9-10. 2015
11. Workshop entitled “How Can We Teach Nature of Science through a Holistic Approach?”, Bartin University, Bartin, 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, 2017

Turkey, March 9.

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 Approach to Nature of Science (RFN) in Teacher Education”, Yuzuncu Yil University, Van, Turkey, December 1. 2017
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

### 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, TUBİTAK (The Scientific and Technological Research Council of Turkey), Ankara, Turkey. 2017

## Memberships in Scientific Associations

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

## 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 Young Scientist Award 2017

## 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

### 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

### Seminars Organized

1. Seminar on Untangling and Assessing Design Reasoning in Engineering by Prof. Senay Purzer from Purdue University, USA. Bogazici University, Istanbul, Turkey, June 16. 2015

### 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

### Board and Committee Memberships at Bogazici University

1. Board Member (Associate Professors Representative), Faculty Board, Faculty of Education, Bogazici University, Turkey 2015-2018
2. Committee Member, Award Committee, Faculty of Education, Bogaziçi University, Turkey 2015-2018
3. Committee Member, Accreditation and Evaluation Committee, Faculty of Education, Bogazici University, Turkey 2015-
4. Board Member, Research Politics Advisory Board, Bogazici University, Turkey 2016-
5. Committee Member, Human Research Evaluation Board Sub-Committee, Bogazici University, Turkey 2016-

6. Advisor, Education and Research Club (EREC), Bogazici University, Turkey 2016-

### Administrative Duties

1. Associate Head of Department, Department of Mathematics and Science Education, Bogazici University 2016-2018

### Others

Title	Explanation
Experience in Computer Programs	Microsoft Office Programs ITEMAN SPSS (PASW) LISREL
NLP (Neuro Linguistic Programming) Certificate	Middle East Technical University, Continuing Education Center (2005)