

Kemal Akođlu, Ph.D

Curriculum Vitae

Bođaziçi Üniversitesi Kuzey Kampüs Eğitim Fakültesi Ofis:505 Bebek İstanbul

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EDUCATION

- Ph.D. North Carolina State University, Raleigh, NC 2018
Major: Mathematics&Statistics Education
Dissertation Title: Blending Online Coursework and Small Learning Communities to Examine Professional Growth in Teaching Statistics: A Phenomenological Case Study
Advisor: Hollylynnne S. Lee
- M.S. North Carolina State University, Raleigh, NC, 2014
Major: Mathematics Education
Minor: Mathematics
Thesis Title: Research Based Suggestions to Overcome the Cognitive Issues about Teaching and Learning of Conditional Probability
Advisor: Hollylynnne S. Lee
- B.S. Ankara University, Ankara, Turkey 2008
Major: Mathematics

ACADEMIC APPOINTMENTS

- Bođaziçi University** 2020-present
Department of Mathematics and Science Education
Full time faculty
Assistant Professor

North Carolina State University (NCSU), Raleigh, NC, USA

2012-2017

NCSU STEM Education Department

Graduate Teaching & Research Assistant

- Assisted faculty in undergraduate and graduate level course work (EMS 472; EMS 519)
- Supervised several student teachers during their student teaching experience

NCSU Friday Institute for Educational Innovation

Graduate Research Assistant

- Designed and facilitated Massive Online Open Courses for Educators (MOOC-Ed) (2015-2017)
- Researched on the PTMT (Preparing Teaching Mathematics with Technology) project funded by the National Science Foundation (2012-2014; 2015-2016)
- Researched on the GAMES (Gateways to Algebraic Motivation, Engagement and Success) project funded by the National Science Foundation (2014-2015)
- MOOC-Ed projects funded by the National Science Foundation (NSF) and the Hewlett Foundation, the Networked MOOC-Ed project funded by American Statistical Association. (2015-2017)
- Researched on the Networked MOOC-Ed professional learning community project, funded by American Statistical Association (ASA) to support local changes in teaching statistics practices. (2016-2017)

Clemson University, Clemson, SC, USA

2009-2010

Applied Sociology, Graduate Teaching Assistant

- Assisted faculty in undergraduate level course work
- Conducted data analysis for a medical sociology research project.

RESEARCH

PEER-REVIEWED PRESENTATIONS & PUBLICATIONS

Journal Articles

Akar, G. K., Belin, M., Arabacı, N., İmamoğlu, Y., & **Akoğlu, K.** (2025). Teachers' knowledge of different forms of complex numbers through quantitative reasoning. *Mathematical Thinking and Learning*, 27(4), 459-483. (SSCI)

Akar, G. K., Belin, M., Arabacı, N., İmamoğlu, Y., & **Akoğlu, K.** (2025). Teacher's conceptualizations of different meanings of pure imaginary numbers. *Education and Science*, 50(223), 199-222. (SSCI)

- Aksit, O., **Akoglu, K.**, & Aydin, Z. (2025). Investigating Preservice STEM Teachers' AI Literacy and Self-Efficacy Beliefs: Are They Ready for AI?. *Informatics in Education*, 24(4), 653-679. **(SCOPUS)**
- Cayli, S., & **Akoglu, K.** (2025). The Impact of an Undergraduate Course on Teaching Statistics and Probability on Preservice Mathematics Teachers' Statistical Knowledge. *International Journal of Education in Mathematics, Science and Technology*, 13(4), 914-929. **(ESCI)**
- Budak, U. S., & Akoglu, K. (2026). Artificial intelligence (AI) research trends in science education: A critical review of ethical concerns. Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education, 20(1). **(TR Dizin)**
- Kurt, G., & **Akoglu, K.** (2023). Project-based learning in science education: A comprehensive literature review. *Interdisciplinary Journal of Environmental and Science Education*, 19(3), e2311. **(Google Scholar)**
- Karacan, C. G., & **Akoglu, K.** (2021). Educational augmented reality technology for language learning and teaching: A comprehensive review. *Shanlax International Journal of Education*, 9(2), 68-79.
- Batur, A., Özmen, Z. M., Topan, B., **Akoğlu, K.**, & Güven, B. (2021). A cross-national comparison of statistics curricula. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(1), 290-319.
- Gülistan, T. A. Ş., & **Akoğlu, K.** (2020). Sosyal bilgiler öğretiminde işbirlikli öğrenme yaklaşımının etkisi: Meta-sentez çalışması. *Türk Eğitim Bilimleri Dergisi*, 18(2), 956-983.
- Batur, A., Güven, B., & **Akoğlu, K.** (2020). Adapting Middle Grades Self-Efficacy to Teach Statistics Instrument into Turkish. *Turkish Journal of Mathematics Education*, 1(1), 10-30.
- Akoglu, K.**, Lee, H., Kellogg, S. (2019). Participating in a MOOC and a Small Learning Community: How a Blended Approach to Online Learning Makes a Difference. *Journal of Technology and Teacher Education (JTATE)*. 27(2), 129-163.
- Akoglu, K.** (2018). Teaching Statistics through Data Investigations in Gerontology Undergraduate Education. *Journal of Applied Sciences of Mehmet Akif Ersoy University (MAKU)*, 2(2), 28-36.

International Presentations

- Akoğlu, K., & Çaylı, S.** (2023, July). “The Impact of an Undergraduate Course on Teaching Statistics and Probability on Preservice Mathematics Teachers’ Statistical Knowledge”. In *Thirteenth Congress of the European Society for Research in Mathematics Education*
- Karagöz Akar, G., İmamoğlu, Y., Belin, M., Arabacı, N., **Akoğlu, K.** (2023, July). “Knowledge of Different Forms of Complex Numbers through Quantitative Reasoning: The Case of Teachers” In *Thirteenth Congress of the European Society for Research in Mathematics Education*
- Akoğlu, K., & Lee, H.** (2022, February). Supporting teachers' confidence to teach statistics through a blended professional development approach. In *Twelfth Congress of the European Society for Research in Mathematics Education (Proceeding book)*.
- Akoğlu, K., & Lee, H.** (2022, February). Supporting teachers' confidence to teach statistics through a blended professional development approach. In *Twelfth Congress of the European Society for Research in Mathematics Education*.
- Akoglu, K.; Lee, H.** (2019, September 26-28). Blending Online Coursework and Small Learning Communities to Support Professional Growth in Teaching Statistics. *4th International Symposium of Turkish Computer and Mathematics Education (TURCOMAT '19), İzmir*.
- Akoglu, K.; Batur, A.; Topan, B.; Ozmen, Z.M.; Guven, B.** (2019, April 12-14). A Cross-National Comparison of Statistics Curricula. *International Conference on Science, Mathematics, Entrepreneurship and Technology Education (FMGTEK '19), Izmir*.
- Akoglu, K.; Ayyıldız A. T.** (2018). The Role of Symbolic Tools to Overcome Misconceptions about Conditional Probability. *Symposium Book of the 5th International Symposium on Multidisciplinary Studies (ISMS '18), Ankara*.
- Akoglu, K.; Lee, H.** (2017, May 15-18). A Networked MOOC-Ed Project: Examining the Impact of professional Development in Developing the Practices of Teachers of Statistics. *United States Conference on Teaching Statistics (USCOTS '17), Philadelphia, PA, USA*.
- Lee, H., Lovett, J., Casey, S., Hudson, R., Mojica, G., Azmy, C., **Akoglu, K.** (2017, May 15-18). Bringing Data and Tools into Classrooms Through Online Large-Scale Teacher Education. *United States Conference on Teaching Statistics (USCOTS), Philadelphia, PA, USA*.
- Akoglu, K.** (2017, January 4-7). The Role of Technology in Overcoming the Common and Resistant Misconceptions about Probability. *Presentation at Joint Mathematical Meeting (JMM), Atlanta, GA, USA*.
- Akoglu, K.; Evans, M.A.; Huang, L.** (2016, April 8-12). Teachers’ Perceptions of the Relevant Advantages to adopting Learning Games as Instruction-as-Usual. *Presentation at annual meeting of American Educational Research Association (AERA), Washington, DC, USA*.

Akoglu, K. (2016, July 24-31). A Framework to Guide Task Development for Overcoming Cognitive Issues in Learning Conditional Probability. *Presentation at TSG 21: Mathematical applications and modeling in the teaching and learning of mathematics, the 13th International Congress on Mathematical Education (ICME), Hamburg, GERMANY.*

State & Regional Presentations

Akoglu, K. (2016, March 5-6). A Framework about Using Digital Simulation Tools and Task Development to Overcome the Cognitive Issues about Learning of Conditional Probability. *Invited Presentation at the Annual meeting of American Mathematical Society (AMS), Athens, GA, USA.*

Local Academic Presentations

Akoglu, K. (2017, April 7). A MOOC and PLC: Blending Two Professional Development Models to Enhance Teaching Statistics. *Presentation at annual STEM Education Research Symposium of North Carolina State University (NCSU), Raleigh, NC, USA.*

Akoglu, K. (2016, April 22). Teachers' Perceptions of the Relevant Advantages to adopting Learning Games as Instruction-as-Usual. *Presentation at annual STEM Education Research Symposium of North Carolina State University (NCSU), Raleigh, NC, USA.*

Akoglu, K. (2015, March 20). The Role of Learning Games in Enhancing Students' Understanding of Arithmetic Mean and Distribution. *Presentation at annual STEM Education Research Symposium of North Carolina State University (NCSU), Raleigh, NC, USA.*

Akoglu, K. (2014, May 6). Designing Simulation Tasks to Overcome the Cognitive Issues about Conditional Probability. *Presentation at annual STEM Education Research Symposium of North Carolina State University (NCSU), Raleigh, NC, USA*

Akoglu, K. (2013, August 20). Conditional Probability Tasks for High School Students. *Presentation at PTMT Project Summer Institute, NC State University, Raleigh, NC.*

Akoglu, K. (2013, August 20). Engaging Probability Tasks for Teaching Probability in High School. *Presentation at PTMT Project Summer Institute, NC State University, Raleigh, NC.*

RESEARCH EXPERIENCE

TUBITAK-NITRA 2559

(Submitted – Under Review)

Principal Investigator

Project Title: Mathematics and Science Teachers' Readiness for AI-Integrated STEM Education: A Comparative Study Between Turkey and Serbia

Boğaziçi University BAP

2022-2025

Researcher

Project Title: A Professional Development Study Focusing on Quantitative Reasoning: Investigating Inservice Mathematics Teachers' Relationships Among Different Representations of Complex Numbers

Bogazici University

2022-2024

Principal Investigator

PROBABILITY CONCEPT INVENTORY (PCI)

(Start-Up Research project, funded by Bogazici University)

Leading a group of graduate and undergraduate students in implementing workshops for prospective mathematics teachers.

Collecting, analyzing and reporting data.

NC State University, Raleigh, NC, USA

2012-2018

Research Assistant

NETWORKED MOOC-Ed Project, P.I. Hollylynne Lee

Collaborators: Dr. Hollylynne Lee (NC State University)

Recruit professional learning teams (PLTs), include team leaders (from former TSDI MOOC-Ed participants) and team members (from present TSDI MOOC-Ed participants).

Collect data from PLT meeting observations, statistics tasks uploaded by participants, and interviews.

Analyze both quantitative and qualitative data and write up for doctoral dissertation, conferences and journals.

Online Open Courses for Educators (MOOC-Ed) Project funded by Hewlett Foundation, CI. Glenn Kleimann

Collaborators: Drs. Glenn Kleiman, Alan Maloney, Jere Confrey, Hollylynn Lee, Dicky Ng, Nicole Fonger (building on work by Drs. Nicole Panorku and Kosze Lee)

- Design content and facilitate the courses on Statistics.
- Develop tools to support mathematics educators in task related assignment.
- Collect data to document participants' understanding of LTs in a MOOC-Ed.
- Research on the effective design of the MOOC-Ed.

GAMES Project: Developing and Using Learning Games in Middle School Mathematics Classrooms, P.I. Michael A. Evans

Collaborators: Dr. Michael A. Evans (NC State University)

- Adapt and conduct observation and interviews with participant teachers in rural Virginia middle schools.
- Analyze both quantitative and qualitative data and write up for conferences and journals.

Preparing Teaching Mathematics with Technology (PTMT) Project, CI. Hollylynn Lee, Karen Hollebrands, Allison McCulloch

Collaborators: Drs. Hollylynn Lee (NC State University), Karen Hollebrands (NC State University), Allison McCulloch (NC State University)

- Conducted literature review on the role of technology in teaching mathematics (specifically for Statistics and Probability subjects).
- Analyze quantitative data for project publications.

Clemson University, Clemson, SC, USA

2009 – 2010

Research Assistant

- Assisted faculty in a medical sociology research, examining the connections between immunization and neuro-immunological diseases.
- Collected and analyzed data in a departmental project about cross-cultural perceptions about graduate study in the U.S.

TEACHING EXPERIENCE

Bogazici University, Istanbul, TURKEY

The Department of Mathematics and Science Education

Full Time Faculty

2020-present

Courses taught (Undergraduate):

SCED 301: Inferential Statistics

SCED 320: Teaching Methods in Science and Mathematics Education

SCED 330: Teaching Thinking

SCED 354: Teaching Probability and Statistics

SCED 404: Research Methods in Math and Science Education

SCED 432: Practice Teaching in Mathematics

SCED 444: Applied Research Methods in Math and Science Education

SCED 450: Practice Teaching in Mathematics and Science

SCED 470: Computer Assisted Mathematics Education

Courses taught (Graduate):

SCED 540: Improvement of Mental Skills in Mathematics and Science Education

SCED 610: Epistemology in Mathematics and Science Education

Part Time Instructor

2019-2020

- Teaching two sections of an undergraduate level course (SCED 470: Computer Assisted Mathematics Education)
- Teaching an undergraduate level course (SCED 354: Teaching Statistics and Probability)
- Teaching an undergraduate level course (SCED 444: Applied Research in Mathematics and Science Education)
- Supervising senior students in their school experience (SCED 432: Practice in Teaching Mathematics)

Bahcesehir University, Istanbul, TURKEY

The Institution of Educational Studies

Part Time Instructor

2019-2020

- Teaching a PhD level course (ELT 6027: Instructional Technologies for SLE)
- Teaching a PhD level course (EDT 6116: Cognition, Learning & Technology)
- Teaching a PhD level course (EDT 6118: Science, Society and Technology)

- Teaching a master’s level course (EDE 5111: Instructional System Design) MEF University, Istanbul, TURKEY

The Department of Elementary Mathematics Education

Part Time Instructor

2019-present

- Teaching an undergraduate level course (MATH 231: Analytical Geometry)
- Teaching an undergraduate level course (MATH 237: Probability & Statistics)
- Supervising senior students in their school experience (EDS 405: Internship II)
- Teaching an undergraduate level course (EDS 206: Instructional Technology and Material Design)

NC State University, Raleigh, North Carolina, USA

2015-2017

Designer, Facilitator, Teaching Assistant

- Course 1: EMS-ST 519 - Teaching and Learning of Statistical Thinking (Spring 2016-Spring 2017) *Co-design content and co-facilitate the course, building on principles of effective online learning.*
- Course 2: EMS 472 - Teaching Mathematics Topics in Senior High School (Fall 2015) *Assisting faculty in course work.*
- Course 3: TSDI MOOC – Teaching through Data Investigations Massive Online Open Course (Fall 2016) *Co-design content and co-facilitate the course, building on principles of effective professional development and online learning.*

Other Academic/Professional Appointments

Other Appointments

TÜRKİYE MAARİF FOUNDATION

2025-Present

Curriculum developer

Collaborating with other scholars in writing the new mathematics curriculum for Science High Schools in Turkey

TUBITAK

2019-2023

Curriculum developer

Collaborating with other scholars in writing the new mathematics curriculum for Science High Schools in Turkey

Advising TUBITAK Science High school as teacher educator

TUBITAK

2024

National High School Mathematics Project Contest

Jury member

TUBITAK

National Middle School Mathematics Project Contest

Jury Member

2023, 2026

Nesin Mathematics Village, Izmir, Turkey

Summer 2018

Instructor

- Course: Mathematics with Algorithms *Co-designed the course with Dr. Tulay A. Akoglu*

Kucukdalyan Mahmut Yarim Middle School, Antakya, Turkey

2008-2009

Mathematics Teacher

- Designed and taught two courses for middle school students.

PROFESSIONAL SERVICE

SERVICE TO THE INSTITUTIONS

Academic Service

Committee Chair / Thesis Advisor

Selen aylı, 2024, Preservice Mathematics Teachers' Probabilistic Knowledge and Their Attitudes toward Probability and Teaching of Probability, Kemal Akođlu, Bođazii University

Fatma Halenur ztürk Cava, 2024, Examining the Types of Statistical Reasoning of Preservice Mathematics Teachers and their Current Situation to Teach Statistics, Kemal Akođlu, Bođazii University

Fatma Seher Yeni, 2025, The Relationship Between Statistical Anxiety and Self-Efficacy in Teaching Statistics among Preservice Teachers, Kemal Akođlu, Bođazii University

Ayşegül Yoldaş, 2025, The Relationship between Technological Pedagogical Content Knowledge (TPACK) and Individual Innovativeness Characteristics among Inservice Middle School Mathematics Teachers. Kemal Akođlu, Bođazii University

Eda Yırtıcı, 2026, Construction of Risk Literacy Personas of Preservice Mathematics Teachers, Kemal Akođlu, Bođazii University

Workshop/Seminar

- Assisted to organize seminars and workshops to mathematics educators on teacher education preparation for PTMT and GAMES projects. North Carolina State University (2013, 2014)

Mentor/Supervisor

Supervised five student teachers, graduated from North Carolina State University Mathematics Education in Wake County, NC, USA (2015-2016) SERVICE TO THE PROFESSION

Conference Proposal Reviewer

- CERME Conference Proposals (2021, 2023)
- ICME Conference Proposals (2016; 2026)
- NCTM Research Conference Proposals (2016)
- USCOTS Conference Proposals (2017)
- TURCOMAT Symposium Proposals (2019)

Journal Reviewer

Co-Editor

- STEW (Statistics Education Web) – American Statistical Association (ASA) (2015-2018)

Reviewer/Referee

- JSDSE (Journal of Data Science and Statistics Education) (2023-Present)
- JSE (Journal of Statistics Education) (2018 - 2023)
- PAU (Pamukkale Üniversitesi Eğitim Fakültesi Dergisi) (2020)

SERVICE TO THE COMMUNITY

- Editorial Member and Writer (2005-2013), Kalem Literature and Art Magazine, Ankara
- Playwright (2012), 7th Summer Theatre Festival, Antakya
- Voluntary Staff (2010), YMCA Day of Action, Reconstructing Childcare Center, Clemson, SC
- Voluntary Story Reader (2009), 2nd Antakya Literature Days, Antakya
- Voluntary Staff (2005), 9th Movies on Wheels European Movie Festival, Ankara

SCHOLARSHIPS, AWARDS, and HONORS

Awards and Honors

- Clemson University Graduate Student Support Plan Award (2009-2010)
- The Republic of Turkey Prime Ministry Higher Education Scholarship (2002-2006)
- Ugur Mumcu Arastirmaci Gazetecilik (UMAG) Creative Writing Seminar Attendance Scholarship (2002-2004)
- Cagdas Yasami Destekleme Dernegi (CYDD) Higher Education Scholarship (2002-2005)

Travel Grants

- NC State University Graduate Student Travel Stipend for USCOTS (2016) (\$ 1500)
- NC State University Graduate Student Travel Stipend for AMS Conference (2016) (\$ 1000)
- NC State University Graduate Student Travel Stipend for JMM Meeting (2016) (\$ 1000)
- William&Ida Friday Institute for Educational Innovation Travel Stipend (2016,\$1000)

ORGANIZATIONAL MEMBERSHIPS

- Psychology of Mathematics Education (PME)
- American Educational Research Association (AERA)
- American Psychological Association (APA)
- Society for Industrial and Applied Mathematics (SIAM)
- National Council of Mathematics Teachers USA (NCTM)

LANGUAGES

- Turkish – Native
- English – Fluent
- Arabic – Intermediate
- French – Pre Intermediate

