NURSAH YAKUT

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EDUCATION

Purdue University, US *August 2022 – Expected May 2027*
Ph.D., Learning Design and Technology *3.94/4.00*
Graduate Certificates:
AI in Education
Quantitative Research, Assessment and Evaluation in Education
Advisors: Dr. Marisa Exter and Dr. William Watson

Gazi University, Turkey *September 2019 – August 2022*
M.Sc., Educational Measurement and Evaluation *3.89/4.00*
Thesis: Comparison of Classification Accuracy Indices within the Scope of Item Response Theory
Advisor: Dr. Emine Onen

Balikesir University, Turkey *September 2015 – May 2019*
B.Sc., Mathematics Education *3.48/4.00*

RESEARCH AND APPLIED EXPERIENCE

Educating Character Initiative (ECI), Purdue University, US *2024 – Present*
Graduate Research Assistant and Instructional Designer

- Contribute to the Wake Forest-funded Institutional Impact Grant project, Integrating Character Development in Engineering and Computing Undergraduate Courses, across multiple institutions.
- Lead faculty design consultations and coordinate collaborative research activities across participating institutions, aligning instructional goals, course activities, and assessments.
- Independently designed and developed three interactive, branching case studies—*NDA Ethical Dilemma*, *Eco vs. Economy: The NovaTech Decision*, and *Respect for Others*—including complete scripts, decision pathways, interactive activities, and feedback. Published all three with accompanying scripts as adaptable Open Educational Resources (OER) on the OER repository.
- Lead a design-based research study examining two of these cases in senior-level engineering technology capstone courses, including research design, classroom implementation, pre/post assessments, iterative revisions informed by student feedback, data analysis, and manuscript preparation.
- Lead a qualitative study of students' reflections on a non-disclosure dilemma, including research design, coding and analysis of character-related reasoning and professional judgment, and manuscript preparation.
- Develop a construct-driven situational judgment test assessing responsibility, meticulousness, and open-mindedness across AI-mediated engineering and computing contexts, with scenarios designed for adaptability across instructional settings; coordinate ongoing expert review, with cognitive interviews and pilot testing planned.

- Design and iteratively refine character-education resources, including short instructional videos, worksheets, peer-mentoring activities, and faculty-facing materials informed by faculty feedback and classroom needs.
- Facilitate student-facing professional development and peer-mentoring sessions on character education, effective peer feedback, and the application of character traits in professional contexts.
- Analyze expert feedback and consensus results for a cross-institutional Delphi study developing attitudinal character indicators for humility, compassion, and courage; contribute to manuscript review and revision.

DEAP Project, Purdue University, US *2022 – 2024*
Graduate Research Assistant

- Contributed to DEAPening Employer-Academic Partnerships (DEAP), a $3 million NSF-funded, multi-institutional project examining competencies, dispositions, and cross-disciplinary skills valued in computing education and the computing workforce.
- Designed and refined survey instruments for computing faculty and professionals; built and administered surveys in Qualtrics.
- Conducted pilot testing and think-aloud sessions to examine item clarity and response processes and used findings to refine survey instruments.
- Authored a case-based learning Open Educational Resource for computing educators, covering pedagogical foundations, case design, instructional activities, assessment approaches, and classroom examples across different undergraduate levels.
- Conducted all data cleaning and quantitative analyses in R for a study comparing faculty and professional perspectives on dispositions and cross-disciplinary skills.
- Drafted the Methods and Results sections of the comparative study manuscript; continue collaborating on interpretation, manuscript revision, and dissemination following completion of the funded project.

The Wabi Center for Youth Development, Westside Robotics, US *2026*
Instructional Design Intern

- Conduct needs assessments through interviews and program observations to identify mentor-development needs, effective practices, and knowledge gaps.
- Design inclusive training modules and research-informed resources for FIRST Robotics mentors, addressing neurodiverse learners, equitable team practices, communication, and behavioral support.
- Collaborate with organizational leadership to structure professional development experiences for volunteer mentors.
- Support evaluation planning to examine the implementation and effectiveness of mentor-training initiatives.

Office of Undergraduate Research (OUR), Purdue University, US *2023 – 2024*
Graduate Research Assistant

- Contributed to research and program development on competency-based undergraduate research experiences and learning contracts to strengthen mentor–mentee relationships.
- Led qualitative coding and analysis with undergraduate research interns, identifying themes to inform program development and improvement.
- Mentored undergraduate researchers in research methods, data analysis, and scholarly development.

PEER REVIEWED PUBLICATIONS

Exter, M., **Yakut, N.**, Tagare, D., & Sabin, M. (2025). WIP: How do computing professionals and faculty rank the importance of dispositions and cross-disciplinary skills? *2025 IEEE Frontiers in Education Conference (FIE)*, 1–5. https://doi.org/10.1109/fie63693.2025.11328210

Yakut, N. (2025). Work-in-progress: Systematic review of competency assessment methods in computing education. *Proceedings of the 56th ACM Technical Symposium on Computer Science Education*, 1764. https://doi.org/10.1145/3641555.3705060

Yakut, N. & Önen, E. (2025). Comparison of classification accuracy and consistency indices under the item response theory. *International Journal of Educational Studies and Policy, 6*(1), 90–105. https://doi.org/10.5281/zenodo.15075438

Exter, M., **Yakut, N.**, Sabin, M., Tagare, D., & Ashby, I. (2024). Work in progress: Importance of dispositions on the job: Survey of computing professionals. *2024 IEEE Frontiers in Education Conference (FIE)*, 1–5. https://doi.org/10.1109/fie61694.2024.10893432

MANUSCRIPTS UNDER REVIEW AND IN PREPARATION

Yakut, N., Duan, S., & Exter, M. (Under review). A systematic literature review of disposition assessment methods in higher education.

Yakut, N., Exter, M., & Berry, F. C. (In preparation). Designing and evaluating interactive case studies in engineering capstone courses: A design-based research study.

Yakut, N., Tavakoli, J., Exter, M., & Berry, F. C. (In preparation). Beyond the right answer: Considerations and character education in engineering technology students' reasoning about a non-disclosure dilemma.

Yakut, N., Exter, M., & Berry, F. C. (In preparation). Developing a situational judgment test to assess professional dispositions in AI-mediated computing contexts.

Yakut, N., Duan, S., & Exter, M. (In preparation). A systematic literature review of research instruments for disposition assessment in higher education.

Yakut, N., Aktan, S., & Watson, W. R. (In preparation). Ready to use, unprepared to evaluate: The AI literacy gap in teacher preparation.

Exter, M., Ashby, I., **Yakut, N.**, Frezza, S., & Ritzhaupt, A. (In preparation). From what to why: Developing attitudinal character indicators through a Delphi approach.

Exter, M., **Yakut, N.**, Tagare, D., & Sabin, M. (In preparation). How do computing professionals and faculty rank the importance of dispositions and cross-disciplinary skills?

Kotangale, A., **Yakut, N.**, & Exter, M. (In preparation). Understanding the design thinking mindset among adolescents in grades 7–12.

Kotangale, A., **Yakut, N.**, & Exter, M. (In preparation). Developing design thinking dispositions and skills in high school students: A two-week intervention.

Roodi, F., **Yakut, N.**, & Watson, W. R. (In preparation). Beyond adoption: How computing students trust, verify, and regulate their use of generative AI.

ADDITIONAL RESEARCH PROJECTS

Systematic Reviews of Disposition Assessment. Led methodological planning and screening for two systematic reviews examining disposition assessment methods and research instruments in higher education. Led evidence synthesis and manuscript preparation for the first review, currently under review; lead manuscript preparation for the second.

AI Literacy and Pre-Service Teacher Preparation. Lead a study of pre-service teachers' engagement with AI tools. Developed the research questions, survey, interview questions, and coding framework; conducted interviews and lead ongoing quantitative/qualitative analysis and manuscript preparation.

Adolescent Design Thinking. Supported data collection and conducted all analyses for two studies of adolescents' design thinking mindsets and skills, including pre/post analysis of a two-week intervention. Contribute to both manuscripts.

Generative AI Use in Computing Education. Contributed to research design and data collection; collaborated with the first author on quantitative analyses in R and qualitative coding examining students' trust, verification, and regulation of generative AI use. Contribute to manuscript writing and revision.

GRANT PROPOSAL DEVELOPMENT

NSF Improving Undergraduate STEM Education (IUSE) Proposal *2026*
Proposal Contributor – $2 Million

- Contributed to the development of a multi-institutional proposal focused on the development and validation of rigorous assessment tools for student dispositions in computing and engineering education.
- Contributed substantially to the assessment-focused literature review and participated in proposal-development and brainstorming meetings.
- Reviewed the proposal narrative and supported the accuracy and consistency of citations, references, and supporting research literature.

NSF RITEL Proposal *2024*
Proposal Contributor – $250,000

- Conducted a literature review to support the research foundation of an NSF RITEL proposal on AI-assisted personalized education.

TEACHING EXPERIENCE

Purdue University, US *Fall 2026*
Guest Lecturer – EDPS 630: Research Procedures in Education

- Designed and facilitated a lecture on systematic literature review methodology, including a hands-on screening activity focused on eligibility criteria, methodological decision-making, and reviewer consistency.

Purdue University, US *Spring 2026*
Co-Instructor – Educational Applications of Multimedia

- Co-taught an online graduate-level course focused on the design and use of multimedia for teaching and learning.
- Redesigned course assignments to improve alignment among learning outcomes, instructional activities, and assessment.
- Reviewed and revised course materials to support accessibility and usability, including alignment with WCAG principles.
- Led an instructional session on "Designing Interactive Learning with H5P," covering interactive content development, LMS integration, accessibility, and UDL principles.
- Provided formative feedback on student work, managed grading, and facilitated online discussions.

Purdue University, US *Spring 2025*
Co-Instructor – Educational Video Game Design

- Co-taught an online course focused on the design and development of educational games.
- Provided detailed formative feedback on student projects and supported assessment and grading.
- Facilitated online discussions and supported course administration and student learning.

Fatih Middle School, Turkey *Spring 2019*
Trainee Teacher

- Supported mathematics instruction and students' academic and social development in middle-school classrooms.

General Kemal Balikesir Middle School, Turkey *Fall 2018*
Trainee Teacher

- Assisted with mathematics instruction and classroom support under the supervision of the lead teacher.

Private Mathematics Tutoring, Turkey *2016 – 2019*
Mathematics Tutor

- Provided individualized mathematics instruction tailored to students' learning needs and academic goals.

CONFERENCE PRESENTATIONS

Yakut, N., Exter, M., & Berry, F. C. (2026). *Designing and evaluating interactive case studies in engineering capstone courses: A design-based research study* [Accepted for Concurrent Session]. Association for Educational Communications and Technology Annual Meeting (AECT), Chicago, IL, United States.

Kotangale, A., **Yakut, N.**, & Exter, M. (2026). *Understanding the design thinking mindset among adolescents in grades 7–12* [Accepted for Roundtable Session]. Association for Educational Communications and Technology Annual Meeting (AECT), Chicago, IL, United States.

Kotangale, A., **Yakut, N.**, & Exter, M. (2026). *Developing design thinking dispositions and skills in high school students: A two-week intervention* [Accepted for Concurrent Session]. Association for Educational Communications and Technology Annual Meeting (AECT), Chicago, IL, United States.

Roodi, F., **Yakut, N.**, & Watson, W. R. (2026). *GenAI use in computer science: Insider perspectives to inform practice* [Poster Presentation]. American Educational Research Association Annual Meeting (AERA), Los Angeles, CA, United States.

Yakut, N., Roodi, F. (2025). *Empowering teachers with AI: Practical tools for creative and inclusive lesson planning* [Oral Presentation]. Purdue AI in P-12 Education Conference, West Lafayette, IN, United States.

Yakut, N., Yilmaz Yenioglu, B., Yenioglu, S., & Aktan, S. (2025). *Examining pre-service teachers' engagement with AI tools: Patterns, perceptions, and ethical considerations* [Concurrent Session]. Association for Educational Communications and Technology Annual Meeting (AECT), Las Vegas, NV, United States.

Yenioglu, S., Yilmaz Yenioglu, B., & **Yakut, N.** (2025). *AI-Driven interventions for students with learning disabilities: A future perspective* [Presidential Session]. Association for Educational Communications and Technology Annual Meeting (AECT), Las Vegas, NV, United States.

Yakut, N. (2025). *Systematic review of disposition assessment methods in higher education* [Roundtable Presentation]. American Educational Research Association Annual Meeting (AERA), Denver, CO, United States.

Yakut, N. (2025). *Work-in-Progress: systematic review of competency assessment methods in computing education* [Student Research Competition]. The Technical Symposium on Computer Science Education (SIGCSE TS), Pittsburgh, PA, United States.

Yakut, N. & Zywicki, C. (2024). *Agreements, contracts, or compacts: Uncovering the expected learning in mentor-mentee relationships* [Live Oral Presentation]. ConnectUR 2024 Annual Conference, virtual.

Yakut, N. & Childress, A. (2024). *Bridging theory and practice: Enhancing career readiness through undergraduate research* [Share and Solve]. ConnectUR 2024 Annual Conference, virtual.

Yakut, N. (2023). *The effects of intelligent tutoring systems on students' motivation in mathematics education: A systematic literature review* [Poster Presentation]. Annual Graduate Student Education Research Symposium (AGSERS), West Lafayette, IN, United States.

Yakut, N. & Onen, E. (2022). *The comparison of classification accuracy indices within the scope of item response theory* [Paper Presentation]. International Young Researchers Congress-II (GUGAK-2022), virtual.

SELECTED PROFESSIONAL DEVELOPMENT

Google Project Management Certificate (In progress).

Applying the Quality Matters Rubric (APPQMR), 7th Edition, Quality Matters, 2025.

Unlock the Power of Obsidian and Zotero for Research, Purdue University, 2023.

SCHOLARSHIPS, AWARDS AND TRAVEL FUNDING

MEB 1416/YLSY Overseas Graduate Scholarship, Ministry of National Education, Republic of Türkiye (fully funded doctoral scholarship)

Graduate Student Hackney Travel Award ($500), College of Education, Purdue University

Graduate Student Conference Support Award ($750), College of Education, Purdue University

Graduate Student Travel Award ($250), Learning Design and Technology, Purdue University

SIGCSE TS Travel Grant ($500), ACM Technical Symposium on Computer Science Education

LEADERSHIP, SERVICE, AND COMMUNITY ENGAGEMENT

Reviewer, American Educational Research Association (AERA) Annual Meeting, 2026, 2027

Reviewer, Association for Educational Communications and Technology (AECT) Annual Meeting, 2026

Judge, FIRST Indiana Robotics Competition, 2025

Judge, Purdue Undergraduate Research Expo, 2024–2025

Treasurer, Purdue Association of Learning Design and Technology (PALDT), 2023–2024

Volunteer, Imagination Station, 2022–2024

PROFESSIONAL MEMBERSHIPS

Association for Educational Communications and Technology (AECT)

American Educational Research Association (AERA)

Association for Computing Machinery (ACM)

ACM Special Interest Group on Computer Science Education (SIGCSE)

RESEARCH AND TECHNICAL SKILLS

Measurement and Psychometrics: Survey and instrument development, situational judgment tests, item response theory, classification accuracy and consistency, rubric design, think-aloud protocols.

Research Methods: Mixed-methods research, design-based research, systematic literature reviews, meta-analysis, Delphi studies.

Data Analysis: Statistical simulation in R, quantitative analysis, pre/post analysis, meta-regression, qualitative coding and thematic analysis.

Learning Design and Evaluation: Learning experience design, needs assessment, case-based learning, curriculum and assessment alignment, formative evaluation, WCAG-informed design.

Software: R, SPSS, JASP, NVivo, Dedoose, Qualtrics, Covidence, H5P, Articulate, Camtasia, Figma, Mural.