DEEPTI TAGARE

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EDUCATION

PhD	Purdue University, West Lafayette, IN, USA Department: Curriculum and Instruction Specialization: Learning Design and Technology Advisor: Dr. William Watson	2019 – Ongoing Expected date of completion: May 2024
MA	Oxford Brookes University, Oxford, UK Specialization: Publishing Dissertation: Need For Standardization in Offshored Publishing Services (Business Report)	Dec 2013
BE	Cummins College of Engineering, Pune University, India Specialization: Electronics and Telecommunication Engineering	May 2011

RESEARCH

PUBLISHED RESEARCH PAPERS

Note: In Computing Education research community, peer reviewed conference proceedings (which are full research papers) are valued, read, and cited more than journal publications. Thus, some of my computing education research was published in conference proceedings such as SIGITE, ICER, FIE, etc.

- Lowell, V., & **Tagare, D.** (2023). Authentic Learning and Fidelity in Virtual Reality Learning Experiences for Self-Efficacy and Transfer. *Computers & Education: X Reality*, *2*, 1-15. https://doi.org/10.1016/j.cexr.2023.100017
- Duan, S., Exter, M., **Tagare, D.**, Sabin, M, Janakiraman, S. (2023). Essential Competencies for Computing Managers: Skills and Dispositions. *Education and Information Technologies*. https://doi.org/10.1007/s10639-023-11869-4
- **Tagare, D.** (2024). Factors That Predict K-12 Teachers' Ability to Apply Computational Thinking Skills. *Transactions on Computing Education*, *24*(1), 1-26. https://doi.org/10.1145/3633205
- **Tagare, D.**, Janakiraman, S., Exter, M., Duan, S., Sabin, M., & Tavakoli, J. (2023). Dispositions that Computing Professionals Value in the Workplace: Systematic Literature Review and Interviews with Professionals. In *Proceedings of the ACM Conference on International Computing Education Research (ICER '23)*. Association for Computing Machinery, Chicago, IL, USA. https://doi.org/10.1145/3568813.3600118

- **Tagare, D.**, Tavakoli, J., Exter, M., Sabin, M., & Frezza, S. (2023). Beyond the Cognitive: Educator Readiness for Fostering Dispositions. In *Proceedings Frontiers in Education Conference*. College Station, Texas: Institute of Electrical and Electronics Engineers, October, 2023. [10.1109/FIE58773.2023.10343241](10.1109/FIE58773.2023.10343241)
- Duan, S., Exter, M., **Tagare, D.**, Sabin, M. (Sept, 2022). Managerial and Professional Skills and Dispositions from Professionals' Interviews. In *Proceedings of the 23rd Annual Conference on Information Technology Education (SIGITE '22)*. Association for Computing Machinery, New York, NY, USA, 1–8. https://doi.org/10.1145/3537674.3554751

PEER-REVIEWED JOURNAL PUBLICATIONS UNDER REVIEW/ DEVELOPMENT

- **Tagare, D.,** & Watson, W. (Under Review). Gamifying Computational Thinking Skills with a Community of Practice of Teachers. *International Journal of Designs for Learning*, n.d., n.d.
- Richardson, J., Koehler, A., **Tagare, D.**, Urena-Rodriguez, L., Xu, Q., Zhang, Z., Fiock, H., Long, Y., & Duha, M.S.U. (Under Review). Community of Inquiry Design Decisions across Disciplines. *Journal of Computing in Higher Education*.
- **Tagare, D.** (Under Development). Teachers' Perspectives on Computational Thinking Skills: A phenomenological multi-case study.

PUBLISHED / UNDER REVIEW BOOK CHAPTERS - PEER REVIEWED

- **Tagare, D.**, Exter, M.E., Ashby, I. (2023). The Many Hats – Accidental Roles on an Interdisciplinary Research and Implementation Project: A Collaborative Autoethnography. In: Hokanson, B., Schmidt, M., Exter, M.E., Tawfik, A.A., Earnshaw, Y. (Eds), *Formative Design in Learning. Educational Communications and Technology: Issues and Innovations*. Springer, Cham. https://doi.org/10.1007/978-3-031-41950-8_21
- Watson, W. R., Watson, S. L., **Tagare, D.,** Baydar, S., & Hsieh, C. (Under review). Online Learning. In T. Louis, & B. M. McCuskey (Eds.), *Oxford Handbook of Wellbeing in Higher Education*. Oxford University Press.

PUBLICATIONS - NON-PEER REVIEWED/NON-ACADEMIC

- **Tagare, D.** (2018, March, 20). Data aids enhanced learning processes and outcomes. Business World Education. Retrieved from http://bweducation.businessworld.in/article/Data-Aids-Enhanced-Learning-Processes-and-Outcomes/20-03-2018-143954/

CONFERENCE PRESENTATIONS

- McGraw Hill Education India, **Tagare D.** (2017, December). *Data Aids Enhanced Learning Processes and Outcomes*. Workshop conducted at UNESCO MGEIP's TECH 2017 conference, Visakhapatnam, AP, India.
- **Tagare, D.** (2021). *Assessing In-service K-12 Teachers' Computational Thinking Skills in India*. AERA Graduate Student In-Progress Research Gala, 2021.
- **Tagare, D.** (2021). *K-12 Teachers' Competency in Performing Computational Thinking Skills: Does Professional Development Help?* Northeastern Educational Research Association, 2021.

- Lowell, V. L., & **Tagare, D.** (2022). *Designed Fidelity of a Virtual-Reality Learning Environment: Impact on Learners*. American Educational Research Association, 2022.
- Lowell, V. L., & **Tagare, D.** (2022). *Designing Virtual-Reality Learning Experiences for Authentic Learning and Fidelity and Learner Self-Efficacy and Learning Transfer*. American Educational Research Association, 2022.
- **Tagare, D.**, Exter, M., & Ashby, I. (2022). *Emergent Formative Roles in an Interdisciplinary, Multi-institutional Research Project: A Collaborative Autoethnography*. AECT Summer Research Symposium, 2022.
- Duan, S., Exter, M., **Tagare, D.**, Sabin, M. (2022). *Managerial and Professional Skills and Dispositions from Professionals' Interviews*. ACM-Special Interest Group on Information Technology Education (SIGITE), 2022.
- **Tagare, D.** (2022). *Use of Gamification and Reflection in Teacher Training for Computational Thinking: A Design Case*. Association of Educadional Communications and Technology (AECT), 2022.
- Janakiraman, S., Exter, M., Sabin, M., Duan, S., **Tagare, D.** (2022). *Exploring the competencies required by computing professionals in the workplace: A systematic literature review*. Association of Educational Communications and Technology (AECT), 2022.
- Richardson, J., Koehler, A., **Tagare, D.**, Urena, L., Xu, Q., Zhang, Z., Fiock, H., Long, Y., Duha, M. S. (2023). *Examining Online Course Design Decisions across Disciplines Using the Community of Inquiry Lens*. American Educational Research Association, 2023.
- **Tagare, D.** (2023). *Teachers' Perspectives on Computational Thinking Skills: A Phenomenological Study*. American Educational Research Association, 2023.
- Kotangale, A., **Tagare, D.**, & Exter, M. (2023, October, 15-19). *Computing Professionals' Problem-solving Approaches Seen Through a Design Thinking Lens*. 2023 Association for Educational Communications and Technology International Convention. Orlando, FL, United States.
- Tavakoli, J., Kotangale, A., Exter, M., **Tagare, D.**, & Sabin, M. (2023, October, 15-19). *Dispositions in Computing and Implications for Instructional Design Education*. 2023 Association for Educational Communications and Technology International Convention. Orlando, FL, United States
- Exter, M., & **Tagare, D.** (2023, Oct, 15-19). *Developing a Competency-Based Curriculum that Purposefully Integrates Cross-Disciplinary Skills and Disposition* [Workshop]. Association for Educational Communications and Technology 2023 International Convention. Orlando, FL, United States.
- Exter, M., **Tagare**, D., & Sabin, M. (2024). Develop a Competency-based Curriculum that Purposefully Integrates Computing Skills, Cross-Disciplinary Skills, and Dispositions [Workshop]. 55th ACM Technical Symposium on Computer Science Education, 2024. Portland, Oregon.

RESEARCH PROJECTS IN PROGRESS

Graduate Research Assistant, NSF Grant Project (Aug 2021 – Ongoing)
Work as a Research Assistant in a multi-disciplinary, multi-institutional NSF Grant Project titled '*Collaborative Research: Data-Driven Employer-Academia Partnership ([DEAP](#)) for Continual Computing Curricular Change.*' This is a $3 million 3-year grant project that investigates the

competencies required by computing professionals to inform four-year computing degree programs for effective change. This project involves computing and educational research faculty members from 8 Universities. I have been working as a research assistant with Purdue's Competency Research Team and am involved in several smaller projects within this large 3-year grant project. Following is a list of my research work with this team:

- Drafted the interview protocol, conducted pilot interviews, followed by 30+ interviews with computing industry professionals. Inductively coded interviews using the constant comparative method to create a list of competencies required in the computing industry.
- Collaborated on a systematic literature review led by the post-doctoral researcher on the team, to identify another list of competencies required in the computing industry.
- Merged the two lists of competencies.
- **Ongoing**: Working on a national level survey for a larger number of computing industry professionals to identify gaps between industry and academia. The survey will have the participants rate the level of importance of each knowledge, skill, and disposition (competencies) on the competency list to have a successful career in the computing industry. The survey will also have the participants report the degree to which these competencies were emphasized in their undergraduate degree programs.
- **Ongoing**: Working with faculty at Tuskegee University to implement a pilot course redesign that involves integration of cross-disciplinary skills and dispositions in the introductory computer science courses. This will include evaluation of the new pedagogical and assessment techniques through collection of student data using various data sources.

Beyond the Cognitive - Educator Readiness for Change (Spring 2023 – Ongoing)
I am leading a multiple case study of a diverse sample of computing and engineering faculty that investigates their readiness to integrate dispositions in their respective courses/program through the lens of the Agency Influence Framework that focuses on educators' worldview, beliefs, motivations, and abilities.

Teachers' Perspectives on Computational Thinking Skills (Summer 2022 – Ongoing)
A phenomenological multi-case study: The purpose of this solo research study is to understand the lived experience of teachers receiving professional development training on CT. It explores teachers' perceived value of CT to their respective subject-specific teaching after the professional development training.

Community of Inquiry Design Decisions Across Disciplines (Spring 2022 – Ongoing)
This is a large team project led by Dr. Jennifer Richardson at Purdue University. It is a multiple case-study that examines the design decisions made by instructional designers and instructors across disciplines in an online instructional environment through the lens of the community of inquiry framework.

AWARDS AND RECOGNITIONS
- AERA Online Teaching and Learning SIG Best Paper, 2023 for the paper titled *Examining Online Course Design Decisions across Disciplines Using the Community of Inquiry Lens*
- National level award in paper presentation on 'Acoustics and Vibrations' in 2009 at MIT College of Engineering, Pune, India.

- 2nd Runners up in a national level paper presentation on 'Electronic Solutions to Hearing Impaired' in 2010 at MIT college of Engineering, Pune, India.

GRANTS

- Making Connections, Building Community: Engagement and Advocacy for Diversity, Equity, and Inclusion, 2023; by the **Diversity Fellowship** at Purdue University awarded **$1500** for a **service project** involving two non-profit organizations in the local community in Tippecanoe County, Indiana. This grant was awarded to **Deepti Tagare**, Anthony Ilobinso, and Chi-Jia Hsieh under the guidance of Dr. William Watson (PI).
- Understanding and Promoting Educator Readiness for Integration of Dispositions in Computing and Engineering Programs, 2024; A **Small Research Grant** by College of Education, Purdue University awarded **$5000** for a research project involving design and implementation of an online professional development workshop on competency-based education for engineering and computing faculty followed by data collection to further research in this domain. This grant was awarded to **Deepti Tagare** under the guidance of Dr. Marisa Exter (PI).

TEACHING AND MENTORING

INSTRUCTOR (Fall 2024) - Digital Storytelling and Learning
A graduate level synchronous online course in the Learning Design and Technology program that explores narrative strategies, digital technologies, and educational approaches, to provide a deeper understanding of the power of digital storytelling as an instructional tool. It focuses on theories, techniques, and methods to successfully integrate digital storytelling in a variety of educational settings. Students develop their own digital short stories as part of this course.

CO-INSTRUCTOR (Fall 2024) - Developing AI tools for K-12 Education
An interdisciplinary face-to-face course in the Computer Science department open to all undergraduate and graduate level students. This course focuses on providing a first-hand experience at designing, developing, and evaluating a software product that introduces K-12 students to ideas and concepts in Artificial Intelligence. It introduces students to the Five Big Ideas in AI for K-12 and encourages a collaborative team effort to develop educational software to teach AI concepts in K-12 settings.

CO-INSTRUCTOR (Fall 2022 and Fall 2023)

Co-teaching a graduate level hybrid course (partially online and partially face-to-face) - EDCI 591-Publishing Research in Learning Design and Technology. This course focuses on preparing Ph.D. students for writing empirical research papers for the purpose of publishing. The co-teaching involves:

- Planning for face-to-face class topics
- Developing instructional material and activities for class
- Leading class facilitation
- Providing feedback on students' written research papers – assignments

TEACHER PROFESSIONAL DEVELOPMENT (Fall 2020 – Spring 2022)

Planned, designed, and facilitated four gamified synchronous online teacher trainings to address the below-listed learning needs of K-12 teachers from 15 schools in India. Across the 4 trainings, I have trained approximately 90 teachers. Details of the teacher training design can be found in [The Training Center](#).

- Conceptual understanding and practice in computational thinking (CT) skills
- Technological and pedagogical knowledge
- Self-evaluation and Peer evaluation of CT instructional content development for their classroom teaching
- Tips and tricks for Classroom Implementation of CT

MENTORING GRADUATE STUDENTS (Fall 2022 – Ongoing)

Mentoring junior Ph.D. students in research skills which involves:

- Providing guidance on literature review techniques
- Modelling data analysis techniques
- Advising on writing conference proposals
- Observing and noting learning needs and struggles of each student
- Providing feedback on work done and giving additional learning resources for reference

INVITED PRESENTATIONS / SEMINARS

- Community and Diversity Engagement Summit (April, 2023) - Reframing Community Engagement Through the Lens of Diversity, Equity, & Inclusion: A Critical Dialogue at the Arts Federation, Lafayette, Indiana. Presenters: **Deepti Tagare**, Anthony Ilobinso, and Chi-Jia Hsieh. Topic of Presentation: *Promoting Awareness of Environmental Sustainability Among Students in After-school programmes through Augmented Reality-based Activities*.
- We are Purdue - Mentor & Induction Seminar (May, 2023) in the *Boiler the Tech Up* session for teacher candidates and in-service teachers of Special Education. Presenter: **Deepti Tagare**. Topic of Seminar: Augmented Reality: Using AR Makr in the Classroom.
- Research seminar at Purdue University arranged by Dr. James P. Greenan (December 3rd, 2021) sponsored by Career and Technical Education. Presenters: Dr. Victoria Lowell and **Deepti Tagare**. Topic of presentation: *Authentic Learning and Fidelity in Virtual Reality Learning Experiences for Self-Efficacy and Transfer.*
- Gifted Education Research and Resource Institute at Purdue - Summer Camp for elementary school students (July, 2021). Guest Teacher: **Deepti Tagare.** Topic of Session: *Game based collaborative storytelling experience*.

INSTRUCTIONAL DESIGN EXPERIENCE

NSF GRANT PROJECT (Collaborative Research: Data-Driven Employer-Academia Partnership (DEAP) for Continual Computing Curricular Change) (FALL 2021 - Ongoing)

1. *Created theory-informed instructional material on competency-based education and pedagogical and assessment techniques suitable for competency-based education for computing faculty. This material is being uploaded to the DEAP project website for open access use.*
   a. [Introduction to Competency Based Education](#)
   b. [DEAP Competency Model](#)
   c. [DEAP Cross Disciplinary Skills](#)
   d. [DEAP Dispositions](#)
2. Provided instructional design consultation to computing faculty at University of Alabama and Tuskegee University to help them implement a pilot redesign of their courses.
   a. Designed instructional activities that integrate dispositions and cross-disciplinary skills in introductory computer science courses.
   b. Designed assessment rubrics for the new activities to assess the cross-disciplinary skills and dispositions.

INTERNSHIP AT PURDUE AIRPORT (SUMMER 2021)

Single-handedly converted a Flight Instructor Standardization training module from face-to-face to a fully online module. The [Design Document](#) summarizes the project. Online learning experiences included:
1. Created instructional content
   - Videos
     - [Taxi Procedures and Winter Operations](#) (using Google Earth)
     - [Training in Fleet Aircraft](#)
   - PPTs
2. [Instructor's Job Aid](#)
3. Created gamified formative assessments
   - [Inklewriter](#) – Complete your practice area transition routes
   - [Escape Room](#) - To simulate emergency operations at Purdue Airport
4. Created Brightspace based summative assessments
5. Conducted formative evaluation of the designed training module and incorporated changes based on feedback as required.

INSTRUCTIONAL DESIGNER (SUMMER 2020)

Designed and developed two courses for the department of Educational Studies at Purdue University – EDPS 556 and EDPS 557. This involved:

1. Moving the courses from one learning management system (Blackboard) to another (Brightspace).
2. Designing course layout and structure.
3. Providing help and guidance in the development of weekly learning objectives and align assignments to the objectives.
4. Developing discussion boards customized to different groups/cohorts of students
5. Developing grading structure within Brightspace

6. Creating step-by-step guides/ job aids for instructors to carry out specific functions/actions in Brightspace

TECHNOLOGY AND TOOLS

- *Programming Languages*: HTML, CSS, PHP, C, Assembly
- *Software tools*: Adobe InDesign, Photoshop, Articulate 360, Storyline 360, Camtasia, Notepad++
- *Data Analysis tools*:
  - o **Quantitative data analysis**: SAS, R, SPSS, Excel (Pivot tables, Vlookup, Histograms and Regression Analysis, Macros)
  - o **Qualitative data analysis**: Dedoose, Nvivo

INTERNATIONAL WORK EXPERIENCE (2012 – 2019)

Designation	Company / Organization	Date
Associate Publishing Manager	Cambridge University Press, Delhi, India	Dec 2018 – June 2019
Product Developer – Senior Product Developer	McGraw Hill Education, Delhi, India	May 2016 – Oct 2018
Assistant Development Editor	Oxford University Press, Delhi, India	Sept 2014 – May 2016
Copyeditor	Crest Pre-media Solutions, Pune, India	Jan – Sept 2014

The above-mentioned industry experience in India, involved design and development of instructional material, conducted teacher trainings, and collected evaluation data. Details as follows:

1. **Smartbooks** – a proprietary adaptive intelligent digital educational product of McGraw Hill Education
2. **Ebooks** – Created ebooks for several testprep books in *McGraw Hill Education*
3. **Pilot implementation of an Artificially Intelligent personalized learning product for K-12 Mathematics called ALEKS** – Implementation, continuous monitoring and successful conclusion of pilot trial of 2 digital products in 3 schools in Vizag, AP, India. Post pilot completion – collecting data on usage and performance as well as feedback from schools and preparing a detailed analysis report as a case study for the pilot. Analyzing intrinsic and extrinsic factors that affect the learning outcome of students.
4. **Teacher's manual** for a blended (print + digital) product on Computational Thinking for *Cambridge University Press*.
5. Created and managed **a Youtube channel** as an additional educational supplement to a print product for a competitive exam, *McGraw Hill Education*

6. Design and implementation of **teacher training module for Game based learning platform** 'Codemonkey' in a school in Tamil Nadu, India for *Cambridge University Press*.

PROFESSIONAL MEMBERSHIPS AND ACADEMIC SERVICE

MEMBERSHIP IN ACADEMIC, PROFESSIONAL, AND SCHOLARLY SOCIETIES
- American Educational Research Association (AERA)
  - o Special Interest Group (SIG) – Educational Change
  - o Member of Division K – Teachers and Teacher Education
- Association for Educational Communications and Technology (AECT)
  - o Member of Division - Organizational Training and Performance
- Association of Computing Machinery (ACM)

SERVICE PROJECTS

Graduate Global Ambassador for Purdue University (2021- Ongoing)
I serve as a volunteer advisor to the Office of Graduate Admissions and assist with outreach activities in India. This role involves:
- Interaction with a variety of graduate students from around the US and the rest of the world.
- Review of Graduate School web content, printed material, and other communications
- Opportunity to educate others about your culture and experiences
- Share experiences about life as a graduate student on the Graduate School blog
- Participate in ambassador meetings every semester

[Promoting Awareness of Environmental Sustainability Among Students in After-school programmes through Augmented Reality-based Activities.](#) *(Spring 2023)*
This is a service project in collaboration with two non-profit organizations – Wonderland Education and Hanna Community Center – involving elementary school students in an afterschool program. The goal of this project is to increase awareness about sustainability and environmental conservation among underserved students in the local community through hands-on activities, play-based learning, and augmented reality (AR) based storytelling.

President of Purdue Association of Learning Design and Technology (2021-2022)
The president acts as the representative voice of the Leaning Design and Technology student body to the program, department, college, university, and any other organization. During my tenure as a PALDT president,
- My team and I launched a YouTube channel for our organization.
- We organized several speaker sessions by alumni of our program to provide input and advice on relevant topics in our field.
- We organized a panel session to discuss tips and tricks for creating a good portfolio.
- We invited Dr. Charles Reigeluth for an in-person talk and interaction with the LDT students.
- We created and launched a student concern redressal system to streamline the process for all LDT students to report their concerns and issues.

- We restructured the PALDT board by creating a new position of Diversity, Equity, and Inclusion (DEI) Officer who would take on the responsibility of ensuring that all students and perspectives are fairly represented in the mission and activities of PALDT.

Community Service Project (Excel Center, Lafayette) (2020-21)

Purdue Association of Learning Design and Technology (PALDT) in partnership with Excel Center implemented a service-learning project for 'teaching computer and internet skills to mixed ability adult learners.' A series of three workshops were designed in this project. I was a part of a 2-member team that developed a workshop on 'Computer Applications'.

Community Service: Group Project for United Way (2019-2020)

Developed one of the learning modules for the project in a group of 4 – on the subject of 'Skill Based Volunteering'.

- Experience in developing and creating learning solutions that drive measurable impact to the organization and align to organization's and learner's needs
- Experience in developing face-to-face learning experiences
- Experience in instructional design models
- Communication (written and oral), presentation, teamwork, and problem-solving skills
- Strong organizational and time management skills (being able to work on multiple projects at once)