Shamila Janakiraman

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EDUCATION

Ph.D., Learning Design & Technology, Purdue University, West Lafayette, IN	9/2020
Department: Curriculum and Instruction Area of Specialization: Learning Design & Technology Advisor: Dr. Sunnie Watson, Ph.D.	
M.S., Learning Design & Technology, Purdue University West Lafayette, IN	8/2016
M.B.A, Marketing Management, IGNOU, India	7/2001
B.E., Electronics & Communication Engineering, Madras University, India	5/1992
CURRENT POSITIONS	

Postdoctoral Researcher, Purdue University

2021 - July 2023

Working on a multi-university National Science Foundation funded project to support systemic change in computing education by the development of a research-based competency-based education model.

- -Project Manager
- Conducting a systematic literature review on competencies used by computing professionals
- -Developing a competency-based education model (knowledge, skills, and dispositions)
- -Redesigning curricula for computing-related degree programs

Lecturer, Learning Design & Technology, College of Education, Purdue University 2021 - May 2023

Teaching Graduate level courses at Purdue University

-Instructional Design Competencies (online)	Fall 2021
-Advanced Practices in Learning Systems Design (online)	Fall 2021
-Introduction to E-learning (Face-to-Face)	Spring 2022
-Instructional Systems Design (Online)	Summer 2022
-Instructional Systems Design (Face-to-Face)	Fall 2022
-Instructional Design Competencies (online)	Spring 2023

Teaching Excellence Advisory Committee, Purdue University

-Member	2021-Present
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-Implement the Teaching Excellence framework at Purdue University

Purdue Post-Doctoral Association (PPDA)

-Elected Council Member 2022-2023

TEACHING EXPERIENCE

Visiting Faculty

Taught Graduate level courses at Purdue University (online)

-Learning Theory and Instructional Design
-Project Management in Learning Design and Technology
-Introduction to E-Learning
Summer 2021

Teaching Assistant

EDCI 27000: Introduction to Educational Technology (undergraduate course):

Course taught by Dr. Tim Newby, COE, Purdue University. 2017 - 2020

Co-instructor (Face-to-Face courses)

Taught following courses

Learning Theory and Instructional Design (Graduate level course): 2019

With Dr. Sunnie Lee Watson, Purdue University

Advanced Practices in Learning Systems Design (Graduate level course): 2019

With Dr. Adrie Koehler Ph.D., Purdue University

Co-instructor (online courses)

Taught following courses

Foundations of Learning Design and Technology(Grad level course): 2018, 2019, & 2020

With Dr. Sunnie Lee Watson, Purdue University

Project Management in Learning Design and Technology (Grad level course): 2018 With Dr. Adrie Koehler Ph.D., Purdue University 2017

Research Projects

Competency-Based Education Model - Computing Competencies

2021 - 2023

- -Project Manager: Conducting a systematic literature review of 1000s of articles
- -Data collection from interviews, journals, and conference proceedings
- -Data Analysis Tools used: Rayyan & Dedoose
- -Creating a competency-based education model to depict computing competencies

PoRTAL – Purdue online Repository for Teaching And Learning

2017 - 2021

- Conducted a Design-Based Research (DBR) study on this project
- Multidisciplinary multi-grant project to develop Open Educational Resources (OERs)
- Developed OERs to help faculty and graduate students transition to online teaching
- Completed user needs analysis, design, development, and implementation
- Implemented an international evaluation study

Teaching Academy – Purdue University

2020-22

- -Conducted a Qualitative case study
- -Graduate administrative/professional assistantship with the Teaching academy
- -Project initiated by the Provost and Executive Vice President for Academic Affairs and Diversity
- -Project goals achieved:
 - Defined teaching excellence.
 - Determined how to document, evaluate, and recognize excellent teaching
 - Created an evaluation framework
- -Developed a "Teaching Excellence Guide" to be used by all colleges at Purdue University
- -A paper based on this research is under review

Research Tools used: Nivo, SPSS, Rayyan, PLS-SEM, Dedoose, Zotero, & Mendeley

Professional Experience

Teaching Excellence Committee

2022-2023

- -Advisory council member
- -Guiding the design and delivery of sessions for faculty professional development

Explore! Interactive (Augmented Reality)

2018

Educational Content Developer and Instructional Design Lead.

- -Designed educational content to be implemented in an Augmented Reality (AR) platform.
- -Designed a lesson on Electrical Circuits for the Physics curriculum.
- -Implemented an inquiry-based learning model for middle school students.

Journal of Cleaner Production

-Peer reviewer for instructional design related articles

2020 - Present

Journal of Research on Technology in Education

2019 - Present

- -Peer reviewer
- -Participated in the doctoral mentoring peer-review program.

Journal of Computing in Higher Education

-Peer reviewer 2021-Present

Professional Development Certificates

Teaching Certificates awarded by the Center for Instructional Excellence, Purdue University

-Graduate Instructional Development Certificate 2018 -Graduate Teacher Certificate 2018

$\textbf{Qualitative Research Certificate} \ \text{awarded by the Department of Curriculum \& Instruction, Purdue}$

University. 2020

Quality Matters certificate

2018

- -Independent Applying the QM Rubric (APPQMR) Fifth Edition
- -Instructional Design consultant, reviewed 15 online courses using the QM rubric sixth edition

2022

RESEARCH PUBLICATIONS

Published Research Papers:

- Janakiraman, S., Watson, S. L., & Watson, W. R. (2022). Pre-Service Teachers' Perceptions About Using Digital Games to Change Environment Related Attitudes and Behaviors: A Case Study. Learning, Design, and Technology. An International Compendium of Theory, Research, Practice, and Policy. Springer Nature.
- Richardson, J. C., Castellanos Reyes, D., **Janakiraman, S**., & Duha, M. S. U. (2022). The Process of Developing a Digital Repository for Online Teaching Using Design-Based Research. TechTrends, 1-14. https://doi.org/10.1007/s11528-022-00795-w
- Koehler, A., Cheng, Z., Fiock, H., Wang, H., Janakiraman, S., & Chartier, K. (2022). Examining students' use of online case-based discussions to support problem solving: Considering individual and collaborative experiences. Computers & Education. https://doi.org/10.1016/j.compedu.2021.104407
- Janakiraman, S. (2021). Using digital games in virtual classrooms to make attitudinal learning motivating and engaging. In *Handbook of Research on Transforming Teachers' Online Pedagogical Reasoning for Engaging K-12 Students in Virtual Learning* (pp. 236-258). IGI Global.
- Janakiraman, S., Watson, S.L., Watson, W.R., & Newby, T. (2021). Exploring the Effectiveness of Digital Games in Producing Attitudinal Learning in Environmental Sustainability Education: A Mixed Methods Study. *Computers and Education*. https://doi.org/10.1016/j.compedu.2020.104043
- Janakiraman, S., Watson, S.L., & Watson, W.R., (2021). Effectiveness of digital games in converting ecoawareness to pro-environmental behaviors when played collaboratively and individually: A mixed methods study in India. *TechTrends*, 1-17. https://doi.org/10.1007/s11528-020-00571-8
- Janakiraman, S., Watson, S.L., Watson, W.R., & Cheng, Z. (2021). Creating environmentally conscious engineering professionals through attitudinal instruction: A mixed methods study. *Journal of Cleaner Production*, 125957. https://doi.org/10.1016/j.jclepro.2021.125957
- Janakiraman, S., Watson, S.L., Watson, W.R., & Shepardson, D. (2021). Influence of digital games on proenvironmental attitudes and behaviors: A mixed methods study in India using the new ecological paradigm scale. *Journal of Education for Sustainable Development*. https://doi.org/10.1177/0973408221997844
- Koehler, A., Cheng, Z., Fiock, H., **Janakiraman, S**. & Wang, H. (2020). Asynchronous online discussions during case-based learning: A problem-solving process. *Online Learning Journal*. DOI: http://dx.doi.org/10.24059/olj.v24i4.2332
- Caskurlu, S., Richardson, J., Alamri, H., Chartier, K., & Farmer, T., **Janakiraman, S.**, Strait, M., Yang, M. (2020). Cognitive Load and Online Course Quality: Insights from Instructional Designers in a Higher Education Context. *British Journal of Educational Technology*. https://doi.org/10.1111/bjet.13043

- Watson, W. R., Watson, S. L., Fehrman, S. E., Yu, J. H., & **Janakiraman, S**. (2020). Examining international students' attitudinal learning in a higher education course on cultural and language learning. *Journal of International Students, 10*(3).

 https://www.ojed.org/index.php/jis/article/view/1083/1124
- Janakiraman, S., Watson, W.R., & Watson, S.L., Bawa, P. (2019). Instructional strategies for producing attitude change in a multicultural education course: A qualitative case study. *Journal of Educational Research and Practice*, *9*(1), 300-315. DOI:10.5590/JERAP.2019.09.1.21
- Cheng, Z., Watson, S.L., Watson, W.R., & Janakiraman, S. (2019). Attitudinal learning in large-enrollment classrooms: A case study. *TechTrends*, 1-14. Doi:10.1007/s11528-019-00462-7
- **Janakiraman, S.**, Watson, S.L. & Watson, W.R. (2018). Adult learners use of self-directed learning strategies in a massive open online course. *Journal of Ethnographic & Qualitative Research*, 13(2), 122-133.
- **Janakiraman, S.**, Watson, S.L. & Watson, W.R. (2018). Using game-based learning to facilitate attitude change for environmental sustainability. *Journal of Education for Sustainable Development*, 12(2), 176–185. https://doi.org/10.1177/0973408218783286
- Watson, S. L., Yu, J., Watson, W. R., Caskurla, S., **Janakiraman, S.**, & Fiock, H. S. (2018). Watson, S. L., Watson, W. R., Yu, J. H., Caskurlu, S., Janakiraman, S., & Fiock, H. (2018). Attitudinal learning and its relation to gender, age, ethnicity, enrolment purpose, and most impactful learning activity in a science of happiness MOOC. *International Journal of Learning Technology, 13*(4), 306-326. https://doi.org/10.1504/IJLT.2018.091632
- Watson, S. L., Watson, W. R., **Janakiraman, S**. & Richardson, J. (2017). A team of instructors' use of social presence, teaching presence and attitudinal dissonance: An animal behavior and welfare MOOC. *The International Review of Research in Open and Distributed Learning, 18* (2), 69-90. DOI: http://dx.doi.org/10.19173/irrodl.v18i2.2663
- Watson, W. R., Watson, S. L., & **Janakiraman, S**. (2017). Instructional Quality of Massive Open Online Courses: A Review of Attitudinal Change MOOCs. *International Journal of Learning Technology*, 12 (3). https://doi.org/10.1504/IJLT.2017.088406

Papers In Press and Review:

- Payne, L., & Janakiraman, S. (Under review). Defining and evaluating teaching excellence at a research-intensive university: Sharing the stage. *The Journal of Higher Education*.
- Watson, W. R., Watson, S. L., Wanju, H., Janakiraman, S. & Dufault, K. H. (Under review). Student Attitudes Toward Digital Badges for Instructional Design Competency-Based Education.

Work in Progress:

Janakiraman, S., Exter, M., Duan, S., & Sabin, M. Preliminary results from a systematic literature review on computing competencies required in the workplace

- **Janakiraman, S.** Making Learning Relevant in a Massive Open Online Course using an OER-enabled Pedagogy.
- Richardson, J., Castellanos Reyes, D., **Janakiraman, S.,** Shams Duha, M. Design-based research on PoRTAL: Digital Repository for Online Teaching and Learning.

Conference Proceedings:

- **Janakiraman, S.** (2021). Games in environmental sustainability education. Indiana STEM Educational Conference proceedings.
- Janakiraman, S. (2020). Digital games for environmental sustainability education: Implications for Educators. Eighth International Conference on Technological Ecosystems for Enhancing Multiculturality (TEEM'20) Proceedings.

Research Presentations

American Educational Research Association (AERA) 2023 (Accepted presentations):

Topic: Educational recommendations for improving computing education: Report from a systematic literature review

Topic: Impact of an Open Online Repository to Support Online Teaching and Learning: The Users' Perspective

Association for Educational Communications and Technology (AECT) 2022: Paper Presentation

Topic: Exploring the competencies required by computing professionals in the workplace: A

systematic literature review

Round Table: Effectiveness of team building activities on student learning experiences in online courses

Association for Educational Communications and Technology (AECT) 2021: Paper Presentation Topic: Influence of digital games on pro-environmental attitudes and behaviors: A mixed methods study in India using the new ecological paradigm scale. *Journal of Education for Sustainable Development*.

American Educational Research Association (AERA) 2021: Poster Presentation

Topic: Influence of digital games on pro-environmental attitudes and behaviors: A mixed methods study in India using the new ecological paradigm scale.

Association for Educational Communications and Technology (AECT) 2020: Paper Presentation
Topic: Exploring the Effectiveness of Digital Games in Producing Attitudinal Learning in
Environmental Sustainability Education: A Mixed Methods Study.

American Educational Research Association (AERA) 2020: Paper Presentation

Topic: The Role of Online Case-based Discussions in Supporting Individual Problem Solving

TEEM 2020 Online Conference. Organized by the University of Salamanca, Spain on October 22, 2020 Topic: Digital Games for Environmental Sustainability Education: Implications for Educators Received Best Paper award for the TEEM'20 Advances on Sustainable Development in Higher Education track.

AECT 2019: Presentations

Topics:

- Developing a Digital Repository for Online Teaching and Learning Using Design-Based Research
- Examining Students' Use of Online Case-based Discussions to Support Problem Solving
- Instructional Designers Perceptions of Online Course Quality and Cognitive Load
- Attitudinal learning in large-enrollment classrooms: A case study

AERA 2019: Round Table Session

Topic: Instructional Strategies for Producing Attitude Change in a Multicultural Education Course: A Qualitative Case Study.

AECT 2018: Poster Presentation

Topic: Instructional Design for Adult Education: Autoethnographic Study in a Service-Learning MOOC.

AERA 2018: Presentation

Topic: What do we know about attitudinal learning in MOOCs?: Gender, age, ethnicity, enrollment purpose, and most impactful learning activity in a science of happiness MOOC.

Mid-Western Educational Research Association (MWERA) 2017: Poster Presentation

Topic: Gain Experience for Good: Autoethnographic Study in the Designers for Learning Service MOOC.

AECT 2017: Poster Presentation

Topic: How did adult learners use self-directed learning strategies in a science of happiness MOOC designed for attitudinal learning: A qualitative study.

Research seminar arranged by Dr. James P. Greenan (January 2019) for Career and Technical Education, Purdue University. Case study methodology used to conduct a research study as a team.

Topic: Cognitive Load in Online Course Quality

INSTRUCTIONAL DESIGN PROJECTS

Portal Tier 2 2019-2021

- -Designed and developed online workshops for Gamification and 21st Century Skills.
- -Used Articulate Storyline 360 to create 10 interactive, self-paced modules.
- -Audio narration was added with ON/OFF option to ensure accessibility.
- -Included demo videos and interviews with experts to serve as exemplars.
- -Incorporated gamified quizzes to provide opportunities for practice & self-assessment.
- -Provided option to gain credit for course completion in the form of digital badges/certificates.

- -Built the workshops on the D2L Brightspace learning management system
- -We won the 2021 UPCEA Central Region Excellence in Instructional Design Award for PoRTAL

PoRTAL Tier 1 2017 - 2019

Created instructional materials for building Purdue University's

Portal (Purdue Repository for online Teaching and Learning):

- -Developed learner-centered go-to resources to meet needs of online instructors.
- -Each OER features: instructional strategies, course enhancement tips, pedagogy, sample tools, and policies to help make the role of an online instructor easier and build courses that are more engaging for online students.
- -Conducted a user needs analysis, designed, developed, evaluated, and implemented PoRTAL.
- -Our team won the 2019 AECT Division of Distance Learning Best Practice Award for PORTAL

Resources I created:

- 21st Century Skills
- Gamification in online teaching
- <u>Teamwork</u>

Digital Badges – Purdue Passport

2020 - 2021

Working with Dr. Tim Newby, Professor, Learning Design & Technology to create new digital badges that will help highlight digital competencies earned by graduate students.

iLookout 2019

Online course developed at Penn State College of Medicine that guides primary caregivers on how to identify and report cases of child abuse.

-Evaluated the gamification elements used to motivate learners to complete the course

Designers for Learning

2016 to 2019

- -Created STEM-based OERs to meet educator and learner needs in Adult Basic Education (ABE)
- -Developed OERs using the Empathy Framework to facilitate the learning process for adults
- -Made the OERs available on the OER Commons website to make them freely available
- -Evaluated OERs that were developed by other instructional designers for ABE
- -Facilitated a service-learning MOOC on instructional design as part of the instructional team

Explore! Interactive (Augmented Reality)

2018

- -Educational Content Developer and Instructional Design Lead.
- -Designed lessons for teaching about electric circuits
- -Lessons were adapted for development in an Augmented Reality (AR) platform
- -Energy and Circuits interactive learning module available commercially on Mindlabs
- -This game features male and female protagonists to attract girls to STEM fields

Technical Skills

Digital learning tools used

- -Authoring tools: Articulate Storyline 360, Articulate Rise 360
- -Learning Management Systems: Blackboard, Canvas, Moodle, and Brightspace (D2L)
- -Video editing: Camtasia, Adobe Premiere Pro, and OpenShot
- -Audio editing: Audacity

FELLOWSHIPS, AWARDS & GRANTS

- Received a sponsored registration (2022) from the Systems Thinking SIG of the AERA for conference participation.
- Received a Professional Development Conference Scholarship (2021) from the AECT Foundation Board of Trustees towards conference participation.
- Recipient of the 2021 UPCEA Central Region Excellence in Instructional Design Award for "PoRTAL: Purdue Repository for Online Teaching and Learning – Tier 2."
- Recipient of the 2020-2021 Mary Kay Sommers Dissertation Award from the College of Education, Purdue University.
- Recipient of the 2020-2021 Outstanding Dissertation Award from the Department of Curriculum and Instruction, Purdue University.
- Received the COVID Relief Fellowship (Fall 2020) from the College of Education, Purdue University.
- Recipient of the Best Paper Award at the TEEM 2020 Advances on Sustainable Development in Higher Education track, University of Salamanca, Spain. Topic: Digital Games for Environmental Sustainability Education: Implications for Educators.
- Selected to participate in the Early Career Symposium at the 2019 AECT Convention in Las Vegas, Nevada organized by The Research & Theory Division.
- Recipient of the 2019 AECT Division of Distance Learning Best Practice Award for a team project titled, "PoRTAL: Purdue Repository for Online Teaching and Learning."
- Awarded the Bilsland Dissertation Fellowship (2019) by the College of Education, Purdue
 University for outstanding academic record and to devote full-time effort to the completion of
 all doctoral degree requirements. The award is worth \$ 8,538 and will be paid on a monthly
 basis.
- Awarded the **Frank B. De Bruicker Graduate Award** in Educational Technology (2018) by the Learning Design & Technology program at Purdue University. The award is worth \$3000.
- Recipient of the David Ross Fellowship (2016). This competitive and prestigious fellowship was awarded by the Graduate School, Purdue University. The total award package is worth \$54, 849 approximately per year for 4 years.
- Awarded \$800 Dissertation Research Grant from College of Education and Learning Design & Technology program.

- Recipient of the Honorary In-Progress Poster Presentation Award at the Annual Graduate Student Educational Research Symposium (AGSERS 2017). Awarded a plaque by GSEC, Purdue University.
- Awarded a certificate of recognition by Scholastic India in 2005, for an "Innovative Idea" to improve student reading habits in K-12.

OTHER GRANTS

- Awarded a \$680 Community Service-Learning Grant (November, 2022) by Purdue University's Office of Engagement for STEM projects at Imagination Station, Lafayette.
- Awarded a \$500 Community Service-Learning Grant (2018) by Purdue University's Office of Engagement for STEM projects at Imagination Station and Bauer Center, Lafayette.
- Awarded a \$350 Travel Grant (2019) by Global Ambassadors organization in Purdue Graduate School. Responsibilities included being a Purdue ambassador to India and to organize a presentation that addresses admission, residential, subject majors, and other details that are informative to prospective graduate students.
- Awarded several travel grants every semester from 2016 to 2022 for presenting at conferences.
 Most Recent ones:
 - Received a \$700 Postdoctoral Supplemental Travel Grant for travel to the 2023 American Educational Research Association (AERA) Conference
 - Received \$1,800 travel grant from the postdoc project to travel to the 2022 AECT conference
 - Postdoc Association, Purdue University: \$400 grant to attend the AERA 2022 conference

GRANT WRITING EXPERIENCE

- Transdisciplinary (TD) Program Planning Grants, Innovation Hub, Purdue University. Proposal submitted after getting buy-in from faculty at Purdue Polytechnic and the College of Education.
- Spencer Foundation Special COVID-19 grant: PoRTAL+: A Design-Based Research Study on the Use of Open Educational Resources for Training Instructors to Teach at a Distance. (Not awarded).

PROFESSIONAL MEMBERSHIPS & ACADEMIC SERVICE

Purdue Post-Doctoral Association (PPDA): Council member

October 2022- July 2023

Webinar: Conducting a Systematic Literature Review, AECT International Division PD committee

October 2022

Postdoc Association, Purdue University: Ask a postdoc panel

September 2022

Guest Lecture: Augmented Reality, Game-based Learning & Gamification December 2021

In the Learning Systems Design course

The Aronson family Science & Society Honors Lecture. Making it Public: March 2020

Communicating Scientific Research and the Bioethical Implications of Designer Biology.

Panelist with scholars from Biology and Serious Gaming, and Dr. David Baker from the University
of Washington who has developed a game called Foldit for biochemistry education.

American Educational Research Association (AERA):

2016-present

- Elected as Secretary/Treasurer of the Systems Thinking in Education SIG
- 2020-2022

Peer reviewer for Special Interest Groups (SIG)

2020 -Present

- Systems Thinking in Education
- Technology-Based Environments Special Interest Groups (SIGs)
- Design & Technology

Association for Educational Communications & Technology (AECT):

2016-present

- Coordinator-Professional Development Committee of the International Division
 2020 23
- Peer reviewer for conference proposals

2018-20

- Panelist for a Graduate Student Assembly (GSA) session on community service projects
- Volunteer technology assistant

2017

Mid-Western Education Research Association (MWERA):

2016-2017

Curriculum and Instruction Graduate Student Association (CIGSA), Purdue University: 2018-19

Graduate Student Education Council (GSEC), Purdue University:

2015-2018

SERVICE PROJECTS

Purdue Under-Graduate Research Council: As council member made students aware of research opportunities and mentored under-graduate students in research (2019-20).

USKids4Water.org: Teaching spoken English to children living in a rural region in India via WhatsApp. Conducting Spell Bee contests to improve English skills.

Designers for Learning: Instructional design of Open Educational Resources (OERs) for Adult Basic Education (ABE), evaluating OERs, and facilitating MOOCs. (2016-2020).

Bauer Center: Demonstrate Science experiments to elementary school students. (2018-19)

Imagination Station: Demonstrate Science experiments to elementary school students and design websites of lesson modules. (2016-present)

Purdue Graduate Office: Global ambassador for India (2017-20). Conducting webinars and presentations about admissions, funding, and other elements that impact life in campus.

Indian Women's Association Academy: Educational service projects in the Greater Lafayette Community (2018-present)

K-12 Schools in India: Providing consultations on how to implement educational technology tools in K-12 classrooms to promote 21st century skills development among students.

Graduate Student Assembly (AECT): Panelist in a discussion on how graduate students can contribute effectively in community service and service-learning projects (2018).

INTERNATIONAL EXPERIENCE

Teaching Experience:

CMS Computers Ltd., Chennai, India

1994 - 1996

Faculty: Computer hardware, Basic Electronics

Delhi Public School (DPS), Lucknow, India

May 2004 - April 2006

Faculty: STEM Subjects, Environmental Science

Lucknow University, Lucknow, India,

2007

Lecturer: Business Organization for B. Com (Hons)

Research and Writing Experience

Freelance writer

2001 - 2004

Educational content and short stories for children

Technology Marketing Corporation, Norwalk, CT, USA

Nov 2007 - Nov 2014

Contributing Editor (Online):

Writing articles on technology and technology-based business corporations.

Asia-Pacific Business and Technology Report, Seoul, Korea

June 2009 - August 2015

Content Contributor on business and technology topics of global interest http://www.biztechreport.com/source/shamila-janakiraman

Fun and Focus Published by Knowledge Base, Chennai, India

2007 - 2010

Educational Content Writer: Writing articles on science and technology, places of interest and short stories for K-12 students.