ZILONG PAN

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EDUCATION

May 2022	**Ph.D.** in Learning Technologies Program Department of Curriculum and Instruction, College of Education The University of Texas at Austin. Austin, Texas.
May 2020	**M.Ed.** in Quantitative Research Methods Department of Educational Psychology, College of Education The University of Texas at Austin. Austin, Texas.
May 2015	**M.A.T.** in Middle Grades Education (Science & Social Studies) Department of Educational Theory and Practice, College of Education The University of Georgia. Athens, Georgia.
Jun 2012	**B.A.** in Chinese Language and Literature Department of Chinese Language and Literature, School of Literature and Journalism Hunan First Normal University. Changsha, Hunan Province, China.

PROFESSIONAL EXPERIENCE

Academia Experience

Aug 2022-Present	**Assistant Professor** (Tenure Track), Teaching, Learning, and Technology Program College of Education, Lehigh University. Bethlehem, PA.
Jan 2017-May 2021	**Teaching Assistant**, Learning Technologies Program College of Education, the University of Texas at Austin. Austin, TX.
Aug 2019-May 2020	**Graduate Research Assistant**, Teacher Education Committee College of Education, the University of Texas at Austin. Austin, TX.
Jun 2013-May 2015	**Graduate Research Assistant**, Department of Educational Theory and Practice College of Education, the University of Georgia. Athens, GA.

Teaching Experience

Aug 2015-May 2016	**Middle School Teacher – 7th Grade Science & Math** The Epstein School. Atlanta, GA.

| Aug 2014-Apr 2015 | **Middle School Student Teacher - 6th Grade Science** |
| | Dacula Middle School. Dacula, GA. |

| Sep 2013-Dec 2013 | **Middle School Student Teacher - 8th Grade Social Study** |
| | Hilsman Middle School. Athens, GA. |

| Aug 2012-Apr 2013 | **High School Student Teacher - 9th Grade World History** |
| | Clark Central High School. Athens, GA. |

Instructional Technologist Experience

| May 2020- Aug 2020 | **Instructional Designer** |
| | Office of Instructional Innovation, the University of Texas at Austin. Austin, TX. |

| July 2019-Dec 2019 | **Data/IT Coordinator** |
| | Magnolia Montessori for All (Public Montessori school). Austin, TX. |

| Jan 2018-May 2018 | **Data Analyst for Staff Training/Development** |
| | Ericsson (Telefonaktiebolaget L. M. Ericsson). Austin, TX / Remote. |

PUBLICATIONS

Note: asterisk (*) denotes student co-author.

Peer-Reviewed Book Chapters

1. **Pan, Z.**, Li, C., Zou, W., & Liu, M. (2023). Applying learning analytics approaches to detect and track students' cognitive states during virtual problem-solving activities. In G. Durak and S. Kankaya (Eds.) *Perspectives on Learning Analytics for Maximizing Student Outcomes.* IGI Global.

2. Liu, M., Han, S., Shao P., Cai, Y., & **Pan, Z**. (2021) The current landscape of research and practice on visualizations and dashboards for learning analytics. In M. Sahin and D. Ifenthaler (Eds.) *Visualizations and Dashboards for Learning Analytics. Advances in Analytics for Learning and Teaching*. Springer, Cham.

3. Liu, M., Horton, L., Li, C., & **Pan**, **Z**. (2019). Alien Rescue. In K. Schrier. (Ed.) *Learning, education & games vol. 3: Bringing games into educational contexts.* ETC Press (Carnegie Mellon).

4. Liu, M., **Pan, Z.**, Pan, X, An. D, Zou, W., Li, C., & Shi, Y. (2019). The use of analytics for educational purposes: a review of literature from 2015 to present. In M. S. Khine (Ed.) *Emerging trends in learning analytics*. Brill Publishers.

5. Liu, M., Zou, W., Li, C., Shi, Y., **Pan**, **Z**., & Pan, X. (2018). Using learning analytics to examine relationships between learners' usage data with their profiles and perceptions: a case study of a MOOC designed for working professionals, In D. Ifenthaler, D. Mah, and J. Y. Yau (Eds.) *Utilizing Learning Analytics to Support Study Success*. Springer International Publishing.

Peer-Reviewed Journal Articles

1. He, J., Jiang, Z., **Pan, Z**., Men, Q., & Xie, K. (2025). The transition patterns of learners' behavior and the association with motivation and cognitive engagement in online learning. *Research and Practice in Technology Enhanced Learning, 20*, 026. https://doi.org/10.58459/rptel.2025.20026

2. Shao, P., **Pan**, Z., Meng, C., & Liu, M. (2024). Revealing pre-service teachers' reflections regarding online practicum through the lens of TPACK. *Education and Information Technologies*. 1-35. https://doi.org/10.1007/s10639-024-13053-8

3. Meng, C., Zhao, M., **Pan, Z**., Pan, Q., & Bonk, C. (2024). Investigating the impact of gamification components on online learners' engagement. *Smart Learning Environment, 11*(47), 1-28. https://doi.org/10.1186/s40561-024-00336-3

4. Zheng, J., **Pan**, **Z**., Li, S., & Xie, C. (2024). Modeling temporal self-regulatory processes in STEM learning of engineering design. *Educational Technology & Society, 27*(4), 20-33. https://doi.org/10.30191/ETS.202410_27(4).RP02

5. **Pan**, **Z**., *Biegley, L., *Taylor, A., & Zheng, H. (2024). A systematic review of learning analytics-incorporated instructional interventions on learning management systems. *Journal of Learning Analytics*, *11*(2), 52-72. https://doi.org/10.18608/jla.2023.8093

6. Han, S., Liu, M., **Pan**, **Z**., Cai, Y., & Shao, P. (2023). Making FAQ chatbots more Inclusive: An examination of non-native English users' interactions with new technology in massive open online courses. *International Journal of Artificial Intelligence in Education*, *33*(3), 752-780. https://doi.org/10.1007/s40593-022-00311-4

7. Jiang, Z., Xu, Z., **Pan**, **Z**., He, J., & Xie, K. (2023). Exploring the role of artificial intelligence in facilitating assessment of writing performance in second language learning. *Languages, 8*(4), 247. https://doi.org/10.3390/languages8040247

8. Yang, M., Miller, C., Crompton, H., **Pan**, **Z**., & Glaser, N. (2023). The implementation of virtual reality in organizational learning: Attitudes, challenges, side effects, and affordances. *TechTrends, 68,* 111–135. https://doi.org/10.1007/s11528-023-00917-y

9. **Pan**, **Z**., & Liu, M. (2022). The role of adaptive scaffolding system in supporting middle school problem-based learning activities. *Journal of Educational Technology Systems, 51*(2), 117–145. https://doi.org/10.1177/00472395221133855

10. Cai, Y., **Pan**, **Z**., Han, S., Shao, P., & Liu, M. (2022). The impact of multimodal communication on learners' experience in a synchronous online environment: A mixed-methods study. *Online Learning. 26*(4), 1-28. https://olj.onlinelearningconsortium.org/index.php/olj/article/view/3448

11. Zheng, H., Branch, R. M., Ding, L., Kim, D., Jung, E., Lu, Z., Li, T., **Pan, Z**., & Yoon, M. (2022). The combination of segmentation and self-explanation to enhance video-based learning. *Active Learning in Higher Education*, *25*(2), 285-302. https://doi.org/10.1177/14697874221126920

12. Liu, M., Li, C., & **Pan**, **Z**. (2022). Creating an interactive dashboard to support middle school teachers' implementation of a technology-supported problem-based learning program. *International Journal of Designs for Learning, 13*(1), 1-18. https://doi.org/10.14434/ijdl.v13i1.31243

13. Liu, J., Wang, K., Chen, Z., & **Pan**, **Z**. (2022). Exploring the contributions of job resources, job demands, and job self-efficacy to STEM teachers' job satisfaction: A commonality analysis. *Psychology in the Schools*, 1-21. https://doi.org/10.1002/pits.22768

14. Cai, Y., **Pan**, **Z**., & Liu, M. (2022). Augmented reality technology in language learning: A meta-analysis. *Journal of Computer Assisted Learning*, *38*(4), 929-945. https://doi.org/10.1111/jcal.12661

15. Liu, M., **Pan**, **Z**., Li, C., Han, S., Shi, Y., & Pan, X. (2021). Using learning analytics to support teaching and learning in higher education: A systematic focused review of journal publications from 2016 to present. *International Journal on E-Learning, 20*(2), 137-169. https://www.learntechlib.org/primary/p/218376/

16. **Pan**, **Z**., López, M., Li, C., & Liu, M. (2021). Introducing augmented reality in early childhood literacy learning. *Research in Learning Technology, 29*. https://doi.org/10.25304/rlt.v29.2539

17. Liu, M., **Pan**, **Z**., Cai, Y., Shao, P., & Han, S. (2021). The effect of a multimedia-enriched problem-based learning environment on socioeconomically disadvantaged middle school students' science learning: Examining the relationship among self-efficacy, attitude, and performance. *Journal of Educational Multimedia and Hypermedia, 30*(4), 359-391. https://www.learntechlib.org/p/219807/

18. Zou, W., Hu, X., **Pan**, Z., Li, C., Cai, Y., & Liu, M. (2021). Exploring the relationship between social presence and learners' prestige in MOOC discussion forums using automated content analysis and social network analysis. *Computers in Human Behavior, 115*. https://doi.org/10.1016/j.chb.2020.106582

19. Liu, M., Shi, Y., **Pan**, **Z**., Li, C., Pan, X., & López, M. F. (2020). Examining middle school teachers' implementation of a technology-enriched problem-based learning program: Motivational factors, challenges, and strategies. *Journal of Research on Technology in Education*, *53*(3), 279-295. https://doi.org/10.1080/15391523.2020.1768183

20. Liu, M., Zou, W., Shi, Y., **Pan**, **Z**., & Li, C. (2020). What do participants think of today's MOOCs: an updated look at the benefits and challenges of MOOCs designed for working professionals. *Journal of Computing in Higher Education, 32,* 307-329. https://doi.org/10.1007/s12528-019-09234-x

21. Liu, M., Li, C., **Pan**, **Z**., & Pan, X. (2019). Mining big data to help make informed decisions for designing effective digital educational games. *Interactive Learning Environments, 31*(5), 2562-2582. https://doi.org/10.1080/10494820.2019.1639061

22. Liu, M., Liu, S., **Pan**, **Z**., Zou, W., & Li, C. (2019). Examining science learning and attitude by at-risk students after they used a multimedia-enriched problem-based learning environment. *Interdisciplinary Journal of Problem-Based Learning, 13*(1). https://doi.org/10.7771/1541-5015.1752

23. Liu, M., Kang, J., Zou, W., Lee, H., **Pan**, **Z**., & Corliss, S. (2017). Using data to understand how to better design adaptive learning. *Technology, Knowledge and Learning, 22*(3), 271-298. https://doi.org/10.1007/s10758-017-9326-z

Peer-Reviewed Conference Proceedings

1. **Pan**, **Z**., Jagota, A., Dierolf, V., & Jain, H. (2024). Faculty perspectives on their role in the training of STEM doctoral students. In *2024 ASEE Annual Conference & Exposition* (pp.1-20). American Society for Engineering Education (ASEE). https://peer.asee.org/47458

2. *Zhu, J., Zheng, J., **Pan**, **Z**., *Biegley, L., *Liu, S., Wang, T., Xie, C., & Li, M. (2024). Leveraging large-language models to understand self-regulated learning processes in STEM education. In Lindgren, R., Asino, T. I., Kyza, E. A., Looi, C. K., Keifert, D. T., & Suárez, E. (Eds.), *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024* (pp. 1470-1473). International Society of the Learning Sciences.

3. **Pan**, **Z**., Araujo-Junior, R., Bodzin, A., Hammond, T., Anastasio, D., *Chen, N., *Wong, L., *Yee, B., & *Asibuo, P. (2024). Optimizing desktop VR for immersive experiences through user-centered design approach. *Immersive Learning Research - Practitioner, 1*(1), 56–59. https://doi.org/10.56198/5M1RHHKE8

4. Hu, X., Zhu, J., Araujo-Junior, R., Cicero, T., Bodzin, A., Hammond, T., Anastasio, D., **Pan**, **Z**., & Schwartz, C. (2024). Mystery of Lehigh Gap: Interaction and dialogue systems. *Immersive Learning Research - Practitioner, 1*(1), 85–88. https://doi.org/10.56198/5M1RHZ039

5. Bodzin, A., Araujo-Junior, R., Hammond, T., **Pan**, **Z**., Anastasio, D., Burd, J., Jhaveri, K., & Le, Q. (2024). Designing for headset VR from a longer desktop VR learning experience: Watershed Explorers: Industrial History. *Immersive Learning Research - Practitioner, 1*(1), 52–55. https://doi.org/10.56198/5M1RHFWF0

6. Chen, X., **Pan**, **Z**., & Jiang, Z. (2024). Exploring artificial intelligence (AI) literacy and prompt literacy: What do we know about artificial intelligence competency for educators?. In J. Cohen & G. Solano (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 713-718). Las Vegas, Nevada, United States: Association for the Advancement of Computing in Education (AACE). Retrieved June 5, 2024, from https://www.learntechlib.org/primary/p/224027/

7. Araujo Junior, R., **Pan**, **Z**., Bodzin, A., Semmens, K., Hammond, T., Anastasio, D., *Sechrist, S., *Lerro, N., *Rubin, E., & *Vogel, J. (2024). Flood Adventures: Evaluation study of final prototype. In Bourguet, ML., Krüger, J.M., Pedrosa, D., Dengel, A., Peña-Rios, A., Richter, J. (eds) Immersive Learning Research Network. iLRN 2023. *Communications in Computer and Information Science*, vol 1904, pp. 426-435. Springer, Cham. https://doi.org/10.1007/978-3-031-47328-9_31

8. Shao, P., Meng, C., **Pan**, **Z**., & Liu, M. (2024). Investigate pre-service teachers' learning behaviors and their relationship with academic performance through LMS log data. *The Journal of Applied Instructional Design, 13*(2), 125-129. https://dx.doi.org/10.59668/1269.15628

9. Jain, H., Dierolf, V., Jagota, A., **Pan**, **Z**., & Urban, N. (2023). Redesigning US STEM doctoral education to create a national workforce of technical leaders. In *2023 ASEE Annual Conference & Exposition* (pp.1-20). American Society for Engineering Education (ASEE). https://peer.asee.org/44062

10. Cicero, T., Hu, X., Zhu, J., Araujo-Junior, R., Bodzin, A., Hammond, T., Anastasio, D., & **Pan**, **Z**. (2023). Mystery of the Lehigh Gap: Summary of the visual aspects designed and developed for the dialogue system for desktop VR game. *Immersive Learning Research - Practitioner*, 1(1), 99–102. Retrieved from https://publications.immersivelrn.org/index.php/practitioner/article/view/54

11. **Pan**, **Z**., & Liu, M. (2022). Theory-informed problem-solving sequential pattern visualization. In *Proceedings of the 15th International Conference on Educational Data Mining (EDM'22)* (pp. 738-742). International Educational Data Mining Society (EDM). https://educationaldatamining.org/edm2022/proceedings/2022.EDM-posters.93/2022.EDM-posters.93.pdf

12. **Pan**, **Z**., & Liu, M. (2022). The Effects of learning analytics hint system in supporting students problem-solving. In *Companion Proceedings of the 12th International Learning Analytics and Knowledge Conference (LAK'22)* (pp. 77-86). Society for Learning Analytics Research (LAK). https://doi.org/10.1145/3506860.3506871

13. Zou, W., **Pan, Z**., Li, C., Liu, M. (2021). Does social presence play a role in learners' positions in MOOC learner network? A machine learning approach to analyze social presence in discussion forums. In: Ruis, A.R., Lee, S.B. (eds) *Advances in Quantitative Ethnography. ICQE 2021. Communications in Computer and Information Science*, vol 1312. Springer, Cham. https://doi.org/10.1007/978-3-030-67788-6_17

14. **Pan**, **Z**., Li, C., & Liu, M. (2020). Learning analytics dashboard for problem-based learning. In *Proceedings of the Seventh ACM Conference on Learning@Scale* (pp. 393-396). Association for Computing Machinery (ACM). https://doi.org/10.1145/3386527.3406751

15. **Pan**, **Z**., López, M. F., & Liu, M. (2019). Augmented reality in the pre-kindergarten classroom—an exploratory study of the effects of an augmented reality book set. In *Proceedings of AECT: Association for Educational Communications and Technology 2019* (pp. 433-440). Association for Educational Communications and Technology (AECT). https://members.aect.org/pdf/Proceedings/proceedings19/2019i/19_17.pdf

16. Liu, S., Liu, M., **Pan, Z**., Zou, W., & Li, C. (2019). Examining science learning by at-risk middle school students in a multimedia-enriched problem-based learning environment. In *Companion Proceedings of the 9th International Learning Analytics and Knowledge Conference (LAK'19)* (pp. 237-239). Society for Learning Analytics Research (LAK). https://www.solaresearch.org/wp-content/uploads/2019/08/LAK19_Companion_Proceedings.pdf

Edited Publications and Other Articles

1. **Pan**, **Z**. (2024). The role of engagement and metacognitive knowledge in gamified problem-based learning contexts. *Pennsylvania Council of Teachers of Mathematics, 64*(1), 19-23. https://pctm.org/wp-content/uploads/2024/05/PCTM-2024-vol-64-no-1-spring.pdf

Working Manuscripts

1. Xie, K., Jiang, Z., Men, Q., **Pan**, Z. & He, J. (Under review). Profiles of Students' Behavioral Engagement and Their Associations with Academic Motivation in Online Learning.

2. Xu, Z., Ma, S., Weng, W. & **Pan**, Z. (Under review). Assessing students' engagement and performance with learning analytics: A mixed-methods study.

HORNORS AND AWARDS

Academic Awards

2024   **Second Place Poster Award** for "The Role of Engagement and Metacognitive Knowledge in Gamified Problem-Based Learning Contexts."
Association for Educational Communications and Technology (AECT) Annual Conference.

Teaching Awards

2024-25 **Faculty Fellowship & Course Development Grant** for "Reforming Language Assessments in the Age of Generative AI."
Center for Innovation in Teaching and Learning (CITL), Lehigh University.
Awarded: $1,000.

2024   **Lehigh AI Award** for "The Design and Implementation of AI Partner in Supporting Foreign Language Teaching and Assessment."
Provost Office, Lehigh University.
Awarded: $300.

2023-24 **Senior Faculty Fellowship & Course Development Grant** for "Enhancing Reading and Writing Practices through the Integration of Generative AI Tools."
Center for Innovation in Teaching and Learning (CITL), Lehigh University.
Awarded: $2,000.

2023   **Faculty Fellowship & Course Development Grant** for "Data Visualization."
Center for Innovation in Teaching and Learning (CITL), Lehigh University.
Awarded: $500.

Service Awards

2024-25 **Future Maker Strategy Grant** for "Community of Practice for Lehigh AI."
Provost Office, Lehigh University.
Awarded: $9,500.

RESEARCH FUNDING

Competitively Awarded Research Grants

2022-24 **Co-Principal Investigator**. Jain, H., Dierolf, V., Jagota, A., Vaughn, D., & **Pan**, **Z**. Partnership with Researchers in Industry for Doctoral Education (IGE-1806904). National Science Foundation.
Awarded: $440,743.

Institutional Grants

2025-26 **Principal Investigator**. **Pan**, **Z**. Enhancing Personalized Learning in High School Math Class: Developing and Evaluating Generative Artificial Intelligence Tools as a Learning Partner. Lehigh University Faculty Research Grant Program.
Awarded: $5,840.

2024-25 **Co-Principal Investigator**. Bodzin, A., Hammond, T., **Pan**, **Z**., & Fu, J. Immersive Learning with Headset Virtual Reality for Non-Formal Learning. Lehigh University College of Education Strategic Research Grant Program.
Awarded: $30,095.

2024-25 **Principal Investigator**. **Pan**, **Z**. & Sandilos, L. ImmersED: Integrating Social-Emotional Learning and Science Knowledge through Immersive Learning Classrooms for Neurodivergent Students. Lehigh University Faculty Innovation Grant Program.
Awarded: $26,528.

2022-23 **Co-Principal Investigator**. Bodzin, A., Hammond, T., **Pan**, **Z**., & Fu, J. Immersive Learning with Headset Virtual Reality Gameful Experiences. Lehigh University Faculty Research Grant Program.
Awarded: $6,000.

Equipment Grants

2023-24 **Co-Principal Investigator**. Bodzin, A., Hammond, T., **Pan**, **Z**., & Araujo-Junior, R. Immersive Learning with Watershed Explorers: Industrial History Virtual Reality Experience. County of Northampton.
Awarded: $6,800.

CURRENT AND PENDING SUPPORT

2024-26 **Co-Principal Investigator (Pending)**. Myers, J., Dennis, M., & **Pan**, **Z**. Exploring Sources of Heterogeneity in Supplemental Interventions for Students with Mathematics Disabilities within Multi-tiered Systems of Support: A Meta-Analysis. National Science Foundation.

EDITORIAL AND REVIEW SERVICE FOR SCHOLARLY PUBLICATIONS AND CONFERENCE

Editorial Board Membership

- *Interdisciplinary Journal of Problem-Based Learning* (IJPBL)

Ad Hoc Reviewer for Scholarly Publications

- *Computers & Education*
- *Educational Technology Research and Development* (ETR&D)
- *International Journal of Human-Computer Interaction*
- *Internet and Higher Education* (IHE)
- *Journal of Computer Assisted Learning* (JCAL)
- *Journal of Educational Technology Development and Exchange* (JETDE)
- *Journal of Human-Computer Interaction* (IJHC)

Ad Hoc Reviewer for Conferences

- *Association for Educational Communications and Technology* (AECT)
- *American Educational Research Association* (AERA)

SCHOLARLY PRESENTATIONS

Note: asterisk (*) denotes student co-presenter.

Invited Presentations

2024   Invited as a guest speaker on "Design AI Products in Educational Setting" to EDCI 504 AI in Education. University of Idaho. Online, October.

2024   Invited as a speaker on "Digitally Enriched Learning Environments to Facilitate Diverse Learning Preferences in Math" to Leadership Retreat at Career and Technical Education for Schuylkill Technology Center. Hotel Bethlehem Executive Conference Center. Bethlehem, PA, May.

2024   Invited as guest speaker on "Now that AI is Entering the Classroom: What's Next for Learners and Instructors?" to Communication 197 Imagining a Future of AI and Us course. Lehigh University. Bethlehem, PA, April.

2024   Invited as a speaker and a panelist on "School-Based Study" to Lehigh School Study Council. Lehigh University. Bethlehem, PA, February.

2023   Invited as a panelist on "Pedagogical Dimensions of Generative AI" to Lehigh University faculty members and students. Lehigh University. Bethlehem, PA, February.

2022   Invited as guest speaker on "Machine Learning in Education" to ESLTECH 8226 Methods of Inquiry in Learning Technologies course. The Ohio State University. Online, November.

2022   Invited as guest speaker on "Game-Based Learning" to TLT 458 Introduction to Multimedia Programming and Development course. Lehigh University. Online, October.

2022   Invited as guest speaker on "Simulation and Games in Education" to UGS 302 Live, Play, Communicate, and Learn with Digital Media Technologies course. University of Texas at Austin. Online, April.

2022   Invited as guest speaker on "Virtual Worlds & CSCL" to ESLTECH 7277 Computer Supported Collaborative Learning course. The Ohio State University. Online, March.

2020   Invited as guest speaker on "Learning Analytics in Research" to ESLTECH 8226 Methods of Inquiries in Educational Technology course. The Ohio State University. Columbus, OH, October.

2020   Invited to a panel on "Simulation and Games in Education" to EDC 390T Instructional Systems Design course, University of Texas at Austin. Austin, TX, October.

2019   Invited to a panel on "Simulation and Games in Education" to UGS 302 Live, Play, Communicate, and Learn with Digital Media Technologies course. University of Texas at Austin. Austin, TX, April.

2019   Invited as guest speaker on "New Media Design Tools" to EDC 385G Interactive Multimedia Design and Production course. University of Texas at Austin. Austin, TX, January.

2018   Invited to a panel on "Simulation and Games in Education" to UGS 302 Live, Play, Communicate, and Learn with Digital Media Technologies course. University of Texas at Austin. Austin, TX, April.

2017   Invited to a panel on "Simulation and Games in Education" to EDC 390T Instructional Systems Design course. University of Texas at Austin. Austin, TX, September.

Peer-Reviewed Conference Presentations

1. **Pan**, Z., & Shan, L. (2024, October). The application of prompt-engineering in designing generative AI-incorporated second language learning platform. Presented at the annual conference of the *Association for Educational Communications and Technology* (AECT). Kansas City, MO.

2. **Pan**, Z., *Biegley, L., *Zhu, J., & *Smith, M. (2024, October). The impacts of gamified math problem-based learning contexts on different types of engagement and metacognitive knowledge. Presented at the annual conference of the *Association for Educational Communications and Technology* (AECT). Kansas City, MO.

3. **Pan**, Z., Men, Q., *Zhu, J., & Jiang, Z. (2024, October). Taking a leap or decrement? An innovative approach to detect students' change points via game-play log data. Presented at the annual conference of the *Association for Educational Communications and Technology* (AECT). Kansas City, MO.

4. **Pan**, Z., Papadimitriou, A., & *Zhu, J. (2024, October). Human-AI collaboration: An exploratory study on students' trust, perceptions, and knowledge about GAI as a teammate. Presented at the annual conference of the *Association for Educational Communications and Technology* (AECT). Kansas City, MO.

5. **Pan**, **Z**., & Jiang, Z. (2024, August). The Impacts of two gamification integration approaches on metacognitive knowledge and engagement in elementary math. Presented at the annual conference of *American Psychological Association* (APA). Seattle, WA.

6. **Pan**, **Z**., Zhang, X., & Jiang, Z. (2024, August). The mediating roles of motivation and self-directed learning in informal second language learning. Presented at the annual conference of *American Psychological Association* (APA). Seattle, WA.

7. **Pan**, **Z**., Araujo Junior, R., Bodzin, A., Hammond, T., Anastasio, D., *Chen, N., *Wong, L., *Yee, B., & *Asibuo, P. (2024, June). Optimizing desktop VR for immersive experiences through user-centered design approach. Presented at International Conference of the Immersive Learning Research Network (iLRN). (Online).

8. Zheng, J., **Pan**, **Z**., Li, S., & Xie, C. (2024, April). Modeling temporal self-regulatory processing in STEM learning of engineering design. Presented at the annual conference of *American Educational Research Association* (AERA). Philadelphia, PA.

9. Meng, C., **Pan**, **Z**., & Zhao, M. (2024, April). Investigating the impact of gamification on online learners' engagement. Presented at the annual conference of *American Educational Research Association* (AERA). Philadelphia, PA.

10. Shao, P., Meng, C., **Pan**, **Z**., & Liu, M. (2023, October). Investigate pre-service teachers' learning behaviors and their relationship with academic performance through LMS log data. Presented at the annual conference of *the Association for Educational Communications and Technology* (AECT). Orlando, FL.

11. Zou, W., **Pan**, **Z**., Li, C., & Yang, Y. (2023, October). Mathmagician: Co-creating an AI-based culturally responsive math word problem generator with educators and learners. Presented at the annual conference of *the Association for Educational Communications and Technology* (AECT). Orlando, FL.

12. He, J., Jiang, Z., **Pan**, **Z**., Men, Q., & Xie, K. (2023, October). The changing patterns of learners' behavior and the association with motivation and cognitive engagement in online learning. Presented at the annual conference of *the Association for Educational Communications and Technology* (AECT). Orlando, FL.

13. Jiang, Z., Xu, Z., **Pan**, **Z**., He, J., & Xie, K. (2023, October). Exploring the role of artificial intelligence in facilitating writing assessment in second language learning. Presented at the annual conference of *the Association for Educational Communications and Technology* (AECT). Orlando, FL.

14. Shao, P., Cai, Y., **Pan**, **Z**., Song, H., & Liu, M. (2023, April). Exploring the effects of learning analytics dashboards on learning outcomes: A meta-analysis. Presented at the annual conference of *American Educational Research Association* (AERA). Chicago, IL.

15. Xie, K., Jiang, Z., **Pan**, **Z**., Men, Q., & He, J. (2023, April). Examining learning engagement through sequential pattern mining. Presented at the annual conference of *American Educational Research Association* (AERA). Chicago, IL.

16. **Pan**, **Z**., Jiang, Z., Men, Q., He, J., & Xie, K. (2022, October). A two-level cluster analysis that integrates fine-grained event-based sequences with learner-based behavioral patterns. Presented at the annual conference of *the Association for Educational Communications and Technology* (AECT). Las Vegas, NV.

17. **Pan**, **Z**., Han, S., Cai, Y., Shao, P., & Liu, M. (2022, April). The role of a learning analytics scaffolding system in middle school science problem-based learning activities. Presented at the annual conference of *American Educational Research Association* (AERA). San Diego, CA.

18. Liu, M., **Pan**, **Z**., Cai, Y., Shao, P., & Han, S. (2022, April). The effect of multimedia-enriched problem-based learning on socioeconomically disadvantaged middle school students' science learning. Presented at the annual conference of *American Educational Research Association* (AERA). San Diego, CA.

19. Han, S., Liu, M., **Pan**, **Z**., Cai, Y., & Shao, P. (2022, April). Making chatbots more inclusive: Addressing challenges of non-native English speakers with new technology in MOOCs. Presented at the annual conference of *American Educational Research Association* (AERA). San Diego, CA.

20. Cai, Y., & **Pan**, **Z**. (2022, April). The impact of multimodal communication on learners' experience in a synchronous online environment. Presented at the annual conference of *American Educational Research Association* (AERA). San Diego, CA.

21. **Pan**, **Z**., & Liu, M. (2022, March). The effects of learning analytics hint system in supporting students' problem-solving. Presented at 12th International Conference on *Learning Analytics & Knowledge* (LAK). (Online).

22. Han, S., Shao, P., Cai, Y., Liu, M., & **Pan**, **Z**. (2021, November). The current landscape of research and practice on visualizations and dashboards for learning analytics. Presented at the annual conference of *the Association for Educational Communications and Technology* (AECT). Chicago, IL.

23. **Pan**, **Z**., Li, C., Zou, W., & Liu, M. (2021, April). The development of an automatic text classifier enhanced dashboard in supporting teacher's facilitation of virtual problem-based learning activities. Presented at the annual conference of *American Educational Research Association* (AERA). (Online).

24. Han, S., **Pan**, **Z**., & Liu, M. (2021, April). Accessibility and customization in online learning. Presented at the annual conference of *American Educational Research Association* (AERA). (Online).

25. Liu, M., Li, C., & **Pan**, **Z**. (2021, April). Using learning analytics to understand how to design effective digital educational games. Presented at the annual conference of *American Educational Research Association* (AERA). (Online).

26. Zou, W., **Pan**, **Z**., Li, C., & Liu, M. (2021, January). Does social presence play a role in learners' positions in MOOC learner networks? A machine learning approach to analyze social presence in discussion forums. Presented at the International Conference on Quantitative Ethnography (ICQE). (Online).

27. **Pan**, **Z**., Li, C., & Liu, M. (2020, August). Learning analytics dashboard for problem-based learning. Presented at annual ACM Conference on Learning@Scale (L@S). (Online).

28. **Pan**, **Z**., & Liu, M. (2020, April). Problem-solving along the way. Paper accepted to the annual conference of *American Educational Research Association* (AERA). San Francisco, CA. (Conference Canceled).

29. **Pan**, **Z**., López, M., & Liu, M. (2020, April). The impact of integrating augmented reality in pre-kindergarten classrooms. Paper accepted to the annual conference of *American Educational Research Association* (AERA). San Francisco, CA. (Conference Canceled).

30. Liu, M., Shi, Y., **Pan**, **Z**., Li, C., Pan, X., & López, M. (2020, April). What motivates middle school teachers to adopt a technology-enriched problem-based learning program in their classrooms. Paper accepted to the annual conference of *American Educational Research Association* (AERA). San Francisco, CA. (Conference Canceled).

31. Liu, M., Zou, W., Li, C., Shi, Y., **Pan**, **Z**., & Pan, X. (2020, April). Examining relationships between MOOC participants' usage data and their profiles through learning analytics. Paper accepted to the annual conference of *American Educational Research Association* (AERA). San Francisco, CA. (Conference Canceled).

32. Ma, Y., & **Pan**, **Z**. (2019, April). Kiddy science with technology--an application of TTIPP (Turn-around Technology Integration Pedagogy Planning) model. Presented at the annual conference of *Texas State Educational Technology Conference* (EdTech). San Marcos, TX.

33. Liu, M., Zou, W., & **Pan**, **Z**. (2019, April). Understanding the behavioral patterns of learners with different levels of prior knowledge in an adaptive learning system. Presented at the annual conference of *American Educational Research Association* (AERA). Toronto, ON, Canada.

34. Won, H., Jones, I., **Pan**, **Z**., You, H., & Puckett, K (2019, April). Teacher's educational beliefs in shaping instructional practices for pre-K's STEM learning. Presented at the annual conference of *American Educational Research Association* (AERA). Toronto, ON, Canada.

35. Liu, M., Zou, W., Shi, Y., **Pan**, **Z**., & Li, C (2019, April). What do participants think of today's MOOCs -- an updated look at the benefits and challenges of MOOCs designed for working professionals. Presented at the annual conference of *American Educational Research Association* (AERA). Toronto, ON, Canada.

36. Liu, M., Liu**, S.**, **Pan**, **Z**., Zou, W., & Li, C. (2019, March). Examining science learning by at-risk middle school students in a multimedia-enriched problem-based learning environment. Presented at *9th International Conference on Learning Analytics & Knowledge* (LAK). Tempe, AZ.

37. Li, C., & **Pan**, **Z**. (2018, October). A machine learning incorporated qualitative data analysis method. Presented at the annual conference of *the Association for Educational Communications and Technology* (AECT). Kansas City, MO.

38. Liu, M., Liu**, S.**, **Pan**, **Z**., & Zou, W. (2018, October). Promoting self-efficacy and science learning for all middle school students using a technology-enhanced problem-based environment. Presented at the annual conference of *the Association for Educational Communications and Technology* (AECT). Kansas City, MO.

39. Won, H., **Pan**, **Z**., & Lee, S. (2018, June). Ramp activity for young children: rethinking its instructional practices. Presented at *National Association of Early Childhood Teacher Educators* (NAECTE). Austin, TX.

40. Liu, M., Kang**, J.**, Zou, W., Lee, H., & **Pan**, **Z**. (2018, April). Using data to understand how to better design adaptive learning. Presented at the annual conference of *American Educational Research Association* (AERA). New York, NY.

41. Liu, M., Kang, J., **Pan**, **Z**., Zou, W., & Lee, H. (2017, October). Exploring data visualization as an emerging analytic technique. Presented at *World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* (E-Learn). Vancouver, BC, Canada.

42. Liu, M., **Pan, Z**., & Lee, H. (2017, June). Using iPads in instruction: a case study. Presented at the annual conference of *World Conference on Educational Media and Technology* (EdMedia). Washington DC.

Practitioner Conference Presentations

1. **Pan**, **Z**. (2024, August). The Development and Implementation of an AI Agent in Supporting High School Math. Presented at the annual conference of the *Education Community Summit*. Whitehall, PA.

2. Papadimitriou, A., & **Pan, Z**. (2024, April). Empowering tomorrow's leaders: Integrating AI in experiential and research projects for reflective and responsible leadership development. Presented at the *38th Annual Mid-Atlantic Organizational Behavior Teaching Conference* (MOBTC). Philadelphia, PA.

3. **Pan**, **Z**. (2023, February). The Impacts of Gamification on Elementary Math. Presented at the *Pennsylvania Educational Technology Expo and Conference* (PETE&C). Pocono Manor, PA.

TEACHING AND RESEARCH ADVISING

Courses Taught

- TLT 460 Advanced Multimedia Programming and Development
- TLT 462 Data Visualization
- TLT 465 Design Thinking for Learning

Courses Designed/Assisted at University of Texas at Austin (Feb 2017—May 2021)

Graduate level:
- EDC S380R Educational Research & Design
- EDC 385G Design and Strategies for New Media
- EDC 385G Interactive Multimedia Design and Production
- EDC 390T Instructional Systems Design

Undergraduate level:
- ALD 328 Applied Human Learning
- UGS 302 Live, Play, Communicate, and Learn with Digital Media Technologies

SERVICE

Institutional Service

- Member of AI Community of Practice at the Center for Innovation in Teaching & Learning, Oct 2023—Present.
- Member of Institute for Data, Intelligent Systems, and Computation (I-DISC), Jan 2023 –Present.
- Served as penal discussant for Generative Artificial Intelligence in Education, Feb 2023.
- Served as program evaluator for P3 program at College of Engineering, Sep 2022 –Present.
  Provided annual evaluation reports by interviewing doctoral students and industrial mentors who participated in the P3, presented report at P3 program semester convening.
  Conducted interview with students, faculties and industry partners,
  Designed survey for faculty perception about doctorate mentorship.
- Representatives to College of Arts and Sciences faculty meetings, Aug 2022 –May 2023.
  Provided consultation to faculty members from the College of Arts and Sciences regarding curriculum design, certificate development, and research support.
- Representatives to College of Business faculty meetings, Aug 2023 –Present.
  Provided consultation to faculty members from the College of Arts and Sciences regarding curriculum design, certificate development, and research support.

Departmental and Program Service

- Committee for Stout Dissertation Award.
- Committee for the COE Graduate Student Leadership and Service Award.
- Development of academic certificate programs.
  Involved in the initial planning, design and development of Game-Based Learning and Learner Analytics certificate programs.
- Academic Advisor to Teaching, Learning and Technology Program, Aug 2022 – Present.
  Provided academic advising and guidance to eleven graduate students in this program, which included meeting with them for curriculum plan, answering questions about courses selections, and holding a meeting to guide students plan for future academic and career plans.
- Committee of College of Education Website Redesign Project.
  Participated in bi-weekly usability testing meetings with the design team, contributing insights on user experience to enhance the College of Education website redesign.

Professional Service

- Newsletter Editor, *Association for Educational Communications and Technology* (AECT) Nov 2023—Present.
- Member, *American Psychological Association* (APA) May 2023—Present.
- Member, *Association for Educational Communications and Technology* (AECT) Oct 2018—Present.
- Member, *Association for Computing Machinery* (ACM) Mar 2018—Present.
- Member, *American Educational Research Association* (AERA) Feb 2017—Present.

Community Service

- Speaker and panelist to School Study Council, Feb 2024.
  Presented school-based studies about the intersections of innovative pedagogies and emerging technologies to board members from nine different school districts.
- Judge of Middle school industrial education video contest, Mar 2023; Mar 2024.
  Evaluated the videos created by 33 different middle schools in the Lehigh Valley with the theme of "What's So Cool About Manufacturing?".

CERTIFICATIONS

- Certification in Middle School (6-8) Science and Social Study. Georgia, United States.
- Certification in Chinese Language Art (1-12). People's Republic of China.

COMPUTER AND PROGRAMMING SKILLS

- **Authoring/UX Design Tools:** Adobe Captivate & XD, Articulate Rise & Storyline, Axure, Figma, Sketch, Uizard.

- **Database:** MySQL.
- **Data Visualization Tools**: ArcGIS, Gephi, Google/Looker Data Studio, Power BI, Tableau.
- **Design Software/Applications:** Adobe Illustrator, Audacity, Blender, GIMP, Unity 3D.
- **Languages/Scripts:** Python**.**
- **Statistical Software:** R, SAS, SPSS.