



Nam Ju Kim, Ph.D.

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College of Educational Sciences
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Education

Ph.D. Instructional Technology and Learning Sciences, Utah State University, Logan, UT	2012.8-2017.4
M.A. Instructional Technology, Yonsei University, S. Korea	2005.3-2007.8
B.A. Korean Language & Literature/Education (Dual Major), Yonsei University, S. Korea	1998.3-2005.2

Experience

Academic

▪ Associate Professor, Department of Education, Yonsei University, S. Korea	2023.8-Current
▪ Program Chair, Educational Technology Program, Graduate School of Education	2024.3-Current
▪ Associate Director, Institute for Educational Research	2024.3-Current
▪ Associate Professor (Tenured), Department of Teaching and Learning, University of Miami	2023.6-2023.7
▪ Assistant Professor, Department of Teaching and Learning, University of Miami	2017.8-2023.5
▪ Director, Applied Learning Sciences program, University of Miami	2021.1-2023.7

Research

Research Interests

- STEM Education/Learning Sciences
- Design for Learner-Centered Instructional Model/Online Learning Environment
- Artificial Intelligence in Education
- Educational Technology- Game, Robots, Virtual Reality/Augmented Reality/Mixed Reality, Computer-Based Scaffolding
- Big Data Mining

Peer-reviewed Journal Articles

Students and Advisees' names are underlined.

Giancaspro, J., Arboleda, D., Kim, N. J., Chin, S., Britton, J., & Secada, W. (2024). An active learning approach to teach distributed forces using augmented reality with guided inquiry. *Computer Applications in Engineering Education*, 32(2), e22703.

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- Jeon, D., Bressel, E., & Kim, N. J. (2024). Ground reaction forces comparison of *Sauté* jump landing between dancers with different levels of proficiency. *Journal of Dance Education*, 24(1), 35-40
- Boa sorte, P., & Kim, N. J. (2023). Integrating augmented reality and problem-based learning into English language teaching through instructional design. *Revista Tempos e Espaços em Educação*, 16(35), e19073.
- Kim, N. J., & Kim, M. K. (2022) Teacher's perceptions of using an artificial intelligence-based educational tool for scientific writing. *Frontiers in Education*, 7, 755914.
- Kim, M. K., & Kim, N. J., & Heidari, Ali. (2022). Learner experience in artificial intelligence-scaffolded argumentation, *Assessment and Evaluation in Higher Education*, 47(8), 1301-1316.
- Kim, N. J., Vicentini, C., & Belland, B. R. (2022). Influence of scaffolding on information literacy and argumentation skills in virtual field trips and problem-based learning for scientific problem-solving, *International Journal of Science and Mathematics Education*, 20(2), 215-236.
- Ran, H., Kim, N. J., & Secada, W. (2022). Technology Roles: Meta-Analysis on Effects of Technology on Students' Mathematics Achievement in K-12 Classrooms. *Journal of Computer-Assisted Learning*, 38(1), 258-284.
- Kim, N. J., Park, J., Lee, S., & Timpilis, D. (2021). Impact of prior knowledge, learning style, and problem nature on students performance in a flipped engineering mathematics class, *International Journal of Engineering Education*, 37(4), 960-974.
- Kim, N. J. & Kim, S. W. (2021). A Conceptual Study for Utilizing IPTV as an Aid for Co-Creation of Value in Future Education. *Journal of the Korea Society of Computer and Information*, 26(10), 61-76.
- Giancaspro, J. & Kim, N. J. (2021). Student-Parent Teams: A 10-year retrospective study of an undergraduate research experience, *International Journal of Continuing Engineering Education and Life-Long Learning*, 31(4), 419-438.
- Belland, B. R., & Kim, N. J. (2021). Predicting high school students' argumentation skill using information literacy and trace data, *The Journal of Educational Research*, 114(3), 211-221.
- Kim, N. J., Belland, B. R., Lefler, M., Andreasen, L., Walker, A., & Axelrod, D. (2020) Comparison of computer-based scaffolding targeting individuals versus groups in complex problem solving: Meta-analysis. *Educational Psychology Review*, 32, 415-461.
- **ISI indexed; 2021 Impact Factor: 8.240 Ranked #1 out of 61 in Psychology, Educational**
 - **The Outstanding Research Paper Award (2021), SIG Design and Technology, American Educational Research Association**
- Kolovou, M. & Kim, N. J. (2020). Effects of Implementing an integrative Drama-Inquiry Learning Model in a Science Classroom, *The Journal of Educational Research*, 113(3), 191-203.
- Belland, B., Weiss, D. M., & Kim, N. J., (2020). High school students' agentic responses to modeling during problem-based learning, *The Journal of Educational Research*, 113(5), 374-383.
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- Kim, N. J., Belland, B. R., & Axelrod, D. (2019). Scaffolding for optimal challenge in K-12 problem-based learning. *Interdisciplinary Journal of Problem-based Learning*, 13(1), 1-23.
- Belland, B. R., Gu, J., Kim, N. J., Piland, J., & Weiss, D. M. (2019). Exploring epistemological approaches and beliefs of middle school students in problem-based learning. *Journal of Educational Research*, 112(6), 643-655.
- Belland, B. R., Weiss, D. M., Kim, N. J., Piland, J., & Gu, J. (2019). An examination of credit recovery students' use of computer-based scaffolding in a problem-based, scientific inquiry unit. *International Journal of Science and Mathematics Education*, 17(2), 273-293.
- Kim, N. J., Belland, B. R., & Walker, A. E. (2018). Effectiveness of computer-based scaffolding in the context of problem-based learning for STEM education: Bayesian meta-analysis. *Educational Psychology Review*, 30(2), 397-429.
- ***ISI indexed; 2021 Impact Factor: 8.240 Ranked #1 out of 61 in Psychology, Educational.***
- Kim, K., Kim, N. J., Seo, J., & Kim, S. W. (2018). Utilization of computer pointing game for improving visual perception ability of children with severe intellectual disability. *Journal of the Korea Society of Computer and Information*, 23(4), 41-49.
- Belland, B. R., Walker, A. E., & Kim, N. J. (2017). Bayesian network meta-analysis to synthesize the influence of contexts of scaffolding use on cognitive outcomes in STEM education. *Review of Educational Research*, 87(6), 1042-1081.
- ***ISI indexed; 2021 Impact Factor: 13.551 Ranked #1 out of 267 in Education & Educational Research.***
 - ***The Outstanding Journal Article Award (2018), Research and Theory Division, Association for Educational Communications & Technology.***
- Belland, B. R., Walker, A. E., Kim, N. J., & Lefler, M. (2017). Synthesizing results from empirical research on computer-based scaffolding in STEM education: A meta-analysis. *Review of Educational Research*, 87(2), 309-344.
- ***ISI indexed; 2021 Impact Factor: 13.551 Ranked #1 out of 267 in Education & Educational Research.***
 - ***The Outstanding Journal Article Award (2017), Research and Theory Division, Association for Educational Communications & Technology***
- Belland, B. R., Gu, J., Kim, N. J., & Turner, D. J. (2016). An ethnomethodological perspective on how middle school students addressed a water quality problem. *Educational Technology Research & Development*, 64, 1135–1161.
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- Lee, J. E., Recker, M., Choi, H., Hong, W. J., Kim, N. J., Lee, K., ... & Recker, M. (2016). Applying data mining methods to understand user interactions within learning management systems: Approaches and lessons learned. *Journal of Educational Technology Development and Exchange*, 8(2), 99-116.
- Ke, F., Im, T., Xue, X., Xu, X., Kim, N. J., & Lee, S. (2015). The experience of adult facilitators in a virtual-reality-based social interaction program for children with autism: A phenomenological inquiry. *Journal of Special Education*. 48(4), 290-300
- Kim, Y., Smith, D., Kim, N. J., & Chen, T. (2014). Playing with a robot to learn English vocabulary. *Korean-American Educational Researchers Association Research Forum*, 1(2), 3-8.
- (Master's Thesis) Suh, S., Kim, S. W., & Kim, N. J. (2010). Effectiveness of MMORPG-based instruction in elementary English education in Korea. *Journal of Computer Assisted Learning*, 26(5), 370-378.

Manuscripts Under Review

- Kim, N. J. (Under review). Comparison of the effects of individual learning versus collaborative learning in online English learning platform through Bayesian one-way ANOVA. Manuscript submitted for publication to *Educational Technology and Society*
- Kim, N. J., & Kim, M. K. (Under review). Development of the artificial intelligence-augmented motivation indicator (AIMI) system through large-scale implementation in K-12 classes. Manuscript submitted for publication to *Computers and Education*
- Belland, B. R., Kim, N. J., Gu, J., Weiss, M., & Piland, J. (Under review). Exploring relationships among middle school students' epistemic beliefs, science interest, and scaffolding. Manuscript submitted for publication to *Educational Technology Research and Development*.
- Park, J. H., Kim, N. J., Lee, S., & Kim, H. S. (Under review) Analyzing collaborative learning in a flipped classroom in higher education through the lens of social modes of regulation and epistemic network analysis. Manuscript submitted for publication to *Journal of Learning Sciences*.
- Kim, M. K., & Kim, N. J., Kasli, M., & Heidari, Ali. (Under review). Revisiting a Three-Stage Learning Progression Model Through a Technology-Based Formative Assessment System. Manuscript submitted for publication to *Contemporary Educational Psychology*.

In preparation

- Kim, N. J., Weiss, D., Chin, S., & Yang, L. (in preparation). Predictive Modeling of Students' Final English Learning Test Scores with a Deep Learning Approach
- Yang, L., Kim, N.J., Chin, S., & Weiss, D. (in preparation). The impact of group awareness for online language learning environment
- Yang, L., Kim, N.J., Chin, S., & Weiss, D. (in preparation). The Interplay of Different English Proficiency Levels and Gamification in Online English Learning Environment
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Chin, S., Kim, N. J., Weiss, D., & Yang, L. (in preparation). How is immersion experienced in 2D platform-based online learning environments?: the subjective experience of immersion in collaborative and individual online learning environments.

Weiss, D., Kim, N. J., Chin, S., & Yang, L. (in preparation). Use of Narrative in Situating English Language Learning - A qualitative study.

Conference Proceedings

Kim, M. K., Kim, N. J., Haddadian, G., & Heidari, A. (2023). A Test of Learning Progress Models Using an AI-Enabled Knowledge Representation System. In Proceedings of the 17th International Conference of the Learning Sciences-ICLS 2023, pp. 986-989. International Society of the Learning Sciences.

Yang, L. & Kim, N. J. (2023). The interplay of different English proficiency levels and gamification in online English learning environment. Proceeding of the 2022 *Annual Convention of the Association for Educational Communication and Technology*. Las Vegas, NV: AECT.

Kim, N. J., Belland, B. R., & Kim, Y. (2017). Data mining meta-analysis coding to develop smart learning systems that dynamically customize scaffolding. *Proceeding of the 2017 Annual Meeting of Americas Conference on Information Systems (AMCIS)*.

Kim, Y., Belland, B. R., & Kim, N. J. (2017). Profiling meta-analysis student clusters with scaffolding characteristics. *Proceeding of the Ninth Annual Post-ICIS KrAIS Research Workshop*.

Belland, B. R., Kim, N. J., Weiss, D. M., & Piland, J. (2017). High school students' collaboration and engagement with scaffolding and information as predictors of argument quality during problem-based learning. *Proceedings of the 2017 Annual Meeting of Computer-supported Collaborative Learning (CSCL)*.

Kim, N. J., Belland, B. R., & Walker, A. E. (2016). Effectiveness of computer-based scaffolding for K-adult students in the context of problem-centered instructional models related to STEM education: Bayesian meta-analysis. *Proceedings of selected research and development presentations at the 2015 Annual Convention of the Association for Educational Communication and Technology* (vol. 1, pp. 109-116). Indianapolis, IN: AECT.

Belland, B. R., Walker, A. E. Kim, N. J., & Lefler, M. R. (2014). A preliminary meta-analysis on the influence of scaffolding characteristics and study and assessment quality on cognitive outcomes in STEM education. Proceeding of the Annual Meeting of the Cognitive Science Society (vol. 36. pp. 3180-3181). Quebec, Canada: COGSCI

Yuan, M., Kim, N. J., Drake, J. Smith, S., & Lee, V. R. (2014), Examining how students make sense of slow-motion video. *Proceedings of selected research and development presentations at the 2014 Annual Convention of International Society of the Learning Sciences* (pp. 1617-1618). Boulder, CO: ICLS

Book

Kim, N. J. (2024). EduTech, the ‘Future’ of Education. In Pak, S (Ed.). *Education for Tomorrow* (pp. 283-325). Pakyoungsa

Invited Presentations

Kim, N. J. (2023, April). Keynote Speaker: Can AI Recognize Our Emotion and Motivation While We Learn?, 2023 SEHD Research Symposium, University of Miami

Kim, N. J. (2022, June). Artificial Intelligence in Education, Department of Education, Yonsei University, South Korea

Kim, N. J. (2020, June). U.S. University’s Online Learning and AI-based Learning Support System, Center for Teaching and Learning, Sungkyunkwan University, South Korea.

Kim, N. J. (2019, April). Learner-centered scaffolding system. Edtech Café, Distance Learning Institute, University of Miami.

Kim, N. J. (2018, February). Can Artificial Intelligence solve the teacher workload problem? School of Education and Human Development Research Colloquium, University of Miami.

Refereed Presentations

Kim, M. K, Kim, N. J., Haddadian, G., & Heidari, A. (2023, June). Test of Learning Progress Models Using an AI-Enabled Knowledge Representation System. Paper presented at the 2023 Annual Meeting of International Conference of the Learning Sciences, Montreal, Canada.

Kim, N. J. (2023, April). Comparison of the Effects of Individual Learning versus Collaborative Learning in Online English Learning Platform. Paper presented at the 2023 Annual Meeting of the American Educational Research Association, Chicago, IL.

Kim, N. J., & Yang, L. (2022, October). AI as An Educational Tool from the Teacher’s Point of View. Paper presented at the 2022 Annual Meeting of the Association for Educational Communications and Technology, Las Vegas, NV.

Yang, L., & Kim, N. J. (2022, October). The Interplay of Different English Proficiency Levels and Gamification in Online English Learning Environment. Paper presented at the 2022 Annual Meeting of the Association for Educational Communications and Technology, Las Vegas, NV.

Kim, N. J., & Kim, M. K. (2022, April). A Design Study of the Artificial Intelligence-Augmented Motivation Indicator System. Paper presented at the 2022 Annual Meeting of the American Educational Research Association, San Diego, CA.

- ***Runner-Up Best Research Paper Award, SIG Online Teaching and Learning, American Educational Research Association***
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- Kim, M. K., & Kim, N. J. (2022, June). Artificial Intelligence-based Motivation Indicator (AIMI) in Online Learning Environment. Paper presented at the 2022 International Conference on Computer Supported Collaborative Learning, Hiroshima, Japan.
- Kim, M. K., Kim, N. J., Heidari, A., & Kolovou, Maria. (2022, April). Revising a Three-Stage Learning Progression Model Through a Technology-Based Formative Assessment System. Paper presented at the 2022 Annual Meeting of the American Educational Research Association, San Diego, CA.
- Kim, N. J., & Kim, M. K. (2021, November). Artificial Intelligence-based Motivation Indicator (AIMI) in Online Learning Environment. Paper presented at the 2021 Annual Meeting of the Association for Educational Communications and Technology, Chicago, IL.
- Kim, M. K., Kim, N. J., & Vulupala, G. (2021, November). A Pilot Test: Artificial Intelligence- Scaffolded Expository Argumentation. Paper presented at the 2021 Annual Meeting of the Association for Educational Communications and Technology, Chicago, IL.
- Dinsdale, K., & Kim, N. J. (2021, November). Elementary School Teacher's Perception of Building Online Community Utilizing a Social and Emotional Curriculum. Paper presented at the 2021 Annual Meeting of the Association for Educational Communications and Technology, Chicago, IL.
- Kolovou, M., & Kim, N. J. (2021, November). Effects of an Integrative Drama-Inquiry Model on Attitudes toward Science. Paper presented at the 2021 Annual Meeting of the Association for Educational Communications and Technology, Chicago, IL
- Timpilis, D. & Kim, N. J. (2021, November). Nature of Science Through the High School Production of the Theatre Play “Life of Galileo,” by Bertolt Brecht. Paper presented at the 2021 Annual Meeting of the Association for Educational Communications and Technology, Chicago, IL
- Kolovou, M., & Kim, N. J. (2021, April). Incorporating embodied tools and principles to science learning environment: An integrative inquiry- and drama-based model. Paper accepted, but not presented at the 2021 Annual Meeting of the American Educational Research Association.
- Kim, N. J., Park, J. H., Lee, S. E., & Timpilis, D. (2021, April). The effects of flipped learning combined with different learning styles and problem types in an engineering mathematics course. Paper presented at the 2021 Annual Meeting of the American Educational Research Association.
- Ran, H., Kim, N. J., & Secada, W. (2021, April). Technology roles: A meta-analysis on effects of technology on students' mathematics achievement in K–12 classrooms. Paper presented at the 2021 Annual Meeting of the American Educational Research Association.
- Kim, N. J., Timpilis, D., & Vincentini, C. (accepted, canceled due to Covid-19). Artificial Intelligence-based Learner’s Motivation Detection in Problem-Based Learning (PBL). Paper accepted at 2020 Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL.
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- Vicentini, C., Kim, N. J., & Boa Sorte, P. (accepted, canceled due to Covid-19). Using Artificial Intelligence Scaffolding to Support Doctoral Students' Dissertation Writing. Paper accepted at 2020 Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL.
- Kolovou, M., & Kim, N. J., (accepted, canceled due to Covid-19). Integrated Drama-Inquiry Learning Model in Science Education. Paper accepted at 2020 Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL.
- Kolovou, M., & Kim, N. J., (accepted, canceled due to Covid-19). Effects of combining Inquiry-based learning with Drama-Based Techniques on Motivation. Paper accepted at the American Educational Research Association 2020 Annual Convention, San Francisco, CA.
- Kim, N. J., & Vicentini, C. R. (2019, October). Educational use of Internet Protocol Television. Paper presented at the 2019 Annual Meeting of the Association for Educational Communications and Technology, Las Vegas, NV.
- Vicentini, C. R., & Kim, N. J. (2019, October). English as a foreign language tutoring online: Analyzing metacognitive skills and instructional scaffolding. Paper presented at the 2019 Annual Meeting of the Association for Educational Communications and Technology, Las Vegas, NV.
- Kim, N. J., Walker, A., Belland, B., & Lefler, M. (2019, April). An informed synthesis of experimental and quasi-experimental computer-based scaffolding research. Paper presented at the American Educational Research Association 2019 Annual Convention, Toronto, Canada.
- Kim, N. J. (2019, April). Improving high school students' information literacy and argumentation skills through scaffolding in problem-based learning. Paper presented at the American Educational Research Association 2019 Annual Convention, Toronto, Canada.
- Belland, B. R., Kim, Y., & Kim, N. J. (2018, July). Data-driven design of computer-based scaffolding through the use of learning analytics. Paper presented at the 2018 International Symposium on Teaching, Education, and Learning, Seoul, Korea.
- Kim, N. J., & Jeon, D. (2018, April). Effectiveness of computer-based scaffolding in the context of Problem-based Learning: Bayesian Meta-analysis. Paper presented at the American Educational Research Association 2018 Annual Convention, New York City, NY.
- Kim, N. J., Belland, B. R., & Kim, Y. (2018, April). Clustering the relationship between scaffolding and students' characteristics through data mining. Paper presented at the American Educational Research Association 2018 Annual Convention, New York City, NY.
- Kim, Y., Belland, B. R., & Kim, N. J. (2017, December). Profiling meta-analysis students clusters with scaffolding characteristics. Paper presented at the Ninth Annual Post-ICIS KRAIS Research Workshop 2017, Seoul, South Korea.
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- Kim, N. J., Belland, B. R., & Kim, Y. (2017, August). Data mining meta-analysis coding to develop smart learning systems that dynamically customize scaffolding. Paper presented at the Americas Conference on Information Systems 2017 Annual Convention, Boston, MA.
- Belland, B. R., Kim, N. J., Weiss, D., & Piland, J. (2017, June). High school students' collaboration and engagement with scaffolding and information as predictors of argumentation skills during problem-based learning. Paper presented at the 12th International Conference on Computer Supported Collaborative Learning, Philadelphia, PA.
- Belland, B. R., Kim, N. J., Weiss, D. M., & Piland, J. (2017, May). Impact of using a generic argumentation scaffold in two successive PBL units on different topics. Paper presented at the 2017 Annual Meeting of the American Educational Research Association, San Antonio, TX.
- Kim, N. J., Belland, B. R., Walker, A., & Piland, J. (2017, April). Computer-based scaffolding in STEM education across countries and the U.S. states: Meta-analysis and cluster analysis. Paper presented at the American Educational Research Association 2017 Annual Convention, San Antonio, TX.
- Piland, J., Kim, N. J., Belland, B. R., & Walker, A. (2017, April). Effects of computer-based scaffolding in problem-centered approach for engineering education. Paper presented at the American Educational Research Association 2017 Annual Convention, San Antonio, TX.
- Walker, A. Belland, B. R., Kim, N. J. & Lefler, M. (2017, April). Examining computer based scaffolding research quality through a risk of bias lens. Paper presented at the American Educational Research Association 2017 Annual Convention, San Antonio, TX.
- Belland, B. R., Kim, N. J., Weiss, D., Gu, J., & Piland, J. (2017, April). Impact of using a generic argumentation scaffold in two successive PBL units on different topics. Paper presented at the American Educational Research Association 2017 Annual Convention, San Antonio, TX.
- Belland, B. R., Walker, A. E., Kim, N. J., & Piland, J. (2016, December). New directions for development of and research on computer-based scaffolding emanating from meta-analyses of scaffolding. Paper presented at the 2016 Asia History, Philosophy, and Science Teaching Group (HPST) Conference, Busan, South Korea.
- Kim, N. J. (2016, October). Bayesian meta-analysis of effects on several forms of computer-based scaffolding in problem-based learning. Paper presented at the 2016 Meeting of the Association for Educational Communications and Technology, Las Vegas, NV.
- Kim, N. J., Belland, B. R., & Walker, A. E. (2016, October). Suggestion of machine learning systems for computer-based scaffolding. Paper presented at 2016 Meeting of the Association for Educational Communications and Technology, Las Vegas, NV.
- Kim, N. J. (2016, April). Computer-based scaffolding systems using Artificial Intelligence. Poster session at the 2016 Student Research Symposium, Utah State University, Logan, UT.
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- Kim, N. J. (2016, April). Enhancing high school students' *information literacy* through computer-based scaffolding in problem-based learning for science learning. Paper presented at the American Educational Research Association 2016 Annual Convention, Washington, DC.
- Belland, B. R., Kim, N. J., Walker, A. E., Lefler, M., Whitney, B. M., & Andreasen, L. (2016, April). Using network meta-analysis to synthesize research on computer-based scaffolding in STEM education. Paper presented at the American Educational Research Association 2016 Annual Convention, Washington, DC.
- Andreasen, L., Kim, N. J., Lefler, M., Belland, B. R., & Walker, A. E. (2016, April). Meta-analysis comparison of effectiveness of computer-based scaffolding in complex problem solving: Individual vs group delivery. Paper presented at the American Educational Research Association 2016 Annual Convention, Washington, DC.
- Choi, H., Hong, W. J., Kim, N. J., Lee, J. E., Lee, K., Lefler, M., Louviere, J., Recker, M., M., & Walker, A. E. (2016, April). Applying data mining methods to understand user interactions within learning management systems: Approaches and lessons learned. Round table session at the American Educational Research Association 2016 Annual Convention, Washington, DC.
- Belland, B. R., Gu, J., Weiss, M., & Kim, N. J. (2016, April). An examination of credit recovery students' use of computer-based scaffolding in a problem-based, scientific inquiry unit. Paper presented at the American Educational Research Association 2016 Annual Convention, Washington, DC.
- Belland, B. R., Walker, A. E. Kim, N. J., & Lefler, M. (2015, November). Meta-analysis results detailing the effectiveness of computer-based scaffolding in problem-centered STEM curricula: Suggestions for classroom and school application. Teacher Education Council Featured TALK: Webinar at the Society for Information Technology and Teacher Education.
- Kim, N. J. & Belland, B. R. (2015, November). Effectiveness of computer-based scaffolding in problem-centered instructional models for STEM education: Bayesian meta-analysis. Paper presented at the 2015 Meeting of the Association for Educational Communications and Technology, Indianapolis, IN.
- Belland, B. R., Gu, J., Kim, N. J., & Weiss, M. (2015, April). The relationship between problem-based learning, epistemic beliefs, and argumentation in middle school science. Paper presented at the American Educational Research Association Annual Convention, Chicago, IL.
- Belland, B. R., Walker, A., Kim, N. J., & Lefler, M. (2015, April). Synthesizing results from empirical research on computer-based scaffolding in STEM education: A meta-analysis. Paper presented at the American Educational Research Association 2015 Annual Convention, Chicago, IL.
- Gu, J., Belland, B. R., Kim, N. J., & Weiss, M. (2015, April). Middle school students' science interest and epistemic beliefs in a technology-enhanced, problem-based, scientific inquiry unit. Paper presented at the American Educational Research Association Annual Convention, Chicago, IL.
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- Kim, N. J. & Belland, B. R. (2014, November). Optimal challenge in problem-based learning. Paper presented at the Association for Educational Communications and Technology Annual Convention, Jacksonville, FL.
- Lefler, M., Belland, B., Walker, A., & Kim, N. J. (2014, November). From the ground up: A comprehensive theoretical framework of computer-based scaffolding. Paper presented at the Association for Educational Communication and Technology Annual Convention, Jacksonville, FL.
- Belland, B. R., Walker, A. E., Kim, N. J., & Lefler, M. R. (2014, July). A preliminary meta-analysis on the influence of scaffolding characteristics and study and assessment quality on cognitive outcomes in STEM education. Poster presented at the 2014 Annual Meeting of the Cognitive Science Society, Québec City, Québec, Canada.
- Yuan, M., Kim, N. J., Drake, J., Smith, S., & Lee, V. (2014, June). Examining how students make sense of slow-motion video. Paper presented at the 2014 meeting of the International Conference of the Learning Sciences, Boulder, CO.
- Belland, B., Gu, J., Turner, J., Kim, N. J., & Weiss, M. (2014, April). How middle school students investigated water quality, evaluated evidence, and constructed arguments: An ethnomethodological study. Paper presented at the American Educational Research Association 2014 Annual Convention, Philadelphia, PA.
- Ke, F., Im, T., Xue, X., Xu, X., Lee, S., & Kim, N. J. (2013, April). Facilitating social interactions in a virtual world for children with autism. Paper presented at the American Educational Research Association 2013 Annual Convention, San Francisco, CA.
- Kim, Y., Gulz, A., Silvervarg, Y., Haake, M., Chen, T., & Kim, N. J. (2013, April). The effect of the visual gender of an embodied agent: A cross-cultural comparison. Paper presented at the American Educational Research Association 2013 Annual Convention, San Francisco, CA.
- Kim, S. W., Kim, N. J., & Lee, M. G. (2006, October). Effects of educational games. Paper presented at the International Conference of the Institute for Educational Research, Yonsei University, Seoul, S. Korea.

Grants

Current (*n* = 8)

▪ Sole Principal Investigator (Internal Fund)

Changes in High School Girls' Perceptions of Science and Engineering Careers through VR Education

-Yonsei University, Future-Leading Research Initiative

-Budget: 30,000,000 won

-Funding Period: Oct 2023 ~ Current

▪ Sole Principal Investigator (Extramural Fund)

Effectiveness of Open English Program on Student's English skills and Suggestions for Improvement through Artificial Intelligence and Big Data Analysis

-*Open English Inc.*

-Budget: \$125,000

-Funding Period: Sep 2021 ~ Current

▪ **Sole Principal Investigator (Extramural Fund)**

Artificial Intelligence-based Motivation Indicator Considering Different Race/Ethnicity, Gender, Grade (Phase I & II)

-*Sherman Fairchild Foundation*

-Budget: \$200,000

-Funding Period: Jul 2020 ~ Current

▪ **Sole Principal Investigator (Intramural Fund)**

Artificial Intelligent-Powered Learning Support System.

-*Donor Gift*, School of Education and Human Development, University of Miami

-Budget: \$50,000

-Funding Period: Jan 2018 ~ Current

▪ **Principal Investigator (Intramural Fund)**

The Use of Advanced Augmented Reality in Engineering Mechanics Education

-*Provost Research Award Grant*, University of Miami

-Co-PIs: Drs. Walter Secada (UM SEHD), James Giancaspro (UM COE)

-Budget: \$20,000

-Funding Period: June 2020 ~ Current (no-cost extension due to COVID-19)

▪ **Co-Principal Investigator (Extramural Fund)**

Improving Student Learning Using a Three-Dimensional Immersive Learning Environment (Mixed Reality) for Foundational Engineering Concepts

-*National Science Foundation*, Division of Undergraduate Education, Award Number 2141984

-Budget: \$299,638

-PI: Dr. James Giancaspro (UM COE), Co-PIs: Drs. Diana Arboleda (UM COE) and Walter Secada (UM SEHD)

-Funding Period: December 2021 ~ Current

▪ **Co-Principal Investigator (Intramural Fund)**

Development of a Cost-effective, Artificial Intelligence-assisted Diagnostic Tool for Parkinson's Disease Patients in the Black Communities

-*SEHD Pilot Funding for Interdisciplinary Collaboration (EPIC)*, University of Miami

-Budget: \$30,000

-PI: Moataz Eltoukhy (UM SEHD, Kinesiology), Co-PIs: Drs. Joseph Signorile (UM SEHD, Kinesiology) and Kysha Harriell (UM SEHD, Kinesiology)

-Funding Period: August 2022 (expected) ~

Completed ($n = 2$)

▪ **Co-Principal Investigator (Extramural Fund)**

Revealing the Anatomy of Engineering Structures Using Augmented Reality

-*Magic Leap, Inc*

-PI: Dr. James Giancaspro (UM COE), Co-PI: Dr. Diana Arboleda (UM COE).

-Budget: \$10,000

-Funding Period: Jan 2020 ~ August 2020

▪ **Co-Principal Investigator (Intramural Fund)**

Collaborative Research: Estimating the Socio-Economic Burden of Parkinson's Disease using Data-Driven Agent-based Modeling Approach.

-Internal Grant from the School of Education and Human Development, University of Miami

-PI: Dr. Moataz Eltoukhy (UM SEHD)

-Budget: \$15,000

-Funding Period: May 2019 ~ April 2020

Courses Taught

Yonsei University, Seoul, Korea

(2023 – Current)

- EDU 2002 (undergraduate level, team teaching) – Education for Tomorrow (Format: Face-to-Face, Semester: Fall 2023, Spring 2024)
- EDU 2131 (undergraduate level) – Introduction to Instructional Technology (Format: Face-to-Face, Semester: Fall 2023)
- EDU 6003 (graduate level, team teaching) – Interdisciplinary Research Seminar in Educational Studies (Format: Face-to-Face, Semester: Fall 2023, Spring 2024)
- EDU 7131 (graduate level) – Introduction to AI Convergence in Instructional Technology (Format: Face-to-Face, Semester: Fall 2023)
- SET 6675 (graduate level) – Seminar on Educational Technology (Format: Face-to-Face, Semester: Fall 2023)
- TTP 2004 (undergraduate level) – ED Methodology & Technology (Format: Face-to-Face, Semester: Fall 2023)
- EDU 2137 (undergraduate level) – Development of AI-Based Education Program (Format: Face-to-Face, Semester: Spring 2024)
- EDU 9105 (graduate level) – Advanced AI Convergence in Instructional Technology (Format: Face-to-Face, Semester: Spring 2024)
- SAE 6527 (graduate level) – AI Technologies for Education (Format: Face-to-Face, Semester: Spring 2024)
- SET 6608 (graduate level) - Introduction to AI-Powered Instructional Technology (Format: Face-to-Face, Semester: Spring 2024)
- YSG 6602 (graduate level, team teaching) – Introduction of 4th Industrial Revolution (Format: Face-to-Face, Semester: Spring 2024)

University of Miami, Coral Gables, FL

Department of Teaching and Learning (2017 - 2023)

- TAL 704/753 (graduate level) – Introduction to Learning Sciences (Format: Face-to-Face, Online, Semester: Spring 2018, 2019, 2020, 2021, 2023; Fall 2019, 2020, 2021, 2022; Summer 2020, 2021, 2022, 2023)
 - TAL 706 (graduate level) – Design for Formal Learning Environment (Format: Online, Semester: Spring 2020; Fall 2020), **2021 Nationwide Blackboard Exemplary Course Award, Blackboard Inc.**
 - TAL 772 (graduate level) - Instructional Design and Technology in STEM Education (Format: Face-to-Face, Semester: Fall, 2018)
 - TAL 790 (graduate level) – Advanced Topics in Education: Python, Machine Learning, and Artificial Intelligence (Format: Face-to-Face, Semester: Spring, 2019)
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- TAL 712 (graduate level) – Capstone Project Seminar (Format: Online, Semester: Spring 2021)

Utah State University, Logan, UT

Department of Instructional Technology & Learning Sciences (2012 – 2017)

- ITLS 6205 (graduate level)/5205 (undergraduate level) – Computer Application in Instruction & Teaching (Format: Online and Face-to-Face, Semester: Spring 2016); Topics include pedagogical approaches such as technology integration such as assessment (e.g., Qualtrics, Google forms, SurveyMonkey), Content Management (e.g., Canvas, Moodle, Wordpress), and Media Production (e.g., Photoshop, InDesign, Audacity, iMovie), Role: Instructor
- ITLS 6870 (graduate level) – Current Issues Seminar (Format: Online, Semester: Spring 2016); Topics include trends, definitions, types of scaffolding, and current controversies, Role: Teaching Assistant
- ITLS 6245 (graduate level)/5245 (undergraduate level) – Interactive Multi-Media Production (Format: Online and Face-to-Face, Semester: Fall 2015); Topics include the usage of advanced software to develop instructional tools such as UNITY (3D game development platform) and Adobe Flash, Role: Teaching Assistant
- ITLS 6530 (graduate level) – Design and Development Studio (Format: Face-to-Face, Semester: Spring 2013); Topics include the utilization of instructional design in various fields, Role: Teaching Assistant
- ITLS 6540 (graduate level) – Learning Theory (Format: Face-to-Face, Semester: Fall 2012); Topics include differences between the behaviorist, cognitivist, and sociocultural paradigms of learning, the application of those concepts to the design of learning environments, Role: Teaching Assistant

Yonsei University, South Korea

Department of Education

- EDU4126 (undergraduate level) – Educational Technology media (Format: Face-to-Face, Semester: Spring 2007); Topics include the utilization of computers, learning management systems, and computerized instructional tools, Role: Teaching Assistant

Research Supervision (Department of Teaching and Learning, University of Miami)

Chair, Ph.D. & Ed.D. Supervisory Committees (Completed, n = 28)

- Dr. Juan Torralba, Co-Chair: Dr. Wendy Cavendish
 - Dr. Jessica Buch
 - Dr. Saliha Nelson
 - Dr. Kimberly Dinsdale
 - Dr. Anthony Tyrkala
 - Dr. Seth Levine
 - Dr. Michelle Jordan
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- Dr. Donald Petersen
 - Dr. Florentino Realica Alger
 - Dr. Massia Bailey
 - Dr. Dina Berberkic
 - Dr. Melissa Christensen
 - Dr. Andres Figueroa
 - Dr. Thomas Hendrickson
 - Dr. Luis Herrera
 - Dr. Rachael Leffler
 - Dr. Robert Lenox
 - Dr. Jessica Martinez
 - Dr. Stephanie Morales
 - Dr. Dahlia Palmer Morris
 - Dr. Toyia Parker
 - Dr. Carolina Peticari
 - Dr. Natasha Polite
 - Dr. Kylan Robinson
 - Dr. Steven Schaller
 - Dr. Jason Spencer
 - Dr. Indira Sukhraj
 - Dr. John Carlo Tulinao

Dissertation Committee Member, Ph.D. & Ed.D. (Completed, n = 5)

- Dr. Ran Hua
- Dr. Jose Fernandez-Calvo
- Dr. Tierra Parker
- Dr. Yasdanee Valdes
- Dr. Guanhua Chen

Capstone Project Committee, Ed.D. (Completed) – Applied Learning Sciences Program (n = 11)

- Dr. Courtney Matthews
- Dr. Arthur Kosakowski
- Dr. Cristina Telepman
- Dr. Lisa Winer
- Dr. Matthew Jordan
- Dr. Kimberly Wicker
- Dr. McDonald Homer
- Dr. Stefan Wenk
- Dr. Martin Li David
- Dr. Brad Myers
- Dr. D’Jarius Orien Jones

Chair, M.S.Ed. Supervisory Committees (Completed) – Applied Learning Sciences Program (n = 1)

- Marsh, Trish

Advisor, Visiting Scholar (n = 1)

- Dr. Boa Sorte, Paulo. Associate Professor, the Federal University of Sergipe, Brazil (2019-2020)

Awards and Academic Honors

Provost's Award for Faculty Excellence and Impact (Finalist)	2023
- In the Category of "Early Career"	
- University of Miami	
The Outstanding Graduate Program Director Award (Finalist)	2023
- Graduate School, University of Miami	
2023 Spring Commencement Academic Banner Marshal	2023
- University of Miami	
Runner-Up Best Research Paper Award	2022
- " <i>A Design Study of the Artificial Intelligence Motivation Indicator System</i> "	
-SIG Online Teaching and Learning, <i>American Educational Research Association</i>	
2021 Fall Commencement Academic Banner Marshal	2021
- University of Miami	
Nationwide Blackboard Exemplary Course Award	2021
- <i>TAL 706: Design for Formal Learning Environment</i>	
- Blackboard Inc.	
The Outstanding Research Paper Award	2021
- " <i>Comparison of computer-based scaffolding targeting individuals versus groups in complex problem solving: Meta-analysis</i> "	
- SIG Design and Technology, <i>American Educational Research Association</i>	
The Outstanding Journal Article Award	2018
- " <i>Bayesian network meta-analysis to synthesize the influence of contexts of scaffolding use on cognitive outcomes in STEM education</i> "	
- Research and Theory Division, <i>Association for Educational Communications & Technology</i>	
The Outstanding Journal Article Award	2017
- "Synthesizing results from empirical research on computer-based scaffolding in STEM education: A meta-analysis"	
- Research and Theory Division, <i>Association for Educational Communications & Technology</i>	
Outstanding Graduate – Ph.D.	2017
Department of Instructional Technology and Learning Science, Utah State University, Logan, UT	
Doctoral Student Researcher of the Year (2016-2017)	2017
Department of Instructional Technology and Learning Sciences, Utah State University, Logan, UT	

Scholarship (awarded for academic excellence) Instructional Technology and Learning Sciences, Utah State University, Logan, UT	2013 – 2014
The Kelly Foundation Scholarship Florida State University, Tallahassee, FL	2012
The Ruby Diamond Fellowship Florida State University, Tallahassee, FL	2011
Scholarship (awarded for academic excellence) Yonsei University, S. Korea	2004 – 2006
Certificate of Recognition Outstanding Contribution to Education for Guro Citizens Guro District Office, Seoul, S. Korea	2007
Certificate of Recognition Outstanding Contribution to Education for Jongro Citizens Jongro District Office, Seoul, S. Korea	2007

Certifications

- Teaching Assistant Certification ▪ Level: Excellent ▪ Research and Graduate Studies, Utah State University	2012
- Teaching Certification ▪ Program for Instructional Excellence ▪ Florida State University, Tallahassee, FL	2011

Professional Memberships

- American Educational Research Association (AERA)
- Association for Educational Communication and Technology (AECT)
- Association for Information Systems (AIS)
- Professors of Instructional Design & Technology (PIDT)

Service

-University of Miami

Teaching and Learning Department

- Search Committee for the Position of Clinical Assistant Professor, Department of Teaching and Learning (Spring 2022)
- TAL Review Committee for Outstanding Doctoral Dissertation (2019)

School of Education and Human Development, UM

- SEHD Research Council (2020~)
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University Level

- A Judge at the 2023 Graduate & Postdoctoral Research Symposium
- A Judge at the 2022 Graduate & Postdoctoral Research Symposium
- Teaching Mentor for the 2021 Teaching Academy, Postdoctoral Program Office, Graduate School
- Blackboard Renovation Member, the office of Planning, Institutional Research, and Assessment
- University of Miami Medical School Curriculum Reform, Counselor
- Online Pivot Assessment Work Team

-Nationwide/Worldwide

- National IT Industry Promotion Agency, Project Evaluation Committee (2024)
- Secretary/Treasurer, SIG problem-based education, AERA (May 2016 - April 2018)
- **Scientific Committee (Representing the Field of Education)**
 - 10th International Conference on Multimedia and Human-Computer Interaction, August 3- 5, 2023, London, United Kingdom
 - 11th International Conference on Multimedia and Human-Computer Interaction, August 19-21, 2024, Barcelona, Spain
- **Editorial Board**
 - **Editor**, The Educational Research for Tomorrow (2024~)
 - **Associate Editor**, Frontiers in Education, Section for Digital Learning Innovation (2021~)
 - **Review Editor**, Frontiers in Psychology, Section for Educational Psychology (2023~)
 - **Editorial Board Member**, Humanities & Social Sciences Communications (2023~)
 - **Editorial Board Member**, journal Tempos e Espaços em Educação (Portuguese for Times and Spaces in Education) (2020~)
- **Reviewer**

U.S. Department of Education

- Evaluation Report, Institute of Education Sciences (2023~)
- Digital Learning Platforms Research Teams Review Panel, Institute of Education Sciences (2023~)

Peer-reviewed Journal Articles

- Humanities & Social Sciences Communications (2023~)
 - Educational Psychology Review (2023~)
 - Review of Educational Research (2022~)
 - International Journal of Computer-Supported Collaborative Learning (2022~)
 - Spencer Foundation Grant (2020~)
 - Computers and Education (2020~)
 - Journal of Computer-Assisted Learning (2020~)
 - Frontiers in Education (2020~)
 - Journal of University Teaching and Learning Practice (2020~)
 - International Conference on Education, Training, and Informatics (2020~)
 - Interdisciplinary Journal of Problem-Based Learning (2018~)
 - American Educational Research Association (2018~)
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