MEIZE GUO
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Education

Ph.D. 2022
Instructional Systems Technology, minor Science Education
Indiana University, Bloomington, IN, USA

Dissertation: *How do K-8 Teachers Conceptualize and Practice Teaching Computer Science?*

M.A. 2012
Educational Technology
Harbin Normal University, Harbin, HLJ, China

B.S. 2008
Educational Technology
Harbin Normal University, Harbin, HLJ, China

Grants and Funded Projects

2023 Pizzaology Summer Camp
$37,751.11
Project Contractor and Co-PI
Funded by Idaho STEM Action Center in 2023.

Peer-Reviewed Articles

Guo, M., & Wang, J. (in press). Robotic badges for Girl Scouts: Coding exploration integrated with multimodal literacies*. Journal of Technology-Integrated Lessons and Teaching.*

Liao, Y. C., Kim, J., Ottenbreit-Leftwich, A. T., Karlin, M., & **Guo, M.** (2024). Voices of elementary computer science teachers: Computer science integration rationales and practices. *ACM Transactions on Computing Education,* 24(4). https://doi.org/10.1145/3688854

Bland, T., & **Guo, M.** (2024). Visual mnemonics and gamification: A new approach to teaching muscle physiology. *Journal of Technology Integrated Lessons and Teaching, 3*(1). https: //doi.org/ 10.13001/jtilt.v3i1.8469

Bland, T., **Guo, M.**, & Dousay, T. (2024). Multimedia design for learner interest and achievement: A visual guide to pharmacology. *BMC Medical Education, 24(*113*)*. https://doi.org/10.21203/rs.3.rs-1782691/v1

Chen, S., **Guo, M.,** & Dousay, T. (2023). Grow to learn: A metacognitive approach to early childhood teachers' science professional development. *Research in Science & Technological Education.* https://doi.org/10.1080/02635143.2023.2279076

Ottenbreit-Leftwich, A. T., Kwon, K., Brush, T. A., Karlin, M., Jeon, M., Jantaraweragul, K., **Guo, M.**, Nadir, H., Gok, F., & Bhattacharya, P. (2021). The impact of an issue-centered problem-based learning curriculum on 6th grade girls' understanding of and interest in computer science. *Computers and Education Open*. https://doi.org/10.1016/j.caeo.2021.100057

Kwon, K., Jeon, M., **Guo, M.**, Yan, G., Kim, J., Ottenbreit-Leftwich, A. T., & Brush, T. A. (2021). Computational thinking practices: Lessons learned from a problem-based curriculum in primary education. *Journal of Research on Technology in Education, 55*(4), 590-607. https://doi.org/10.1080/15391523.2021.2014372

Ottenbreit-Leftwich, A., Liao, Y. C., Karlin, M., Lu, Y. H., Ding, A. C. E., & **Guo, M.** (2020). Year-long implementation of a research-based technology integration professional development coaching model in an elementary school. *Journal of Digital Learning in Teacher Education*, *36*(4), 206-220. https://doi.org/10.1080/21532974.2020.1804494

Ozogul, G., Karlin, M., Ottenbreit-Leftwich, A., Ding, A., Liao, Y., & **Guo, M.** (2019). Instructional practices for addressing computer science standards: Using computer kits in preservice teacher education. *Research on Education and Media, 11*(1), 18-24. https://doi.org/10.2478/rem-2019-0004

Akerson, V. L., Burgess, A., Gerber, A., **Guo, M.**, Khan, T. A., & Newman, S. (2018). Disentangling the meaning of STEM: Implications for science education and science teacher education. *Journal of Science Teacher Education, 29*(1), 1-8. https://doi.org/10.1080/1046560X.2018.1435063

Boling, E., Alangari, H., Gyabak-Kumka, K., **Guo, M.**, Hajdu, I., Khlaif, Z., Kizilboga, R., Tomita, K. Alsaif, M., Lachheb, A., Bae, H., Ergulec, F., Zhu, M., Basdogan, M., Buggs, C., Sari, A., & Techawitthayachinda, R. (2017). Core judgments of instructional designers in practice. *Performance Improvement Quarterly, 30*(3), 199-219. https://doi.org/10.1002/piq.21250

Book Chapters

Newman, S., Khan, T. A., **Guo, M.**, Gerber, A., Burgess, A., & Akerson, V. L. (2020). Public portrayals of Indiana STEM certified schools. In V. L. Akerson & G. A. Buck (Eds.), *Critical Questions in STEM Education* (pp. 167-184). Springer.

Cullen, T., & **Guo, M.** (2020). The nature of technology. In V. L. Akerson & G. A. Buck (Eds.), *Critical Questionsin STEM Education* (pp. 21-32). Springer.

Proceedings

Guo, M., Yun, M., & Israel, M. (in press). Introducing computational thinking and computer science instruction to preservice science and math teachers. In *SIGCSE'25: Proceedings of the 56th ACM Technical Symposium on Computer Science Education.*

Boling, E., Abramenka-Lachheb, V., **Guo, M.**, Basdogan, M., Li, Z., Nadir, H., Kadirova, D., Slamet, T., Chartrand, G., Chaudhuri, P., Yan, Y., Sankaranarayanan, R., & Lachheb, A. (2024). Precedent knowledge: Practicing designers' perspectives and experiences, in Gray, C., Hekkert, P., Forlano, L., Ciuccarelli, P. (eds.), DRS2024: Boston, 23–28 June, Boston, USA. https://doi.org/10.21606/drs.2024.616

Boling, E., Basdogan, M., Abramenka-Lachheb, V., **Guo, M.**, Nadir, H., Sankaranarayanan, R., Yan, Y., Alghamdi, K., Chaudhuri, P., Li, Z., AlSaif, M., & Lachheb, A. (2024). Precedent knowledge in multiple

domains of design: A review and analysis of literature, in Gray, C., Hekkert, P., Forlano, L., Ciuccarelli, P. (eds.), DRS2024: Boston, 23–28 June, Boston, USA. https://doi.org/10.21606/drs.2024.614

Kim, J., Liao, Y. C., **Guo, M.**, Karlin, M., & Ottenbreit-Leftwich, A. (2023). Integrating computer science into elementary schools: Computer science teachers' perceptions and practices. In *SIGCSE'23: Proceedings of the 54th ACM Technical Symposium on Computer Science Education V.2* (pp.1426). Association for Computing Machinery. https://doi.org/10.1145/3545947.3576370

Guo, M., & Ottenbreit-Leftwich, A. (2020). Exploring the K-12 computer science curriculum standards in the US. In *WiPSCE'20: Proceedings of the 15th Workshop on Primary and Secondary Computing Education* (pp.1-6). Association for Computing Machinery. https://dl.acm.org/doi/10.1145/3421590.3421594

Ergulec, F., Brush, T., Glazewski, K., Shin, S., Shin, S., Hogaboam, P., & **Guo, M.** (2016). Teacher scaffolding for inquiry-based learning in a technology-enhanced student-centered high school biology classroom - A case study. In G. Chamblee & L. Langub (Eds.), *Society for Information Technology & Teacher Education International Conference* (pp. 2609-2614). Association for the Advancement of Computing in Education. https://www.learntechlib.org/primary/p/172063/

Presentations

Guo, M. (2023, October 15-19). *Exploring technology integration self-efficacy and decision-making processes of pre-service teachers* [Paper presentation]. Association for Educational Communication and Technology Convention, Orlando, FL, United States.

Kim, J., Liao, Y., **Guo, M.,** Karlin, M., & Ottenbreit-Leftwich, A. (2023, March 15-18). *Why should we be integrating computer science into the elementary curriculum? Computer science teachers' perceptions and practices* [Poster section]. Special Interest Group on Computer Science Education (SIGCSE), Toronto, Canada.

Guo, M. (2020, November 2-7). *Investigating K-8 teachers' concepts and practice of teaching computer science* [Paper presentation]. Association for Educational Communication and Technology Virtual Convention.

Boling, E., Alsaif, M., Lachheb, A., Basdogan, M., Nadir, H., Abramenka-Lachheb, V., Alghamdi, K., **Guo, M.**, Battacharaya, P., Sankaranarayanan, R., Kadirova, D., & Chartrand, G. (2020, November 2-7). *Practicing designers' experiences of building and using precedent knowledge* [Paper presentation]. Association for Educational Communications and Technology Virtual Convention.

Guo, M., & Ottenbreit-Leftwich, A. (2020, October 28-30). *Exploring the K-12 computer science curriculum standards in the US* [Paper presentation]. The 15th Workshop on Primary and Secondary Computing Education, Essen, Germany.

Guo, M., & Akerson, V. L. (2019, August 26-30). *Disentangling the meaning of STEM: Implications for science education and science teacher education* [Poster session]. European Science Education Research Association Conference, Bologna, Italy.

Boling, E., Lachheb, A., Basdogan, M., Abramenka-Lachheb, V., **Guo, M.**, Alghamdi, K., Nadir, H., Zhu, M., & Battacharaya, P. (2019, October 21-25). *Design precedent: Critical knowledge as it is defined and used across fields of design* [Paper presentation]. Association for Educational Communications and Technology Convention, Las Vegas, NV, United States.

Ottenbreit-Leftwich, A., Brush, T., Kwon, K., Karlin, M., Jeon, M., Jantaraweragul, K., Abramenka-Lachheb, V., Nadir, H., **Guo, M.**, Zhu, M., Alghamdi, K., Yan, Y., Gates, L., Gok, F., Estell, D., Roberts, M., & Dalkilic, M. (2019, October 21-25). *Inspiring the next generation of learners: Using socially relevant computer science (cs) problem-based learning curriculum at the 6th grade level* [Paper presentation]. Association for Educational Communications and Technology Convention, Las Vegas, NV, United States.

Guo, M., Karlin, M., Liao, Y., Ding, A., & Lu, Y. (2018, October 23-27). *Implementation of a research-based professional development technology coaching model in an elementary school* [Paper presentation]. Association for Educational Communication and Technol Convention, Kansas City, MO, United States.

Guo, M. (2018, June 24-27). *Understanding pre-service teachers' technology integration through a design lens* [Around table session]. The International Society for Technology in Education Conference & Expo, Chicago, IL, United States.

Karlin, M., Liao, Y., Ottenbreit-Leftwich, A., Ding, A., & **Guo, M.** (2017, October 11-13). *The Evolution of a Technology Coaching Model: One Year into an Elementary School Implementation* [Paper presentation]. Indiana Connected Educators Conference, Noblesville, IN, United States.

Karlin, M., Liao, Y., Ottenbreit-Leftwich, A., Lu, Y., Ding, A., **Guo, M.**, & Juska, J. (2016, October 12-14). *Technology coaching with individualized professional development plans: Challenges and successes in an elementary implementation* [Paper presentation]. Indiana Connected Educators Conference, Noblesville, IN, United States.

Boling, E., Alangari, H., Brown, O., Demiral-Uzan, M., Faulkner, R., Gyabak-Kumka, K., **Guo, M.**, Hajdu, I., Khlaif, Z., Kizilboga, R., & Tomita, K. (2016, April 8-12). *Core judgment: An empirical investigation into the implicit philosophical orientation of practicing instructional designers* [Paper presentation]. American Educational Research Association Annual Meeting, Washington DC, United States.

Ergulec, F., Brush, T., Shin, S., Shin, S., Glazewski, K., Hogaboam, P., & **Guo, M.** (2016, April 8-12). *Teacher scaffolding strategies for socioscientific inquiry-based learning in a high school biology classroom* [Paper presentation]. American Educational Research Association Annual Meeting, Washington, DC, United States.

Manuscript in Preparation

Guo, M., Chandler, L., Johnson, M., Lindsey, N. & Israel, M. Preparing computer science preservice teachers via the gradual release of responsibility model.

Guo, M., Bennett, A., & Israel, M. How do in-service CS teachers develop their professional identity?

Scholarships and Awards

Travel Award	GPSG, IU. 2021
L. C. & Sharon Larson Fellowship	IST Department, IU. 2016/2018/2019
J. K. Kemp Fellowship	IST Department, IU. 2017–2021
Clarence Fogelstrom Fellowship	IST Department, IU. 2018–2019
Outstanding Associate Instructor Award	School of Education, IU, 2018

Courses Taught

University of Florida: ETE-6141	K-12 Computer Science Pedagogy I *Online (FL23)*
University of Idaho: EDCI-410	Technology, Teaching & Learning *F2F/Online (SU22/FL22/SP23/SU23)*
University of Idaho: EDCI-545	Technology, Teaching & Learning *Online (SU22/23SU)*
Washington State University: PSY-505	Introduction to Research Methods *F2F (22FL)*
Indiana University: EDUC-W200	Using Computers in Education *F2F (FL16/SP17/FL17/SP18/FL18/SP19)*

Workshops and Summer Camps

2024 CS Fellows Workshop	https://sites.google.com/view/ctcs101/home
2023 Girl Scouts CS Badges/Journey	https://sites.google.com/view/girlscout2023/home
2023 Pizzaology Summer Camp	https://sites.google.com/view/pizza-ology-camp/home

Professional Experience

CSEveryone Center
University of Florida
Research Assistant Scientist
Aug 2024 - Current

Lead research projects of the CSEveryone Center for Computer Science Education. Develop and facilitate STEM/CS/CT/AI integration workshops and courses for the CSEveryone Center and the UFTeach program to serve both in- and pre-service teachers' needs. Support outreach events at the university and local schools for CSEveryone.

Post-Doctoral Research Associate
CSEveryone Center
University of Florida
2023 - 2024

Leading research projects of CSEveryone Center. Teaching Computer Science K-12 Teaching Graduate Certificate course: K-12 Computer Science Pedagogy I. Grading and providing feedback to students' lesson plans, reflections, and discussions. Developed CS/CT integration workshops for the UFTeach program. Supporting outreach events at the university and local schools for CSEveryone.

Post-Doctoral Fellow
Doceo Center
University of Idaho
2022 - 2023

Taught in-person/online undergrad and grad-level courses: Technology, Teaching, and Learning. Develop the course activities and materials. Provided grades and feedback to students' lesson plans, websites, and performance tasks. Created technology integration PD courses for in-service teachers. Run the Doceo Center and outreach events at local schools.

Adjunct Instructor
Dept Kinesiology & Educational Psy.
Washington State University
2022 - 2023

Taught graduate-level course: Introduction to Research Methods. Designed the course activities and developed the course materials. Provided grades and feedback to students' bibliography and research proposal.

Graduate Assistant
Center for the Study of Global Change
Indiana University Bloomington
2019 - 2022

Maintained the website, managed the media database, and outreached to stakeholders for the Center for the Study of Global Change. Designed course and event flyers for promotion. Facilitated the writing group for graduate students in Hamilton Lugar School. Designed annual reports and newsletters for donors and stakeholders.

Associate Instructor
IST Department
Indiana University Bloomington
2016 - 2019

Taught undergraduate-level course Using Computer in Education. Developed curriculum and created teaching materials for pre-service teachers to learn about integrating technology in K-12.

Online Instructional Designer
eLearning Design and Service
Indiana University Bloomington
2018/2019

Worked as online instructional designer in eLearning Design and Service. Designed, developed and revised the online Canvas course. Created job aids about Canvas, Kaltura, and Quiz Video for students and instructors.

Research Assistant
SPEA School
Indiana University Bloomington
2015 - 2017

Assisted with the data collection and analysis of the research on "intrinsic motivation and play" with Dr. Monika Herzig from Arts Administration in SPEA and Adam Leite from Department of Philosophy.

Graduate Assistant
IST Department
Indiana University Bloomington
2015/2016/2018/2019

Supported students in School of Education on technology integration. Developed job aid and other materials for W200/CEL courses and instructors. Conducted technology related workshops requested. W200 website maintenance. Designed the Sign-in System for lab.

Chinese Language Teacher
Asian Culture Center
Indiana University Bloomington
2014 - 2016

Taught basic-level Chinese to college students and local adults. Coordinated after-class cultural immersion activities. Developed curriculum and created teaching materials for Chinese beginners to learn about Chinese language and culture.

Chinese Language Teacher Intern
Wheatmore High School
Trinity, NC, USA
2012 - 2013

Chinese class instructional designer, tutor for students taking Chinese, and substitute teacher. Publicized Chinese culture; made speeches and presentations in several schools; took videos of optional courses and

video editing; created an international wall mural with International Club Students.

Chinese Language Teacher
Susung High School
Suwon, Gyeonggi-do, South Korea
2011 - 2012

Taught basic/middle level Chinese. Coordinated after-class cultural immersion activities. Developed curriculum and created teaching materials for Chinese class. Judged Chinese speech Chinese beginners to learn about Chinese language and speech contest.

Service

Journal Article Reviewer
JRTE
2024

Reviewer for the Journal of Research on Technology in Education. Reviewer expertise focuses on K-12 Computer Science education.

Journal Article Reviewer
JMIR Medical Education
2024

Reviewer for the Journal of Medical Internet Research - Medical Education. Reviewer expertise focuses on educational and curriculum research.

Journal Article Reviewer
JTILT
2024

Reviewer for the Journal of Technology-Integrated Lessons and Teaching. Reviewer expertise focuses on technology integration and curriculum design.

Conference Paper Reviewer
SIGCSE TS Conference
2024/2023

Reviewer for the poster and paper tracks of Special Interest Group on Computer Science Education Technical Symposium 2025/2024.

Wheel Wednesday CS/CT Facilitator
PY Yonge Developmental Research School at the UFL
Gainesville, FL, USA
2023-2024

Designed and taught CS/CT units to about 80 K-5 students weekly. Designed the unplugged and robotic activities, prepared teaching materials, and taught three classes on Wednesday mornings. Since the 2024 Spring Semester, started to collaborate with pre-service teachers and developed their CS/CT knowledge and teaching skills. Provided feedback and support to pre-service teachers' practice.

CS Integration Units Facilitator
UFTeach Program at the UFL
Gainesville, FL, USA
2024/2023

Delivered the CS integration units to pre-service teachers in the UFTeach program. Communicated with the course instructors, designed the course materials, taught the classes, prepared the teaching materials, and participated in pre-service teachers' practice as technology supporters.

Doceo Center Workshops Facilitator
University of Idaho
Moscow, ID, USA

Designed a series of workshops on integrating technologies in teaching and learning for associate instructors, graduate assistants, staff, and faculties.

2023/2022 Introduce productivity tools, video editing tools, and website editing tools.

VGC Educational Robots Facilitator
University of Idaho
Moscow, ID, USA
2022 October

Facilitated Educational Robot stations for the Doceo Center at the Vandal Gaming Convention (VGC). Prepare the materials, run the activities, and introduce educational robots to young learners.

Pizzaology Coordinator/Facilitator
University of Idaho
Moscow, ID, USA
2023/2022 August

Supported running the summer camp. Communicate with the local business owners for camp activities design. Help with designing and preparing the materials for campers. Facilitate the activities of each day. Communicate the album books picking up for participants.

STEM Creativity Carnival Coordinator
Potlatch Elementary School
Potlatch Jr-Sr High School
Potlatch, ID, USA
2023/2022 March

Designed and organized STEM education events for about 300 K-8 students. Design the activities, contact the catering collaborators, communicate with principals and guardians, design promotion materials, and advertise the events. Run the stations, help prepare the food, clean up the field, and send the kids to their guardians.

Technology Coach
Lakeview Elementary School
Bloomington, IN, USA
2016 - 2019

Provided consultation and support for teachers with regards to developing technology-enhanced instruction and curriculum in 1:1 iPad classroom, computer science instruction, and computational thinking instruction.

Blogger
Chinese ZHIHU Blog
China
2017 - 2020

Run a blog column on the famous Chinese blog site: Zhihu.com to talk aboutthe learn and research experiences at Indiana University, the applied technologies for teachers' teaching in the US and the ideas of curriculum.

W200 Course Coordinator
Indiana University
Bloomington, IN, USA
2016 - 2019

Served as W200 course coordinator for the W200 team since 2016. Helped with issues related to Undergraduate Teaching Assistants (UTA) recruitment, working schedule arrangement, orientation, and communication with department administrator.

GIST Treasurer
Indiana University
Bloomington, IN, USA
2017 - 2018

Served as treasurer for the GIST in the 2017-2018 school year. Managed GIST financial account and conducted fundraising. Attended the group meeting and participated in the department events planning and execution.

Conference Paper Reviewer
AECT Conference
2023/2022/2020/2018

Reviewed proposals related to Society of International Chinese in Educational Technology for the Association for Educational Communications and Technology(AECT) 2018/2020/2022/2023 Conference.

Conference Paper Reviewer
ISTE Conference
2017/2016

Reviewed proposals related to digital age teaching/learning and instructionaldesign and delivery for the 2017/2018 International Society for Technology in Education (ISTE) Conference.

Conference Facilitator
AECT Conference
Indianapolis, IN, USA
2015, October

Facilitated a research presentation section for Multimedia Production Division of Association for Educational Communication and Technology (AECT) Conference.

2015 Registration Team Leader &
2018 Tech Support Team Leader
IST Conference
Bloomington, IN, USA
2018/2015

Led a team to organize the registered preparation before the conference and the registration issues on the conference day. Provided guidance to the conference attendee. Prepared the supporting technology before the conference and led a team for troubleshooting technology issues during the conference.