M. Brooke Robertshaw, PhD

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Qualifications

- Knowledge of broad base research skills that include both quantitative, qualitative and mixed-methods research methodologies.

- Knowledge of and experience implementing multiple types of data collection and analysis to assess professional development programs and teacher knowledge

- Strong interest in and knowledge of K-12 teacher professional development best practices.

- Successful record of publication and presentation.

- Established ability to work collaboratively and independently in the field of education.

- Knowledge of survey methodologies and classical test theory.

- Ability to write literature reviews.

- Knowledge of data visualization principles.

- Expertise in using the internet and other forms of electronic media for research and teaching and learning.

- Experience using SPSS, R, G*Power, and Optimal design in statistical analysis.

Education

2013
Doctor of Philosophy, Instructional Technology & Learning Sciences, Utah State University, Logan, UT USA
Dissertation research: Use of mixed methods to develop close-ended answers to assess in-service K-12 teachers' technological pedagogical content knowledge (TPACK)

1998
Masters of Education, Computer Based Education, University of Georgia, Athens, GA, USA

1995
Bachelor of Arts, Early Childhood Education, Oglethorpe University, Atlanta, GA, USA

Statistics Experience

Classes Taken
- Undergraduate Level Survey Course
- Graduate Level Survey course
- Graduate Level Correlation and Regression
- Graduate Level Multivariate Statistics (Highest level offered for Education majors)

Other Statistics Training
- 1 year internship in the Office of Methodological and Data Services for Utah State University's College of Education and Human Resources

- 5 years as a research assistant in Instructional Technology and Learning Sciences & Science Education at Utah State University

Statistics Used for Analysis and in Consulting
- Descriptives
- Normality Testing
- Multiple Imputation
- Missing Value Analysis
- T-Tests
- ANOVA, ANCOVA, MANOVA, Repeated Measures ANOVA
- Friedman Rank, Kruskal-Wallis, Mann-Whitney-U, Wilcoxon-Matched-Pairs, Wilcoxon Signed-Rank, Cochran's Q
- Linear Regression, Ordinary Least Squares Regression, Binary Logistic Regression
- Mixed Models
- Generalized Estimating Equation
- Exploratory and Confirmatory Factor Analysis for reduction and validity testing
- Cohen's alpha for test reliability, Krippendorf's Alpha for Inter-rater reliability, Inter-class correlation
- Chi-square
- Effect Size (Cohen's D, Cliff's delta, Vargha-Delaney's A)
- Power Analysis

- Cluster Analysis

Statistical Software Used
- SPSS
- R Stats Package
- G*Power
- Optimal Design

Database & Spreadsheet Software Used
- MS Access
- Excel
- Postgres SQL on a linux system

Other research paradigms
Qualitative Research
- Graduate level survey course
- Training in qualitative data gathering, data analysis, and writing up qualitative studies during research assistantships. Included gathering, analyzing and writing up studies using focus group, observation, interview and content analysis data.
- Mentoring for dissertation, which used qualitative, quantitative and mixed-methodologies. Mentoring included exploration of different epistemologies.

Mixed Methods Research
- Training during research assistantships.
- Use of mixed-methods in dissertation. Data was 'qualitized' and 'quantified' for analysis and writing purposes.

Statistical Consulting
Immigrant Family Advocates (project currently under way)
Bend, OR

Consulting on a project to analyze seven years of data related to arrest and deportation of undocumented individuals in Deschutes County, Oregon. Will be writing up a report of analysis for use in reports to law enforcement and law makers.
Statistical analysis for project: data cleaning, descriptives, ANOVA, regression, cluster analysis and possibly survival analysis and structural equation modeling.

Eugene Free Mobile Medical Clinic
Eugene, OR

Consulted on two projects: one examining patient flow through the clinic and the other projecting patient growth for the clinic. Responsible for collecting and analyzing data and writing reports for clinic staff for use in improving clinic practice.
Statistical analysis for projects: data cleaning, descriptives, ANOVA.

Read-It-Again Project
Department of Special Education, College of Education and Human Services, Utah State University, Logan, UT, USA

> Consulted on a project examining second language learning in dual language preschools. Worked collaboratively with three other researchers, and wrote up analysis and findings sections of conference and journal papers submitted.
>
> *Statistical analysis completed for project*: exploring data using descriptives, normality testing and one way ANOVAs, t-tests, running exploratory and confirmatory factor analyses on survey data, using cluster analyses to investigate the ability for parents to be able to predict children's language ability, using generalized estimating equations to run MANOVA and ANCOVA models, running effect sizes to check for magnitude of differences found in the data.

Data Analyst, Math Engineering Science Achievement Project and Technology Student Association Project
Department of Mechanical and Aerospace Engineering, College of Engineering, Utah State University, Logan, UT, USA

> Consulted on a project examining the validity and reliability of two surveys examining attitudes and experiences of students participating in after school science, technology, engineering and math programs. Wrote up a report of analysis and findings for project managers to be used in future presentations and decision making.
>
> *Statistical analysis completed for project:* cleaning data and running multiple imputation on data to be used in analysis; exploring data using descriptives normality testing and one way ANOVAs, t-tests, running reliability tests on surveys; completing exploratory and confirmatory factor analyses on survey data to make recommendations for what survey items to remove and which to leave in; using ANOVAs, generalized estimating equations, and regression analysis to investigate any impact program had on participants

Statistics and Research Experience

July 2011-June 2012
Intern
Office of Methodological and Data Services, College of Education and Human Services, Utah State University, Logan, UT, USA

> Responsible for: participating in consultation meetings with faculty and staff about the correct statistics that should be run for their project; learning new statistical methods as needed; helping faculty and students learn new statistical methods; helping faculty and students learn how to run statistics in SPSS, R Stats program and G*Power.

January 2007 – June 2011

Research Associate, Digital Libraries Go to School Project
Department of Instructional Technology & Learning Sciences, College of Education and
Human Services, Utah State University, Logan, UT, USA
>Responsible for: analysis of qualitative and quantitative data, development of teacher technology professional development materials, coordination with professional development participants, writing and presenting scholarly findings, coordinating with team members. Quantitative data analysis included cleaning data, running normality tests, descriptives, factor analyses on survey data, inter-rater reliability, repeated measures ANOVAs and effect sizes. Also led refinement of surveys used in the project during my time working on it.

August 2006 – May 2007
Research Assistant, the Center for Open and Sustainable Learning,
Department of Instructional Technology & Learning Sciences, College of Education and
Human Services, Utah State University, Logan, UT, USA
>Responsibilities: designing a research study to investigate the localization of parenting materials that were initially created for middle class, highly educated parents to teen parents. Study conducted but not enough data was collected to run any analysis.

Mentoring in Statistics and Educational Research

Summer 2012: Worked with a doctoral student in Psychology to verify statistical tests run for dissertation research. Also helped student to understand all statistical methods so that he could adequately defend is work to his doctoral committee.

Fall 2011-Spring 2012: Working extensively with an Instructional Technology and Learning Sciences PhD student on methods and results section for dissertation. This work includes: teaching student basic stats from what a significance level is to ANCOVA, understanding the difference between parametric and non-parametric tests, understanding validity and reliability, and guiding them through writing methods and results section of dissertation in coordination with student's dissertation chair and director of the Office of Methodological and Data Services. I also helped the student re-validate a beginning stats course through devising two more ways dissertation data could be analyzed and putting together a presentation explaining this for their doctoral committee.

Fall 2011: Worked with a Management Information Systems student using latent class analysis for dissertation.

Fall 2011: Helped an Educational Leadership PhD student to use generalized estimating equation in a repeated measures model for dissertation.

Fall 2009 – Spring 2010: Mentored undergraduate researchers as they helped to refine a rubric to assess in-service teachers technological pedagogical content knowledge that I developed from previous research

Teaching

September 2012-October 2012
Teacher, Modern Languages Center, Amman, Jordan
> Responsible for teaching American English to adult English language learners from countries mainly in the Arab world.

Summer 2012: Instructor for the "Science, Inquiry and Technology" course for Utah State University's Global Academy.
> Grant writer, instructor and developer of course taught to international undergraduate students participating in an eight-week program at Utah State University

Fall 2012: Co-taught, with Eric Packenham, the Science Education Cohort of teachers from 8, non-western, countries who were participants in the IREX-Teaching Excellence and Achievement program.

Spring 2011: Teaching Assistant for Dr. Todd Campbell: Science and Society, a required Science Teaching Methods course.
> Contribution: Assessment of students understanding of the nature of science through the use of the VNOS-C survey; assessment of students abilities to understand the nature of science and scientific argumentation in blog posts on current events in science; assisting in leading final class action project; in class helping to guide discussions about topics covered related to science in society.

Spring, 2009: Teaching Assistant for Dr. Nick Eastmond, Special Topics: Culture and Instructional Technology
> Contribution: Knowledge of working with, advocating for, and creating instruction for diverse populations within the United States; ran supplemental instruction once a week outside of class; helped with the IRB process for research articles being written in class; helped with research articles.

Fall 2007 – Spring 2010: Instructional Architect & Online Learning Resources for Pre-Service Methods Classes.
> Created 1-3 hour workshops and assignments to teach pre-service teachers how to use online learning resources and the Instructional Architect.

January 1994-December 1995: Pre-School and Pre-Kindergarten Teacher, Oglethorpe Presbyterian Church Pre-School.
> Worked part-time January 1994-May 1995 teaching in a three-year old classroom; then moved to working full time from May 1995-December 1995 teaching one of two new Pre-Kindergarten classes.

Other Professional Experience

January 2013-May 2013
Organizer, Eugene Free Mobile Medical Clinic, Eugene, OR, USA

Responsibilities: working with clinic manager to recruit and manage medical and non-medical volunteers; registering patients for clinic visits; helping to run the over-the-counter pharmacy during clinic hours; organizing donations to the clinic; working as a part of the clinic team to continue to improve clinic services; helping clinic patients outside of clinic times as needed; working with patients with mental health concerns; working with local service agencies to fill prescriptions; working with local governmental officials and policy makers; networking with other community organizations; coordinating with local churches for help providing for needs of clinic patients; writing reports on activities of the clinic; exploring funding opportunities.

December 2005 – August 2006
Technical Coordinator, LEAD: Leadership, Education, Adventure, Direction, Eugene, Oregon, USA
Work included: grant writing, website redesign with the help of a committee of teen participants and adults, creation of a three-year technology plan for the organization, volunteer coordination, technology support, and work with the teen participants in a variety of capacities.

June 2002 – September 2006
Community Organizer, Peace and Human Justice communities, Eugene, Oregon, USA
Responsibilities: Coordinating volunteers, writing press releases, collaborating with different organizations within the peace and human justice communities, running statistical analyses to assess where to send volunteers as a part of electoral campaigns, teaching volunteers about different political issues and how to talk to members of the public about these issues, working with local, state and federal politicians across the political spectrum to pass legislation, organizing fundraisers, designing and delivering workshops on different political issues, facilitating public meetings.

March 1999 – June 2002
Webmaster, Linn Benton Lincoln Education Service District, Albany, Oregon, USA
Work included: design, programming and maintenance of the organization's website and troubleshooting of server issues.

September 1998 – March 1999
Instructional Technologist, Oregon Public Education Network, Albany, Oregon, USA
Work included: development of a web based technical toolkit for school and district technology support personnel, technical support to schools using a pilot l library information system, committee participation for the management of a statewide pilot library information system, data collection for an elementary ergonomics program, development of recommendations for delivery of technology training to teachers in Oregon.

Journal Publications

Robertshaw, M.B. & Campbell, T. (2013). Constructing arguments: Investigating pre-service science teachers' argumentation skills in a socio-scientific context. *Science Education International.*

*Durán, L., Innocenti, M.R., Robertshaw, M.B., Shea, K. (2013). Exploring the fidelity of the bilingual early language assessment (BELA): A pilot exploration to move beyond face validity. *NHSA Dialog: A Research-to-Practice Journal for the Early Childhood Field.*

*Durán, L, Robertshaw, M.B. & Gorman, B. (2013). Implemeting 'Read it again!' with bilingual preschoolers in Migrant Head Start. *Journal of Early Intervention.*

Ye, L., Walker, A., Recker, M., Robertshaw, M.B., Sellers, L. & Leary, H. (2012). Designing for problem-based learning: A comparative study of technology professional development. *US-China Education Review B, 5, 510-520.*

Walker, A., Recker, M., Ye., L., Robertshaw, M.B., Sellers, L., Leary, H. (2012). Comparing technology-related teacher professional development designs: a multilevel study of teacher and student impacts. *Educational Technology Research & Development 6*(3), 421-444.

Walker, A., Recker M., Robertshaw, M.B., Olsen, J., Leary, H. (2011). Integrating technology and problem-based learning: A mixed methods study of two teacher professional development approaches. *International Journal of Problem-Based Learning 5(2).*

Recker, M., Walker, A., Giersch, S., Mao, X., Halioris, S., Palmer, B., Johnson, D., Leary, H., Robertshaw, M.B. (2007). A Study of Teachers' Use of Online Learning Resources to Design Classroom Activities. *New Review of Hypermedia and Multimedia,* 13(2), 117-134.

Orey, M., Fan, H.F., Scott, E., Thuma, T. Robertshaw, B., Hogle, J., Tzeng, S.C., & Crenshaw, K. (2000). Stories about children and teachers as they create multimedia documents in a university influenced small city and a large inner-city. *Meridian,* 3(1).

*Denotes articles worked on as data analyst only

Book Chapters

Robertshaw, M.B., Walker, A., Recker, M., Leary, H., & Sellers, L. (2010). Experiences in the Field: The evolution of a technology-oriented teacher professional development model. In *New Science of Learning: Computers, Cognition and Collaboration in Education,* Myint Swe Khine and Issa M. Saleh, Eds. New York: Springer

Robertshaw, M.B., Leary, H., Walker, A., Bloxham, K., & Recker, M. (2009). Reciprocal mentoring "in the wild": A retrospective, comparative case study of ICT teacher professional development. In *Effective Blended Learning Practices: Evidence-Based Perspectives in ICT- Facilitated Education* (pp. 280-297), Philippa Gerbic & Elizabeth Stacey, Eds. Hershey, PA: IGI Global.

Conference Proceedings

Robertshaw, M.B., & Gillam, R.B. (2010). Examining the validity of the TPACK framework from the ground up: Viewing technology integration through teachers' eyes. *Proceedings of the Society for Information Technology and Teacher Education Conferenc*e, San Diego, CA, USA

Rogers, P. C., Robertshaw, M.B**.** & Lopez, J. (2008) Analysis of CATC: What do we know? Where next do we go? *Proceedings of the Cultural Attitudes Towards Technology and Communication Conference,* Nimes, France.

Robertshaw, M.B. & Bentley, J. (2007) OpenCourseWare and Localization: Bringing Together Old and New Technology to Increase Accessibility. *Proceedings of the 2007 Open Education Conference.* Logan, UT, USA

Technical Reports

Robertshaw, M.B. (2013). *Eugene Free Mobile Medical Clinic, Growing*. Eugene, OR, USA: Eugene Free Mobile Medical Clinic.

Robertshaw, M.B. (2013) *Patient Flow.* Eugene, OR, USA: Eugene Free Mobile Medical Clinic.

Gardner, J., Sanders, N., Haddock J., Freeman J., Hjorten, E., Robertshaw, M.B**.**, et al. (2007) *Evaluation Report for the LSTA.* Salt Lake City, UT, USA: Utah Library Division.

Invited Presentation

Robertshaw, M.B. & Awadh, M. (2012) Inquiry based learning and science education. Presentation to science faculty at Alqadsia Mixed Elementary and Secondary School, Safut, Amman, Jordan.

International Conference Presentations

Robertshaw, M.B. & Campbell, T. (2012, April). *Talking science in the wild: Investigating pre-service science educators' argumentation skills in a socio-scientific context.* Paper presented at the American Educational Research Association Conference, Vancouver, BC, Canada.

*Durán, L., Innocenti, M.R., Robertshaw, M.B., Shea, K. (2012, February). *Exploration of the validity of the bilingual early assessment.* Paper presented at the Conference on Research Innovations in Early Interventions, San Diego, CA.

*Durán, L., Innocenti, M.R., Robertshaw, M.B., Shea, K. (2011, November). Psychometric properties of the bilingual early assessment. Paper presented at the Young Children with Special Needs and their Families Conference, National Harbor, MD.

Banas, J., Robertshaw, M.B., Campbell, T. (2011, November). *Behavior and knowledge: Using behavior models to describe and influence teachers' technology integration proficiency.* Paper presented at the Association for Educational Communications and Technology Conference, Jacksonville, FL.

Walker, A., Recker, M., Robertshaw, M. B., Olsen, J., Sellers, L., Leary, H., Kuo, Y. (2011, April). *Integrating technology and problem-based learning: A mixed-methods study of two teacher professional development approaches.* Paper presented at the American Educational Research Association, New Orleans, La.

Robertshaw, M.B. (2010, October). *Teacher professional development: Describing teacher technological pedagogical content knowledge through the use of a rubric.* Paper presented at the Association for Educational Communications and Technology Conference, Anaheim, Ca.

Robertshaw, M.B., Olsen, J., Walker, A. (2010, October). *Teacher professional development models: Inquiry into concurrent versus separate technology and pedagogical knowledge and use.* Paper presented at the Association for Educational Communications and Technology Conference, Anaheim, Ca.

Walker, A. Robertshaw, M.B., Recker, M. (2010, April). *Problem-Based Design: A Technology-Oriented Teacher Professional Development Model.* Poster presented at the American Educational Research Association Annual Conference, Denver, Co.

Walker, A., Recker, M., Robertshaw, M.B., & Leary, H. (2010, April**).** *Integrating Technology and Problem-Based Learning: A Professional Development Model for Teachers.* Paper presented at the American Educational Research Association Annual Conference, Denver, Co.

Robertshaw, M.B., & Gillam, R.B. (2010, March*). Examining the validity of the TPACK framework from the ground up: Viewing technology integration through teachers' eyes.* Paper presented at the Society for Information Technology and Teacher Education Conference, San Diego, CA.

Robertshaw, M.B., Leary, H. & Bloxham, K. (2008, November). *Reciprocal Mentoring and Technological Pedagogical Content Knowledge: An emerging model of technology professional development for K-12 teachers.* Presentation at the Association for Educational Communications and Technology Conference, Orlando, FL.

Rogers, P. C., Robertshaw, M.B**.** & Lopez, J. (2008, June) *Analysis of CATC: What do we know? Where next do we go?* Paper presented at Cultural Attitudes Towards Technology and Communication Conference, Nimes, France.
*Denotes presentations worked on as data analyst only

National Presentations

Robertshaw, M.B**.,** Walker, A. & Leary, H. (2009, October). Crossing Paths to Connect Educators and Learners with Online Resources. Presentation at the Library and Information Technology Association Annual Conference, Salt Lake City, UT, USA.

Robertshaw, M. B**.,** Leary, H., Gardner, J. & Bentley, J. (2007, November). *Listening to the Librarians: Lessons from a 5 year program evaluation.* Paper presented at the American Evaluation Association Conference, Baltimore, MD, USA.

Robertshaw, M. B. & Bentley, J. (2007, September) *OpenCourseWare and Localization: Bringing Together Old and New Technology to Increase Accessibility.* Paper presented at Open Education, Logan, UT, USA.

Regional Presentations

Leary, H., Robertshaw, M.B., Walker, A., Bloxham, K. (2008, May*). Crossing paths to connect educators and learners with online resources*. Presentation at the Utah Library Association Annual Conference, Salt Lake City, UT, USA.

Robertshaw, M.B., Leary, H., Bloxham, K. (2008, March) *The Instructional Architect: A blueprint for connecting teachers and students to online resources*. Workshop at the Utah Coalition for Educational Technology Annual Conference, Salt Lake City, UT, USA.

Eastmond, N., & Robertshaw, M. B. (2007, March). *Evaluation of the LSTA.* Report of evaluation findings to the Utah State Library Board, Salt Lake City, UT.

Grant Experience

October 2009: Applied for the Spencer Foundation dissertation grant.

January 2008: "CyberConnect: Extending a Technology-Based Professional Development Model to Support Cyber-Enabled STEM Educators." Grant submitted to NSF: Sat in on meetings & offered suggestions, managed references, wrote a paragraph about reciprocal mentoring.

August 2006: Grant written and submitted to the Symantec Corporation Foundation for funding for the Nuestro Lugar / Our Place Teen Center Computer Lab.

Awarded: $5,000

In-house Grants

January 2012: Application to teach a course on science, technology and inquiry-based learning to international students participating in Utah State University's "Global Academy"
Awarded: Stipend & costs for activities based on how many students enroll in the course.

Spring 2007: Applied for a grant from Utah State University's Office of Research to conduct research on localization of parenting materials for low-income and at-risk teens.
Funding denied.

Scholarships

2009-2010: College of Education and Human Services Ambassador for the Department of Instructional Technology & Learning Sciences

2008-2009: College of Education and Human Services Ambassador for the Department of Instructional Technology

Service

Journal Paper Reviewer

Reviewer for the International Journal of Educational Research and Development

Conference Paper Reviewer

Summer 2013: Reviewer for the American Educational Research Association Annual Conference for the following divisions and special interest groups:
Instructional Technology Special Interest Group
Technology as an Agent of Change in Learning Special Interest Group
Division K (Teaching and Teacher Education): Technology and Science Education

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Instructional Technology Special Interest Group
Division K (Teaching and Teacher Education): Technology and Science Education

Summer 2012: Reviewer for the American Educational Research Association Annual Conference for the following divisions and special interest groups:
Instructional Technology Special Interest Group
Division K (Teaching and Teacher Education): Technology and Science Education

Spring 2011: Reviewer for the Association for Educational Communications and Technology 2011 Conference for the following division:
> Teacher Education Division

Other Service

Winter-Summer 2012: Chair, North Eastern Services Human Rights Committee. Responsibilities: Responsible for evaluating any human rights restrictions that program director, case workers, and behaviorist need to set to help a disabled client more safe in their living conditions as to whether it impinges on their human rights in a non-just manner.

Spring 2012, Spring 2010: Volunteer Science Fair Judge, Hillcrest Elementary, Logan, UT

Spring 2010, 2011: Judge for the State of Utah Mathematics, Engineering, Science Achievement competition.

Spring 2010-Spring 2011: Member, Utah State University Department Teaching Excellence Award Committee

Fall 2009: Consulted with the Science Teaching group in the department of Teacher Education and Leadership about the best ways to use internet technologies to facilitate a focus group.

2007 – 2009: Graduate Student Assembly of the Association for Educational Communications and Technology
> 07-08 President
> 07 – President Elect

Professional Affiliations

Association for Educational Communications and Technology
American Educational Research Association
American Psychological Association Division 45: Society for the Scientific Study of Ethnic Minority Issues