

OKAN BULUT

CONTACT INFORMATION

University of Alberta
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EDUCATION

University of Minnesota, Minneapolis, MN, USA

Ph.D., Educational Psychology - Quantitative Methods in Education, May 2013

M.A., Educational Psychology - Quantitative Methods in Education, January 2010

Adnan Menderes University, Aydin, TURKEY

B.A., Elementary Education, June 2006

ACADEMIC POSITIONS

Associate Professor

July 2018 to Now

University of Alberta (Edmonton, AB)
Faculty of Education
Program: Measurement, Evaluation, and Data Science (MEDS)

Assistant Professor

September 2014 to June 2018

University of Alberta (Edmonton, AB)
Faculty of Education
Program: Measurement, Evaluation, and Data Science (MEDS)

NON-ACADEMIC POSITIONS

Psychometrician

May 2013 to October 2014

American Institutes for Research (Washington, DC)
Assessment Program
Project: Statewide Alternate Assessments for Students with Disabilities

Research Fellow

September 2012 to May 2013

Pearson Assessments (Bloomington, MN)
Clinical Assessments
Project: Technical Evaluation of Behavioral and Intelligence Tests

RESEARCH INTERESTS

Educational data mining, learning analytics, computerized and digital assessments, psycho-educational assessments, and statistical programming using the R programming language

TEACHING EXPERIENCE

- Instructor and course developer, *Analyzing Survey Data with R* (Pluralsight)
- Instructor and course developer, *Reshaping Data with R* (Pluralsight)
- Instructor and course developer, *EDPY 607 Measurement Theory II* (U of Alberta)
- Instructor and course developer, *EDPY 504 Survey Design & Implementation* (U of Alberta)
- Instructor, *EDPY 303 Educational Assessment* (U of Alberta)
- Instructor, *EDPY 507 Measurement Theory I* (U of Alberta)
- Instructor, *EDPY 605 Quantitative Methods II* (U of Alberta)
- Instructor, *EDPY 501 Introduction to Data Analysis in Educational Research* (U of Alberta)

CURRENT
RESEARCH
GRANTS
(TOTAL AMOUNT:
\$1,532,590)

Improving Canadian Teachers' Assessment Literacy and Decision-Making through Self-Directed Professional Development

- **Role:** Principal Investigator
- **Grant Title:** Insight Grant
- **Funding Source:** Social Sciences and Humanities Research Council of Canada
- **Awarded Amount:** \$241,984 (2023-2028)

Enhancing Students' Reasoning and Decision-making Skills: Science, Values, and Contradictions in Socioscientific Contexts

- **Role:** Co-PI (PI: Mijung Kim - University of Alberta)
- **Grant Title:** Insight Grant
- **Funding Source:** Social Sciences and Humanities Research Council of Canada
- **Awarded Amount:** \$140,379 (2023-2028)

Identifying the Predictors of Mathematics Anxiety, Confidence, and Performance in Canada: An Educational Data Mining Approach

- **Role:** Principal Investigator
- **Grant Title:** Research Partnership Grant
- **Funding Source:** Alberta Education
- **Awarded Amount:** \$14,960 (2022-2024)

Examining Scoring Variability of the Casper Test: An Application of Explanatory Item Response Modeling

- **Role:** Principal Investigator
- **Grant Title:** Alo Grant
- **Funding Source:** Altus Assessments Inc.
- **Awarded Amount:** \$20,000 USD (2021-2024)

Factors Influencing Observers' Interpretations of School Principals' Gestures

- **Role:** Co-PI (PI: Darryl Hunter - University of Alberta)
- **Grant Title:** Killam Research Fund Research Cornerstone Grant
- **Funding Source:** University of Alberta
- **Awarded Amount:** \$48,000 (2023-2024)

Climate Change Surveillance for Chronic Health Effects in Vulnerable Populations

- **Role:** Co-Investigator (PI: Shelby Yamamoto - University of Alberta)
- **Grant Title:** Enhanced Surveillance for Chronic Disease Program
- **Funding Source:** Public Health Agency of Canada
- **Awarded Amount:** \$962,322 (2020-2024)

Preparing Cities for Climate Change

- **Role:** Co-Investigator (PI: Shelby Yamamoto - University of Alberta)
- **Grant Title:** Operating Grants: Data Analysis Using Existing Databases and Cohorts
- **Funding Source:** Canadian Institutes of Health Research
- **Awarded Amount:** \$98,271 (2022-2023)

PREVIOUS
RESEARCH
GRANTS
(TOTAL AMOUNT:
\$537,271)

Providing Students with a Voice: A Measure of Students' Socio-Emotional Well-Being to Optimize Learning for All Students

- **Role:** Principal Investigator
- **Grant Title:** Research Partnership Grant
- **Funding Source:** Alberta Education
- **Awarded Amount:** \$45,123 (2019-2022)

Automatic Generation of Passages for Reading Comprehension: An Artificial Intelligence Approach

- **Role:** Principal Investigator
- **Grant Title:** Support for the Advancement of Scholarship (SAS) Grant
- **Funding Source:** University of Alberta
- **Awarded Amount:** \$6,895 (2020-2021)

Integrating Theory and Practice to Enhance Inclusive Education in an Undergraduate Teacher Program

- **Role:** Co-Investigator (PI: Denyse Hayward - University of Alberta)
- **Grant Title:** Alberta Education Conditional Grant Funding
- **Funding Source:** Alberta Education
- **Awarded Amount:** \$49,276 (2018-2022)

Public Health Messaging Insights in Alberta During Wave 1 of COVID-19: A Complexity-Informed Mixed Methods Design for Rapid Response to Big Data Integration

- **Role:** Co-Investigator (PI: Cheryl Poth - University of Alberta)
- **Grant Title:** Support for the Advancement of Scholarship (SAS) Grant
- **Funding Source:** University of Alberta
- **Awarded Amount:** \$7,000 (2020-2021)

Climate Change, Older Adults and Immigrants: Exploring Community Vulnerability and Resilience

- **Role:** Co-Investigator (PI: Shelby Yamamoto - University of Alberta)
- **Grant Title:** Cities IPCC Legacy Research Grant Program
- **Funding Source:** The City of Edmonton & Alberta Ecotrust
- **Awarded Amount:** \$50,000 (2019-2021)

Improving the Quality and Quantity of Feedback via Interactive Score Reporting

- **Role:** Principal Investigator
- **Grant Title:** Teaching and Learning Enhancement Fund (TLEF)
- **Funding Source:** University of Alberta
- **Awarded Amount:** \$62,521 (2018-2021)

Building Community Climate Change Knowledge and Resilience in Older Adults and Immigrants

- **Role:** Co-Investigator (PI: Shelby Yamamoto - University of Alberta)
- **Grant Title:** North American Partnership for Environmental Community Action (NAPECA)
- **Funding Source:** Commission for Environmental Cooperation
- **Awarded Amount:** \$155,000 (2019-2021)

Developing an Interactive Score Reporting System to Improve the Quality of Formative Feedback in Higher Education

- **Role:** Principal Investigator
- **Grant Title:** Insight Development Grant
- **Funding Source:** Social Sciences and Humanities Research Council of Canada
- **Awarded Amount:** \$59,994 (2016-2019)

Effect of Detailed Score Reporting on Student Learning

- **Role:** Co-Investigator (PI: Vijay Daniels - University of Alberta)
- **Grant Title:** Teaching and Learning Enhancement Fund (TLEF)
- **Funding Source:** University of Alberta
- **Awarded Amount:** \$59,171 (2017-2019)

Examining the Measurement Properties of What Albertans Know about Fetal Alcohol Spectrum Disorders Survey

- **Role:** Principal Investigator
- **Grant Title:** SAGE Secondary Data Use Grant
- **Funding Source:** PolicyWise for Children & Families
- **Awarded Amount:** \$5,000 (2018-2019)

Trajectories in Student Mathematics Performance

- **Role:** Research Partner (PI: Lynn McGarvey - University of Alberta)
- **Grant Title:** The Research Partnership Program
- **Funding Source:** Alberta Education
- **Awarded Amount:** \$24,100 (2017-2018)

Improving Instructors' Understanding of Universal Student Ratings of Instruction (USRI) at the Faculty of Education: A Pilot Study

- **Role:** Principal Investigator
- **Grant Title:** Support for the Advancement of Scholarship (SAS) Grant
- **Funding Source:** University of Alberta
- **Awarded Amount:** \$6,807 (2017-2018)

Understanding Nonresponse Behaviours of Special Education Students in Reading and Mathematics Assessments Using Cognitive Diagnostic Modelling

- **Role:** Principal Investigator
- **Grant Title:** Support for the Advancement of Scholarship (SAS) Grant
- **Funding Source:** University of Alberta
- **Awarded Amount:** \$6,384 (2015-2016)

TRAVEL &
PROFESSIONAL
DEVELOPMENT
GRANTS

Teaching and Learning Enhancement Fund

- **Funding Source:** University of Alberta
- **Awarded amount:** \$2,860 (2018-2019)

Killam Research Fund – Cornerstones Grant Program

- **Funding Source:** University of Alberta
- **Awarded amount:** \$4,200 (2017-2018)

Support for the Advancement of Scholarship (SAS) Travel Grant

- **Funding Source:** University of Alberta
- **Awarded amount:** \$1,200 (2015-2016)

AWARDS

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| • Martha Cook Piper Research Prize by the University of Alberta | 2023 to 2024 |
| • Journal of Intelligence Young Investigator Award | 2022 to 2023 |
| • Coutts-Clarke Fellowship by University of Alberta | 2021 to 2022 |
| • Distinguished Paper Award by AERA | 2017 to 2018 |
| • Alicia Cascallar Outstanding Paper Award by NCME | 2015 to 2016 |
| • John P. Yackel/Pearson Assessment Graduate Fellowship | 2012 to 2013 |
| • Research Grant from Applied Psychological Measurement, Inc. | 2012 to 2013 |
| • Mary Corcoran Graduate Fellowship at the University of Minnesota | 2011 to 2012 |
| • Graduate Scholarship from the Turkish Ministry of National Education | 2007 to 2009 |

BOOKS

- [1] **Bulut, O.** & Demmans Epp, C. (In preparation). *Educational data mining: Methods, tools, and applications*. Boca Raton, FL: CRC Press.
- [2] **Bulut, O.** (2020). *Conducting Monte Carlo simulations in R*. University of Alberta Education and Research Archive. doi:10.7939/r3-y066-fs55
- [3] Desjardins, C. D., & **Bulut, O.** (2018). *Handbook of educational measurement and psychometrics using R*. Boca Raton, FL: CRC Press.

BOOK CHAPTERS

- [1] **Bulut, O.** (In press). From adaptive testing to personalized adaptive testing: Applications of recommender systems. In H. Jiao & R. W. Lissitz (Eds.), *Machine learning, natural language processing, and psychometrics*. Information Age Publisher.
- [2] **Bulut, O.** (In press). Creating value from process data: Implications for multistage testing. In D. Yan & D. J. Weiss (Eds.), *Research for practical issues and solutions in computerized multistage testing*. Taylor and Francis.
- [3] **Bulut, O.**, Gorgun, G., & Yildirim-Erbaşlı, S. (In press). Assessment analytics for digital assessments: Identifying, modeling, and interpreting behavioral engagement. In D. Ifenthaler & M. Sahin, *Assessment analytics in education - designs, methods and solutions*. Springer.
- [4] Yildirim-Erbaşlı, S., Gorgun, G., & **Bulut, O.** (2024). Enhancing self-regulated learning with artificial intelligence-powered learning analytics. In N. Kavaklı Ulutaş & D. Höl, *Emergent practices of learning analytics in K-12 classrooms* (pp. 57-83). Charlotte, NC: IGI Global. doi:10.4018/979-8-3693-0066-4.ch004
- [5] **Bulut, O.**, & Cui, Y. (2021). Validating the findings of a survey research study. In U. Luhanga & A. G. Harbaugh (Eds.), *Basic elements of survey research in education: Addressing the problems your advisor never told you about* (pp. 719-746). Information Age Publishing.
- [6] Gierl, M. J., **Bulut, O.**, & Zhang, X. (2018). Using computerized formative testing to support personalized learning in higher education: An application of two assessment technologies. In R. Zheng (Ed.), *Digital technologies and instructional design for personalized learning* (pp. 99-119). IGI Global.

NON-REFEREED ARTICLES

- [1] **Bulut, O.** (2021). Likert scales: Friend or foe? Towards Data Science. <https://towardsdatascience.com/>.
- [2] **Bulut, O.** (2021). AI can bring fairness to assessments but are we ready for it? Towards AI. <https://medium.com/towards-artificial-intelligence>.
- [3] **Bulut, O.** (2021). How AI will end the one-size-fits-all approach in human assessment. Towards AI. <https://medium.com/towards-artificial-intelligence>.
- [4] **Bulut, O.** (2021). Too many survey questions? Let ant colony optimization handle it. Towards Data Science. <https://towardsdatascience.com/>.
- [5] **Bulut, O.** (2021). Effective feature selection: Recursive feature elimination using R. Towards Data Science. <https://towardsdatascience.com/>.
- [6] **Bulut, O.** (2020). Testing for measurement invariance in R. Towards Data Science. <https://towardsdatascience.com/>.

- [1] **Bulut, O.**, Gorgun, G., & He, S. (In press). Unsupervised anomaly detection in sequential process data: Insights from PIAAC problem-solving tasks. *Zeitschrift für Psychologie*.
- [2] Firoozi, T., **Bulut, O.**, & Gierl, M. J. (2023). Language models in automated essay scoring: Insights for the Turkish language. *International Journal of Assessment Tools in Education*, 10(Special Issue), 53-67. doi:10.21449/ijate.1394194
- [3] Mazzullo, E., **Bulut, O.**, Wongvorachan, T., & Tan, B. (2023). Learning analytics in the era of large language models. *Analytics*, 2(4), 877-898. doi:10.3390/analytics2040046
- [4] **Bulut, O.**, Gorgun, G., & Karamese, H. (2023). Incorporating test-taking engagement into multistage adaptive testing design for large-scale assessments. *Journal of Educational Measurement*. Advance online publication. doi:10.1111/jedm.12380
- [5] Naeim, M. Y., **Bulut, O.**, & Tan, B. (2023). Predicting reading comprehension performance based on student characteristics and item properties. *Studies in Educational Evaluation*, 79, 101309. doi:10.1016/j.stueduc.2023.101309
- [6] **Bulut, O.**, Shin, J., Yildirim-Erbasli, S. N., Gorgun, G., & Pardos, Z. A. (2023). An introduction to Bayesian knowledge tracing with pyBKT. *Psych*, 5(3), 770-786. doi:10.3390/psych5030050
- [7] **Bulut, O.**, Gorgun, G., Wongvorachan, T., & Tan, B. (2023). Rapid guessing in low-stakes assessments: Finding the optimal response time threshold with random search and genetic algorithm. *Algorithms*, 16(2), 89. doi:10.3390/a16020089
- [8] **Bulut, O.**, Gorgun, G., Yildirim-Erbasli, S. N., Wongvorachan, T., Daniels, L. M., Gao, Y., Lai, K. W., & Shin, J. (2023). Standing on the shoulders of giants: Online formative assessments as the foundation for predictive learning analytics models. *British Journal of Educational Technology*, 54(1), 19-39. doi:10.1111/bjet.13276
- [9] **Bulut, O.**, Bulut, H. C., Cormier, D. C., Ilgun Dibek, M., & Sahin Kursad, M. (2023). The effects of providing students with revision opportunities in alternate assessments. *Educational Assessment*, 28(1), 48-63. doi:10.1080/10627197.2022.2138322
- [10] Gorgun, G., & **Bulut, O.** (2023). Incorporating test-taking engagement into the item selection algorithm in low-stakes computerized adaptive tests. *Large-Scale Assessments in Education*, 11, Article 27. doi:10.1186/s40536-023-00177-5
- [11] Yildirim-Erbasli, S. N., & **Bulut, O.** (2023). Conversation-based assessment: A novel approach to boosting test-taking effort in digital formative assessment. *Computers & Education: Artificial Intelligence*, 4, 100135. doi:10.1016/j.caeai.2023.100135
- [12] Archer, E., **Bulut, O.**, Zenisky, A., Grover, R., & Randall, J. (2023). Editorial for online assessment for humans: Advancements, challenges and futures for digital assessment. *Frontiers in Education*, 8(1230623). doi:10.3389/feduc.2023.1230623
- [13] Bulut, H. C., **Bulut, O.**, & Arikan, S. (2023). Evaluating group differences in online reading comprehension: The impact of item properties. *International Journal of Testing*, 23(1), 10-33. doi:10.1080/15305058.2022.2044821
- [14] Yildirim-Erbasli, S. N., **Bulut, O.**, Demmans Epp, C., & Cui, Y. (2023). Conversation-based assessments in education: Design, implementation, and cognitive walkthroughs for usability testing. *Journal of Educational Technology Systems*, 52(1), 27–51. doi:10.1177/00472395231178943
- [15] Kilmen, S., & **Bulut, O.** (2023). Scale abbreviation with recursive feature elimination and genetic algorithms: An illustration with the test emotions questionnaire. *Information*, 14(2), 63. doi:10.3390/info14020063

- [16] Cankaya, O., Rohatyn-Martin, N., Leach, J., Taylor, K., & **Bulut, O.** (2023). Preschool children's loose parts play and the relationship to cognitive development: A review of the literature. *Journal of Intelligence*, 11(8), 151. doi:10.3390/jintelligence11080151
- [17] Clelland, A., **Bulut, O.**, King, S., & Johnson, M. D. (2023). Examining the associations between personal protective equipment, training, policy, and acute care workers' psychological distress during the COVID-19 pandemic. *Psych*, 5(3), 802-813. doi:10.3390/psych5030053
- [18] Wongvorachan, T., He, S., & **Bulut, O.** (2023). A comparison of undersampling, oversampling, and SMOTE methods for dealing with imbalanced classification in educational data mining. *Information*, 14(1), 54. doi:10.3390/info14010054
- [19] McGrew, K. S., Schneider, W. J., Decker, S. L., & **Bulut, O.** (2023). A psychometric network analysis of CHC intelligence measures: Implications for research, theory and interpretation of broad CHC scores "beyond g". *Journal of Intelligence*, 11(1), 19. doi:10.3390/jintelligence11010019
- [20] Rinaldi, C. M., **Bulut, O.**, Muth, T., & Di Stasio, M. (2023). The influence of parenting dimensions and junior high school students' involvement in bullying. *Journal of School Violence*, 22(2), 183-197. doi:10.1080/15388220.2022.2162534
- [21] **Bulut, O.** (2022). Editorial: Special issue on artificial intelligence, machine learning, and natural language processing applications in education. *Journal of Applied Testing Technology*, 23(Special Issue 1), 1-3.
- [22] Firoozi, T., **Bulut, O.**, Demmans Epp, C., Abadi, A. N., & Barbosa, D. (2022). The effect of fine-tuned word embedding techniques on the accuracy of automated essay scoring systems using neural networks. *Journal of Applied Testing Technology*, 23(Special Issue 1), 21-29.
- [23] Gorgun, G., & **Bulut, O.** (2022). Identifying aberrant responses in intelligent tutoring systems: An application of anomaly detection methods. *Psychological Test and Assessment Modeling*, 64(4), 359-384.
- [24] Wongvorachan, T., **Bulut, O.**, Tsai, Y.-S., & Lindner, M. A. (2022). Improving student feedback literacy in e-assessments: A framework for the higher education context. *Trends in Higher Education*, 1(1), 16-29. doi:10.3390/higheredu1010002
- [25] Salma, J., Tilstra, M., Tiwari, I., Nielsen, C., Whitfield, K., Jones, A., Osornio Vargas, A., **Bulut, O.**, & Yamamoto, S. (2022). Listening to older adults' perspectives on climate change: A focus group study. *International Health Trends and Perspectives*, 2(3), 1-15. doi:10.32920/ihtp.v2i3.1697
- [26] **Bulut, O.**, & Yildirim-Erbasli, S. N. (2022). Automatic story and item generation for reading comprehension assessments with transformers. *International Journal of Assessment Tools in Education*, 9(Special Issue), 72-87. doi:10.21449/ijate.1124382
- [27] Wongvorachan, T., Lai, K. W., **Bulut, O.**, Tsai, Y.-S., & Chen, G. (2022). Artificial intelligence: Transforming the future of feedback in education. *Journal of Applied Testing Technology*, 23(Special Issue 1), 95-116.
- [28] Violato, E., **Bulut, O.**, & King, S. (2022). The initial evaluation of a scale for measuring interprofessional perspective taking. Available at <http://ssrn.com/abstract=4197308>
- [29] Yurekli, H., Yiğit, Ö. E., **Bulut, O.**, Lu, M., & Öz, E. (2022). Exploring factors that affect student well-being during the COVID-19 pandemic: A comparison of data mining approaches. *International Journal of Environmental Research and Public Health*, 19(18), 11267. doi:10.3390/ijerph191811267

- [30] Hachem, M., Gorgun, G., Chu, M-W., & **Bulut, O.** (2022). Social and emotional variables as predictors of students' perceived cognitive competence and academic performance. *Canadian Journal of School Psychology*, 37(4), 362-384. doi:10.1177/08295735221118474
- [31] Xiao, J., & **Bulut, O.** (2022). Item selection with collaborative filtering in on-the-fly multistage adaptive testing. *Applied Psychological Measurement*, 46(8), 690–704. doi:10.1177/01466216221124089
- [32] **Bulut, O.**, Cormier, D. C., & Yildirim-Erbasli, S. N. (2022). Optimized screening for students at-risk in mathematics: A machine learning approach. *Information*, 13(8), 400. doi:10.3390/info13080400
- [33] **Bulut, O.**, Shin, J., & Cormier, D. C. (2022). Learning analytics and computerized formative assessments: An application of Dijkstra's shortest path algorithm for personalized test scheduling. *Mathematics*, 10(13), 2230. doi:10.3390/math10132230
- [34] Gao, Y., Zhai, X., **Bulut, O.**, Cui, Y., & Sun, X. (2022). Examining humans' problem-solving styles in technology-rich environments using log file data. *Journal of Intelligence*, 10(3), 38. doi:10.3390/jintelligence10030038
- [35] Ulitzsch, E., Yildirim-Erbasli, S. N., Gorgun, G., & **Bulut, O.** (2022). An explanatory mixture IRT model for careless and insufficient effort responding in self-report measures. *British Journal of Mathematical and Statistical Psychology*. Advance online publication. doi:10.1111/bmsp.12272
- [36] Kilmen, S., & **Bulut, O.** (2022). Group differences in the Emotion Regulation During Test-Taking Scale: An explanatory item response modeling approach. *Current Psychology*. Advance online publication. doi:10.1007/s12144-022-03202-y
- [37] Yildirim-Erbasli, S. N., & **Bulut, O.** (2022). Designing predictive models for early prediction of students' test-taking engagement in computerized formative assessments. Advance online publication. *Journal of Applied Testing Technology*.
- [38] Buyukkidik, S., & **Bulut, O.** (2022). Analyzing the effects of test, student, and school predictors on science achievement: An explanatory IRT modeling approach. *Journal of Measurement and Evaluation in Education and Psychology*, 13(1), 40-53. doi:10.21031/epod.1013784
- [39] **Bulut, O.**, & Poth, C. N. (2022). Rapid assessment of communication consistency: Sentiment analysis of public health briefings during the COVID-19 pandemic. *AIMS Public Health*, 9(2), 293-306. doi:10.3934/publichealth.2022020
- [40] Bulut, H. C., & **Bulut, O.** (2022). Item wording effects in self-report measures and reading achievement: Does removing careless respondents help? *Studies in Educational Evaluation*, 72, 101126. doi:10.1016/j.stueduc.2022.101126
- [41] Cormier, D. C., **Bulut, O.**, McGrew, K. S., & Kennedy, K. (2022). Linguistic influences on cognitive test performance: Examinee characteristics are more important than test characteristics. *Journal of Intelligence*, 10(1), 8. doi:10.3390/jintelligence10010008
- [42] Gao, Y., Cui, Y., **Bulut, O.**, Zhai, X., & Chen, F. (2022). Examining adults' web navigation patterns in multi-layered hypertext environments. *Computers in Human Behavior*, 129, 107142. doi:10.1016/j.chb.2021.107142
- [43] **Bulut, O.**, & Kennedy, K. E. (2022). Measuring and understanding public awareness of fetal alcohol spectrum disorders in Alberta, Canada. *Journal of Public Health*, 30, 1693–1700. doi:10.1007/s10389-021-01550-w

- [44] Shin, J., Chen, F., Lu, C., & **Bulut, O.** (2022). Analyzing students' performance in computerized formative assessments to optimize teachers' test administration decisions using deep learning frameworks. *Journal of Computers in Education*, 9, 71–91. doi:10.1007/s40692-021-00196-7
- [45] Butterfuss, R., Kendeou, P., McMaster, K. L., Orcutt, E., & **Bulut, O.** (2022). Question timing, language comprehension, and executive function in inferencing. *Scientific Studies of Reading*, 26(1), 61-78. doi:10.1080/10888438.2021.1901903
- [46] Violato, E., King, S., & **Bulut, O.** (2022). Conformity, obedience, and the better than average effect in health professional students. *Canadian Medical Education Journal*, 13(1), 55-64. doi:10.36834/cmej.71970
- [47] Yildirim-Erbasli, S. N., & **Bulut, O.** (2021). Conversation-based assessments: Real-time assessment and feedback. *eLearn Magazine*, 12, Article 1. doi:10.1145/3495533
- [48] **Bulut, O.** (2021). Beyond multiple-choice with digital assessments. *eLearn Magazine*, 2021(Special Issue), 1-10. doi:10.1145/3472394
- [49] Yildirim-Erbasli, S. N., & **Bulut, O.** (2021). The impact of students' test-taking effort on growth estimates in low-stakes educational assessments. *Educational Research and Evaluation*, 26(7-8), 368-386. doi:10.1080/13803611.2021.1977152
- [50] Daniels, V., Ortiz, S., Sandhu, G., Lai, H., Yoon, M., **Bulut, O.**, & Hillier, T. (2021). Effect of detailed OSCE score reporting on learning and anxiety in medical school. *Journal of Medical Education and Curricular Development*, 8, 1-8. doi:10.1177/2382120521992323
- [51] Gao, Y., Zhai, X., Cui, Y., Xin, T., & **Bulut, O.** (2021). Re-validating a learning progression of buoyancy for middle school students. *Research in Science Education*. Advance online publication. doi:10.1007/s11165-021-10021-x
- [52] **Bulut, O.**, Gorgun, G., & Yildirim-Erbasli, S. N. (2021). Estimating explanatory extensions of dichotomous and polytomous Rasch models: The eirm package in R. *Psych*, 3(3), 308-321. doi:10.3390/psych3030023
- [53] **Bulut, O.**, Cormier, D. C., Aquilina, A. M., & Bulut, H. C. (2021). Age and sex invariance of the Woodcock-Johnson IV Tests of Cognitive Abilities: Evidence from psychometric network modeling. *Journal of Intelligence*, 9(3), 1-16. doi:10.3390/jintelligence9030035
- [54] Shin, J., & **Bulut, O.** (2021). Building an intelligent recommendation system for personalized test scheduling: A reinforcement learning approach. *Behavior Research Methods*. Advance online publication. doi:10.3758/s13428-021-01602-9
- [55] Poth, C., **Bulut, O.**, Aquilina, A., & Otto, S. (2021). Using data mining for rapid complex case study descriptions: Example of public health briefings during the onset of the COVID-19 pandemic. *Journal of Mixed Methods Research*, 15(3), 348-373. doi:10.1177/15586898211013925
- [56] Tilstra, M., Tiwari, I., Niwa, L., Campbell, S., Nielson, C., Jones, A., Osornio Vargas, A., **Bulut, O.**, Quemerais, B., Salma, J., Whitfield, K., & Yamamoto, S. (2021). Risk and resilience: How is the health of older adults and immigrant people living in Canada impacted by climate- and air pollution-related exposures? *International Journal of Environmental Research and Public Health*, 18(20), 10575. doi:10.3390/ijerph182010575
- [57] **Bulut, O.**, & Kim, D. (2021). The use of data imputation when investigating dimensionality in sparse data from computerized adaptive tests. *Journal of Applied Testing Technology*, 22(2), 1-13.

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- [2] Yildirim-Erbasli, S. N., Demmans Epp, C., **Bulut, O.**, & Cui, Y. (2023). Design and evaluation of a conversational agent for formative assessment in higher education. In P. Blikstein, J. Van Aalst, R. Kizito, & K. Brennan (Eds.), *Proceedings of the 17th International Conference of the Learning Sciences* (pp. 194-201), Montreal, QC, Canada: International Society of the Learning Sciences.
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- [4] **Bulut, O.**, MacIntosh, A., & Walsh, C. (2022). Leveraging natural language processing for quality assurance of a situational judgement test. In M. M. Rodrigo, N. Matsuda, A. I. Cristea, & V. Dimitrova (Eds.), *Artificial intelligence in education. Posters and late breaking results, workshops and tutorials, industry and innovation Tracks, practitioners' and doctoral consortium* (pp. 84-88). Lecture Notes in Computer Science, vol 13356. Springer, Cham. doi:[10.1007/978-3-031-11647-6_](https://doi.org/10.1007/978-3-031-11647-6_)
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- [8] Wongvorachan, T., & **Bulut, O.** (2022). Feedback generation through artificial intelligence. In A. Bozkurt, T. Greene, & V. Irvine (Eds.), *Proceedings of the Open/Technology in Education, Society, and Scholarship Association (OTESSA) Conference, 2(1)*, 1-9. doi:10.18357/otessac.2022.2.1.125
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- [4] **Bulut, O.**, & Cormier, D. C. (2016). *Developing psychometrically sound decision rules for STAR Math*. Wisconsin Rapids, WI: Renaissance Learning Inc.
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COMPUTER SOFTWARE

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- [3] Desjardins, C. D., & **Bulut, O.** (2018). *hemp: Handbook of educational measurement and psychometrics using R companion package*. Available from <https://github.com/cddesja/hemp>.

CONFERENCE
PRESENTATIONS &
POSTERS
(LAST 5 YEARS)

- [1] Yildirim-Erbaşlı, S. N., & **Bulut, O.** (2023, July). *Innovating assessment with conversational agents: A technology-enhanced approach to formative assessments*. Paper presented at the 23rd IEEE International Conference on Advanced Learning Technologies, Orem, UT.
- [2] **Bulut, O.**, & Gorgun, G. (2023, June). *Utilizing response time for scoring the TIMSS 2019 problem solving and inquiry tasks*. Paper presented at the IEA International Research Conference (IEA IRC), Dublin, Ireland.
- [3] **Bulut, O.**, Gorgun, G., Tan, B., Wongvorachan, T., Yildirim-Erbaşlı, S., & Clelland, A. (2023, June). *Self-regulated learning through online formative assessments: The effects of assessment frequency and participation on student performance*. Paper presented at the annual meeting of the International Society of the Learning Sciences, Montréal, QC.
- [4] Yildirim-Erbaşlı, S. N., Demmans Epp, C., **Bulut, O.**, & Cui, Y. (2023, June). *Design and evaluation of a conversational agent for formative assessment in higher education*. Paper presented at the annual meeting of the International Society of the Learning Sciences, Montréal, QC.
- [5] Rinaldi, C., Keys, K., **Bulut, O.**, Gokiart, R., & Howe, N. (2023, June). *From puzzles to put away: Examining affect and responsiveness in parent-toddler interactions across different task contexts*. Poster presented at the annual conference of the Jean Piaget Society, Madrid, Spain.
- [6] Steele, B. J., Sidney, B., Menard, K., **Bulut, O.**, Lowe, S., Pabayo, R., & Yamamoto, S. (2023, June). *Development and initial validation of the ACCLIMATES surveillance tool: Assessing climate change-related chronic disease vulnerability in Alberta, Canada*. Poster presented at the annual meeting of the Society for Epidemiologic Research, Portland, OR, USA.
- [7] **Bulut, O.**, MacIntosh, A., & Walsh, C. (2023, April). *Utilizing NLP techniques for collecting validity evidence for a situational judgement test*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [8] **Bulut, O.**, Yildirim-Erbaşlı, S. N., He, S., Tan, B., & Gao, Y. (2023, April). *Adaptive item recommendation using process data and examinee background characteristics*. In Q. He & O. Bulut (Chairs), Empowering process data for data-informed decision-making in measurement. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [9] Gorgun, G., **Bulut, O.**, & Wongvorachan, T. (2023, April). *Detecting rapid guessing: In search of the optimal response time threshold*. In E. Ulitzsch & J. Rios (Chairs), Methodological advances in detecting and accounting for noneffortful responding. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [10] Yildirim-Erbaşlı, S. N., **Bulut, O.**, & Cui, Y. (2023, April). *Conversation-based assessments: Enhancing students' experiences of formative assessment via human-like interaction*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [11] Bulut, H. C., & **Bulut, O.** (2023, April). *Exploring added-value of response times for low-stakes assessments with nested logit models*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [12] Gorgun, G., Wongvorachan, T., Tan, B., & **Bulut, O.** (2023, April). *Predicting item difficulty from students' response behaviors*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.

- [13] Goodrich, S., & **Bulut, O.** (2023, April). *Dynamic, on-the-fly, and hybrid multistage testing with the bi-factor model*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [14] Kilmen, S., **Bulut, O.**, & Shin, J. (2023, April). *Creating short forms of psychological scales: Semantic similarity matters*. Poster presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [15] Yildirim-Erbasli, S. N., Gorgun, G., & **Bulut, O.** (2023, April). *Automatic item paraphrasing to avoid the repetitive use of the same items*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [16] Sayin, A., & **Bulut, O.** (2023, April). *Estimating item difficulty: What variables do subject matter experts use?* Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [17] He, S., Wongvorachan, T., **Bulut, O.**, & Lai, K.-W. (2023, March). *Identifying early warning indicators for high school dropouts*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [18] Tan, B., **Bulut, O.**, Gorgun, G., & Wongvorachan, T. (2023, March). *Mining textual features of questions to predict item parameters*. Poster presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [19] Wongvorachan, T., He, S., Lai, K. W., & **Bulut, O.** (2023, March). *A comparison of sampling methods for imbalanced classifications in educational datasets*. Poster presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [20] Wongvorachan, T., **Bulut, O.**, Gorgun, G., & Tan, B. (2023, March). *Random search algorithm to identify response time thresholds for rapid guessing*. Paper presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- [21] Rinaldi, C., Martinovich, V., Durber, C., & **Bulut, O.** (2023, March). *Mothers' and fathers' parenting and involvement reports from preschool to first grade*. Poster presented at the Society for Research in Child Development Biennial Meeting, Salt Lake City, Utah.
- [22] MacIntosh, A., Walsh, C., & **Bulut, O.** (2022, August). *Using natural language processing to understand the multidimensionality of professionalism through a constructed-response situational judgement test*. Paper presented at the Ottawa 2022 conference.
- [23] Wongvorachan, T., Poth, C., **Bulut, O.**, & Otto, S. (2022, August). *Leveraging open data sources in mixed methods research*. Paper presented at the biennial global conference of the Mixed Methods International Research Association (MMIRA).
- [24] Shin, J., **Bulut, O.**, & Pinto, W. N. (2022, July). *E-learning preparedness: A key consideration to promote fair learning analytics development in higher education*. Paper presented at the Educational Data Mining Conference, Durham, UK.
- [25] **Bulut, O.**, MacIntosh, A., & Walsh, C. (2022, July). *Leveraging natural language processing for quality assurance of a situational judgement test*. Paper presented at the annual meeting of the Artificial Intelligence in Education, Durham, UK.
- [26] Ulitzsch, E., Yildirim-Erbasli, S. N., Gorgun, G. & **Bulut, O.** (2022, July). *An explanatory mixture IRT model for careless and insufficient effort responding in self-report measures*. Paper presented at the annual meeting of the Psychometric Society, Bologna, Italy.

- [27] McCabe, E., Gross, D. P., & **Bulut, O.** (2022, June). *Improving the efficiency of patient-reported outcome measurement: Procedures for developing a computerized adaptive test to assess physical functioning*. Paper presented at the Canadian Association for Health Services and Policy Research Conference.
- [28] Hachem, M., Gorgun, G., Chu, M-W., & **Bulut, O.** (2022, April). *Social and emotional variables as predictors of students' perceived cognitive competence and academic performance*. Paper presented at the uLead Summit of Educational Leadership, Banff, AB.
- [29] Deforge, K., Seitz, P., **Bulut, O.**, Chu, M-W., Gorgun, G., & Hachem, M. (2022, April). *Giving students a voice: A measure of students' socio-emotional wellbeing to optimize learning for all students*. Paper presented at the uLead Summit of Educational Leadership, Banff, AB.
- [30] **Bulut, O.**, & Yildirim-Erbasli, S. N. (2022, April). *Detecting careless responses with the rapid guessing-slow responding method*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
- [31] Bulut, H. C., & **Bulut, O.** (2022, April). *A network psychometrics approach for detecting item wording effects across subgroups*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
- [32] Gorgun, G., & **Bulut, O.** (2022, April). *A smarter CAT: Integrating engagement into the CAT item selection algorithm*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
- [33] Firoozi, T., Abadi, A. N., Demmans Epp, C., **Bulut, O.**, & Barbosa, D. (2022, April). *The effect of word vector representation and linguistic features on the accuracy of automated essay scoring systems using neural networks*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
- [34] Yildirim-Erbasli, S. N., Gorgun, G., Gao, Y., & **Bulut, O.** (2022, April). *Sequential pattern mining to understand time management strategies in online courses*. Poster presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
- [35] Ulitzsch, E., Yildirim-Erbasli, S. N., Gorgun, G. & **Bulut, O.** (2022, April). *An explanatory mixture IRT model for careless responding in survey data*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.
- [36] Tobias, A. D., Cutumisu, M., & **Bulut, O.** (2022, April). *Estimating classification accuracy and decision consistency with classdecision*. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- [37] **Bulut, O.**, Yildirim-Erbasli, S. N., Gorgun, G., Gao, Y., Wongvorachan, T., Lai, K. W., & Shin, J. (2022, March). *Leveraging online formative assessments to enhance predictive learning analytics models*. Paper presented at the International Conference on Learning Analytics and Knowledge (LAK2022).
- [38] Walsh, C., MacIntosh, A., **Bulut, O.**, & Shin, J. (2022, March). *What are we measuring?: A topic modeling framework to map professionalism aspects to responses in a situational judgment test*. Poster presented at the International Conference on Learning Analytics and Knowledge (LAK2022).
- [39] Nielsen, C., Tilstra, M., **Bulut, O.**, Vargas, A. O., & Yamamoto, S. (2022, April). *Community climate change health tool for populations experiencing higher vulnerability*. Paper presented at the Geodesign Summit.

- [40] Yildirim-Erbasli, S. N., & **Bulut, O.** (2022, January). *A conversational agent to measure student learning: Conversation-based assessment*. Poster presented at the Advancing Assessment and Evaluation Conference (AAEC).
- [41] Wongvorachan, T., Lai, K.W., **Bulut, O.**, Tsai, Y. S. (2022, January). *Feedback literacy framework in the e-assessment context*. Poster presented at the Advancing Assessment and Evaluation Conference (AAEC).
- [42] Gorgun, G. & **Bulut, O.** (2022, January). *Customizing item selection with engagement in computerized-adaptive tests*. Poster presented at the Advancing Assessment and Evaluation Conference (AAEC).
- [43] **Bulut, O.**, & Yildirim-Erbasli, S. (2021, November). Real-time assessment and feedback for real-time learning. Paper presented at the Beyond Multiple Choice Conference.
- [44] Yildirim-Erbasli, S. N., & **Bulut, O.** (2021, October). *Automatic story generation for reading comprehension*. Poster presented at the annual meeting of the National Council on Measurement in Education (NCME) Special Conference on Classroom Assessment.
- [45] Nielsen, C. C., Tilstra, M., **Bulut, O.**, Vargas, A. R. O., & Yamamoto, S. (2021, June). *Spatiotemporal hot spot associations of climate-related health and urban environment*. Paper presented at the annual conference of the Canadian Association of Geographers.
- [46] Tilstra, M., Nielsen, C., Tiwari, I., Jones, A., Quemerais, B., Vargas, A. O., **Bulut, O.**, Salma, J., & Yamamoto, S. (2021, June). *Characterizing local climate change vulnerability: Impacts of climatic and air pollution exposures on older adults and immigrants in Edmonton, Alberta*. Paper presented at the annual meeting of the Canadian Society for Epidemiology and Biostatistics.
- [47] **Bulut, O.**, Cormier, D. C., & Shin, J. (2021, June). *The end of one-size-fits-all testing: Personalizing test schedules with recommender systems*. Paper presented at the annual meeting of the National Council on Measurement in Education.
- [48] Gorgun, G., Yildirim Erbasli, S. N., & **Bulut, O.** (2021, June). *An application of explanatory IRT to predict factors contributing to rapid guessing*. Paper presented at the annual meeting of the National Council on Measurement in Education.
- [49] Yildirim Erbasli, S. N., Gorgun, G., & **Bulut, O.** (2021, June). *Detecting rapid guessing: A new method utilizing response time and accuracy*. Paper presented at the annual meeting of the National Council on Measurement in Education.
- [50] Yizhu, G., **Bulut, O.**, & Cui, Y. (2021, June). *Diagnosing adult information problem solving strategy by mining clickstream data*. Paper presented at the annual meeting of the National Council on Measurement in Education.
- [51] Yizhu, G., Xiaoming, Z., **Bulut, O.**, & Cui, Y. (2021, June). *Understanding problem-solving styles in technology-rich environments by log data analysis*. Poster presented at the annual meeting of the National Council on Measurement in Education.
- [52] Bulut, H. C., Arikan, S., & **Bulut, O.** (2021, June). *Student and item characteristics in online reading comprehension: Polytomous explanatory IRT modeling*. Paper presented at the annual meeting of the National Council on Measurement in Education.
- [53] Firoozi, T., Shin, J., **Bulut, O.**, & Gierl, M. J. (2021, June). *The effect of option similarity on the item difficulty of a reading comprehension test: An application of word embedding techniques*. Paper presented at the annual meeting of the National Council on Measurement in Education.

- [54] Philippot, C. M., Antoniuk, A., Cormier, D. C., Yildirim-Erbasli, S. N., & **Bulut, O.** (2021, June). *Opening the vault: Using a projective measure to access the financial attitudes of young people*. Poster presented at the annual national conference of the Canadian Psychological Association.
- [55] Antoniuk, A., Philippot, C. M., Cormier, D. C., Yildirim-Erbasli, S. N., & **Bulut, O.** (2021, June). *Measuring financial literacy: Investing in positive financial futures*. Poster presented at the annual national conference of the Canadian Psychological Association.
- [56] **Bulut, O.**, & Lee, S. (2020, April). *Early detection of high school dropout: A deep learning approach with Keras*. Paper submitted to the annual meeting of the National Council on Measurement in Education, San Francisco, CA [Conference canceled due to COVID-19].
- [57] Cormier, D. C., **Bulut, O.**, & Stickney, E. (2020, April). *Using machine learning approaches to optimize screening for mathematics difficulties*. Paper submitted to the annual meeting of the National Council on Measurement in Education, San Francisco, CA [Conference canceled due to COVID-19].
- [58] Lu, C., **Bulut, O.**, Epp, C. D., & Gierl, M. J. (2020, April). *Identifying online learning behaviors using log data from learning management systems*. Paper submitted to the annual meeting of the National Council on Measurement in Education, San Francisco, CA [Conference canceled due to COVID-19].
- [59] Shin, J., Chen, F., Lu, C., & **Bulut, O.** (2020, April). *Automating test administration decisions in computerized formative assessment*. Paper submitted to the annual meeting of the National Council on Measurement in Education, San Francisco, CA [Conference canceled due to COVID-19].
- [60] Gao, Y., Erbasli, S. N. Y., & **Bulut, O.** (2020, April). *Comparison of the performance of feature selection methods in predicting bullying behaviors*. Paper submitted to the annual meeting of the National Council on Measurement in Education, San Francisco, CA [Conference canceled due to COVID-19].
- [61] Kim, J., **Bulut, O.**, McMaster, K. L., & Kendeou, P. (2020, April) *Development and initial validation of the Minnesota Inference Assessment* [Poster Session]. Poster submitted to the annual meeting of the American Educational Research Association, San Francisco, CA. <http://tinyurl.com/rl4kc7r> [Conference canceled due to COVID-19]
- [62] Rinaldi, C. M., **Bulut, O.**, Walker, M., & Beeby, A. M. (2020, May). *The stability of parenting in early childhood*. Poster submitted to the annual convention of the Canadian Psychological Association, Montreal, QC. [Conference canceled due to COVID-19]
- [63] Rinaldi, C. M., Muth, T., **Bulut, O.**, & Di Stasio, M. (2020, May). *Parenting influences on bullying in adolescence*. Poster submitted to the annual convention of the Canadian Psychological Association, Montreal, QC. [Conference canceled due to COVID-19]
- [64] Kennedy, K. E., & **Bulut, O.** (2020, May). *Examining the measurement properties of the 2017 What Albertans Know about Fetal Alcohol Spectrum Disorders Survey*. Paper submitted to the annual convention of the Canadian Psychological Association, Montreal, QC. [Conference canceled due to COVID-19]
- [65] Parilla, R., Wijayathilake, M., **Bulut, O.**, & Nag, S. (2019, July). *Impact of symbol and child characteristics on Akshara recognition*. Poster presented at the annual meeting of Society for the Scientific Study of Reading, Toronto, ON, Canada.
- [66] Xiao, J., & **Bulut, O.** (2019, June). *The performance of missing data imputation methods to estimate ability parameters*. Paper presented at the annual meeting of the Canadian Society for the Study of Education, Vancouver, BC, Canada.

- [67] Shin, J., **Bulut, O.**, & Gierl, M. J. (2019, May). *Development practices of trusted AI systems among Canadian data scientists*. Paper presented at the AI, Ethics and Society Conference, Edmonton, AB, Canada.
- [68] McCabe, E., Gross, D. P., & **Bulut, O.** (2019, May). *Development of a computerized adaptive test to assess patient-reported physical functioning*. Paper presented at the World Confederation for Physical Therapy Congress, Geneva, Switzerland.
- [69] Georgiou, G. K., **Bulut, O.**, & Dunn, K. (2019, April). *A neurocognitive approach to the identification of superior readers and mathematicians*. Poster presented at the annual Joseph R. Royce Psychology Research Conference, Edmonton, AB, Canada.
- [70] Odell, B., Galovan, A., **Bulut, O.**, & Cutumisu, M. (2019, April). *Using novel structural equation models to explore the effect of technology on mathematics for students in the Program for International Student Assessment 2015*. Paper presented at the annual meeting of the American Educational Research Association, Toronto, ON, Canada.
- [71] **Bulut, O.**, Celik, H., & Lei, M. (2019, April). *Understanding response processes in noncognitive measures with explanatory item response modeling*. Paper presented at the annual meeting of the National Council on Measurement in Education, Toronto, ON, Canada. Download
- [72] **Bulut, O.**, & Cutumisu, M. (2019, April). ExamVis: A score reporting system for visual communication of test results. In O. Bulut (Chair), *Communicating assessment results: How to inform decision-making in education*. Paper presented at the annual meeting of the National Council on Measurement in Education, Toronto, ON, Canada.
- [73] Daniels, L. M., **Bulut, O.**, & Gierl, M. J. (2019, April). Immediate score reporting: Pausing to consider the motivational and emotional consequences for students. In O. Bulut (Chair), *Communicating assessment results: How to inform decision-making in education*. Paper presented at the annual meeting of the National Council on Measurement in Education, Toronto, ON, Canada.
- [74] Cetin-Berber, D. D., **Bulut, O.**, & Huggins-Manley, A. C. (2019, April). *Nominal response model to address missingness in multistage adaptive testing*. Poster presented at the annual meeting of the National Council on Measurement in Education, Toronto, ON, Canada.
- [75] Xiao, J., **Bulut, O.**, & Rodriguez, M. C. (2019, April). *Nonresponse issue in noncognitive measures: Validity approach using explanatory item response modeling*. Paper presented at the annual meeting of the National Council on Measurement in Education, Toronto, ON, Canada. Download
- [76] Xiao, J., & **Bulut, O.** (2019, April). *The performance of recursive partitioning methods for dealing with missing responses*. Poster presented at the annual meeting of the National Council on Measurement in Education, Toronto, ON, Canada.
- [77] Lu, C., & **Bulut, O.** (2019, April). *Does valuing collaboration lead to greater success in collaborative problem solving?* Paper presented at the annual meeting of the National Council on Measurement in Education, Toronto, ON, Canada.
- [78] Ortiz, S., Daniels, V. J., Lai, H., Yoon, M., **Bulut, O.**, & Hillier, T. (2019, April). *Effect of detailed OSCE score reporting on student learning*. Paper presented at the Canadian Conference on Medical Education, Niagara Falls, ON, Canada.
- [79] Wagner, K., Kendeou, P., McMaster, K. L., & **Bulut, O.** (2019, April). *Development of a technology-based tool for assessing inference making in young children*. Paper presented at the 2019 annual meeting of American Educational Research Association, Toronto, ON, Canada.

- [80] Wagner, K., Kendeou, P., McMaster, K., & **Bulut, O.** (2019, February). *Creating a technology-based assessment of early inferencing*. Poster presented at the Pacific Coast Research Conference, San Diego, CA.
- [81] Büyükkıdık, S., Bakırarar, B., & **Bulut, O.** (2018, September). *Comparing the performance of data mining methods in classifying successful students with scientific literacy in PISA 2015*. Paper presented at the International Congress on Measurement and Evaluation in Education and Psychology, Prizren, Kosovo.
- [82] **Bulut, O.**, Aquilina, A., & Singh, D. (2018, July). *An interactive score reporting system for improving the quality of formative feedback*. Paper presented at the International Testing Commission Conference, Montreal, QC, Canada.
- [83] **Bulut, O.**, Cutumisu, M., Singh, D., & Aquilina, A. (2018, July). *Guidelines for generating effective feedback from computer-based assessments*. Paper presented at the International Testing Commission Conference, Montreal, QC, Canada.
- [84] Yavuz, H. C., **Bulut, O.**, Ilgun Dibek, M., & Sahin Kursad, M. (2018, July). *Providing revision opportunities in alternate assessments: An application of sequential IRT*. Paper presented at the International Testing Commission Conference, Montreal, QC, Canada.
- [85] Ilgun Dibek, M., **Bulut, O.**, Sahin Kursad, M., & Yavuz, H. C. (2018, July). *Should students with disabilities have multiple opportunities in answering items?* Paper presented at the International Testing Commission Conference, Montreal, QC, Canada.
- [86] Flanagan, A., Cormier, D. C., & **Bulut, O.** (2018, June). *Teachers' expectations matter: Implications for Canadian students of different ethnic groups*. Paper presented at the International Congress of Applied Psychology (ICAP), Montreal, QC, Canada.
- [87] Flanagan, A., Cormier, D. C., **Bulut, O.**, & Antoniuk, A. (2018, June). *Tis the season to regress academically? Winter seasonal effects on academic achievement*. Paper presented at the International Congress of Applied Psychology (ICAP), Montreal, QC, Canada.
- [88] Aquilina, A., **Bulut, O.**, & Cormier, D. C. (2018, June). *An examination of child and adolescent sex differences within general and broad CHC cognitive abilities*. Poster presented at the International Congress of Applied Psychology (ICAP), Montreal, QC, Canada.
- [89] Kennedy, K. E., Cormier, D. C., Pei, J., Mattson, D., **Bulut, O.**, & Rasmussen, C. (2018, June). *Understanding challenges to progress monitoring: Key findings from the Mathematics Interactive Learning Experience (MILE)*. Paper presented at the International Congress of Applied Psychology (ICAP), Montreal, QC, Canada.
- [90] Gierl, M. J., **Bulut, O.**, Guo, Q., & Zhang, X. (2018, April). *Developing, analyzing, and using distractors for multiple-choice medical testing: A comprehensive review*. Paper presented at the Canadian Conference on Medical Education (CCME), Halifax, NS, Canada.
- [91] **Bulut, O.** (2018, April). *Cultural and historic influences on national assessment and accountability systems*. Invited talk given at the annual meeting of the American Educational Research Association, New York, NY.
- [92] Shin, J., **Bulut, O.**, & Gierl, M. J. (2018, April). *Examining the effect of best distractor location on item difficulty*. Paper presented at the annual meeting of the National Council on Measurement in Education, New York, NY.

- [93] Lei, M., **Bulut, O.**, & Jang, H. (2018, April). *Detecting multidimensional differential item functioning*. Paper presented at the annual meeting of the National Council on Measurement in Education, New York, NY.
- [94] Rodriguez, M. C., **Bulut, O.**, Cabrera, J., & Vue, K. (2018, April). *Response processes in noncognitive measures: Validity evidence from explanatory item response modeling*. Paper presented at the annual meeting of the National Council on Measurement in Education, New York, NY.
- [95] Zamora, J. R. P., **Bulut, O.**, Cabrera, J., & Kang, Y. (2018, April). *Measurement invariance in noncognitive measures: Validity approach using explanatory item response modeling*. Paper presented at the annual meeting of the National Council on Measurement in Education, New York, NY.

SUPERVISION EXPERIENCE

- Ashley Clelland (Ph.D., Educational Psychology, University of Alberta)
Role: Co-supervisor
Thesis Title: TBD
Graduation Date: Fall 2025 (Expected)
- Tarid Wongvorachan (Ph.D., Educational Psychology, University of Alberta)
Role: Supervisor
Thesis Title: TBD
Graduation Date: Fall 2024 (Expected)
- Guher Gorgun (Ph.D., Educational Psychology, University of Alberta)
Role: Supervisor
Thesis Title: An Automatic Item Quality Evaluation Approach for Automatically Generated Assessment Items
Graduation Date: Fall 2023 (Expected)
- Xinle (Joyce) Liu (M.Ed., Educational Psychology, University of Alberta)
Role: Supervisor
Thesis Title: TBD
Graduation Date: Winter 2025 (Expected)
- Tirzah Lyons (M.Ed., Educational Psychology, University of Alberta)
Role: Co-supervisor
Thesis Title: TBD
Graduation Date: Fall 2023 (Expected)
- Bin Tan (M.Ed., Educational Psychology, University of Alberta)
Role: Supervisor
Thesis Title: Predicting Test Scores in Digital Assessment Environments: Seeing the Value of Response Time
Graduation Date: Fall 2023
- Ashley Clelland (M.Ed., Educational Psychology, University of Alberta)
Role: Co-supervisor
Thesis Title: A multi-method investigation of educational activities for hospital-based healthcare providers during the COVID-19 pandemic
Graduation Date: Fall 2022
- Seyma Nur Yildirim Erbasli (Ph.D., Educational Psychology, University of Alberta)
Role: Co-supervisor
Thesis Title: Conversation-Based Assessments: Measuring Student Learning with Human-Like

Communication

Graduation Date: Winter 2022

- Karen Fung (Ph.D., Educational Psychology, University of Alberta)
Role: Co-supervisor
Thesis Title: Scaling and Linking Relationships between an International Assessment and a Canadian National Assessment
Graduation Date: Winter 2020
- Jiaying Xiao (M.Ed., Educational Psychology, University of Alberta)
Role: Supervisor
Thesis Title: Collaborative Filtering Item Selection Methods for On-the-Fly Assembled Multistage Adaptive Testing
Graduation Date: Winter 2019
- Derek Radford (M.Ed., Educational Psychology, University of Alberta)
Role: Supervisor
Thesis Title: The Significance of School Relationships, Relational Teacher Self-Efficacy and Teacher Collective Efficacy to Teachers' Job Satisfaction
Graduation Date: Winter 2018

FACULTY &
UNIVERSITY
SERVICE

- Instructor; FGSR's pedagogical training session on assessment techniques 2023
- Member; Committee on the Learning Environment's SPOT Survey Taskforce 2022 to Now
- Reviewer; Research Ethics Board 2 at the University of Alberta 2021 to Now
- Chair; The HT Coutts Library Advisory Committee 2019 to Now
- Member; Dean's Pool for Department Advisory Selection Reps 2020 to Now
- Program Coordinator; Measurement, Evaluation, and Data Science 2020 to 2022
- Member; Academic Appeals Committee at the Faculty of Education 2019 to 2021
- Member; The SSHRC Doctoral Awards Evaluation Committee 2018 to 2020
- Member; Alberta Advisory Committee on Education Studies 2017 to 2019
- Member; School of Library & Information Studies Council 2017 to 2019
- Member; Faculty of Education Teaching Awards Committee 2015 to 2017
- Member; Interdisciplinary Committee on Applied Graduate Statistics 2015 to Now

EDITORIAL
SERVICE

- Special Issue Editor; [Frontiers in Education](#) (2023)
- Special Issue Editor; [Journal of Intelligence](#) (2023)
- Special Issue Editor; [Journal of Applied Testing Technology](#) (2023)
- Associate Editor; [Journal of Measurement and Evaluation in Education and Psychology](#)
- Associate Editor; [Chinese/English Journal of Educational Measurement and Evaluation](#)
- Editorial Board Member; [International Journal of Assessment Tools in Education](#)
- Editorial Board Member; [Canadian Journal of Educational Psychology](#)
- Editorial Board Member; [Journal of Intelligence](#)
- Editorial Board Member; [Psych](#)
- Consulting Editor; [Journal of Educational Psychology](#)
- Ad Hoc Journal Reviewer; [Educational and Psychological Measurement](#)
- Ad Hoc Journal Reviewer; [Applied Psychological Measurement](#)
- Ad Hoc Journal Reviewer; [Journal of Educational Measurement](#)
- Ad Hoc Journal Reviewer; [Educational Measurement: Issues and Practice](#)
- Ad Hoc Journal Reviewer; [International Journal of Testing](#)
- Ad Hoc Journal Reviewer; [Journal for Research in Mathematics Education](#)
- Ad Hoc Journal Reviewer; [Educational Researcher](#)

OTHER PROFESSIONAL SERVICE	• Peer reviewer for the US Department of Education’s Peer Assessment Process	2022 to Now
	• Peer reviewer for NRS Assessments at American Institutes for Research	2020 to Now
	• External reviewer for the Early Researcher Awards Program in Ontario	2022
	• External reviewer for the CANSSI Collaborative Research Team Program	2022
	• External reviewer for a Tenure Promotion Package at the University of Tennessee	2022
	• External reviewer for a Tenure Promotion Package at the University of Saskatchewan	2020
	• Organizer; CanAm Online Symposium Series	2015 to Now
	• Member; The Evaluation Advisory Committee for Youth ART Project	2015 to 2018
PROFESSIONAL MEMBERSHIP	• National Council on Measurement in Education (NCME), Member	2009 to Now
	• NCME Publications Committee, Member	2021 to Now
	• American Educational Research Association (AERA), Member	2009 to Now
	• The International Committee for AERA Division D, Member	2017 to 2020
	• Association for Computing Machinery (ACM), Member	2021 to Now
	• Society for Learning Analytics Research (SoLAR), Member	2022 to Now