

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, June 2013

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

Adnan Menderes University, Aydin, TURKEY

B.A., Elementary Education, June 2006

ACADEMIC POSITIONS

Professor

July, 2024 to Now

University of Alberta (Edmonton, AB)

Faculty of Education

Program: Measurement, Evaluation, and Data Science (MEDS)

Associate Professor

July, 2018 to June, 2024

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

- | | |
|---|--------------|
| • 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.**, Shin, J., Yildirim-Erbasli, S., & Desjardins, C. D. (In preparation). *Educational data mining: Applications in digital assessments*. 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). Creating value from process data: Implications for multistage testing. In D. Yan, A. von Davier, & D. Weiss (Eds.), *Research for practical issues and solutions in computerized multistage testing*. Routledge.
- [2] **Bulut, O.** (2024). 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* (pp. 177-199). Information Age Publisher.
- [3] **Bulut, O.**, Gorgun, G., & Yildirim-Erbasli, S. (2024). Assessment analytics for digital assessments: Identifying, modeling, and interpreting behavioral engagement. In D. Ifenthaler & M. Sahin, *Assessment analytics in education - designs, methods and solutions* (pp. 35-60). Springer. doi:10.1007/978-3-031-56365-2_3
- [4] Yildirim-Erbasli, 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). Lexicon-based sentiment analysis using R. *Towards Data Science*. <https://towardsdatascience.com/>.
- [2] **Bulut, O.** (2021). Likert scales: Friend or foe? *Towards Data Science*. <https://towardsdatascience.com/>.
- [3] **Bulut, O.** (2021). AI can bring fairness to assessments but are we ready for it? *Towards AI*. <https://medium.com/towards-artificial-intelligence>.
- [4] **Bulut, O.** (2021). How AI will end the one-size-fits-all approach in human assessment. *Towards AI*. <https://medium.com/towards-artificial-intelligence>.
- [5] **Bulut, O.** (2021). Too many survey questions? Let ant colony optimization handle it. *Towards Data Science*. <https://towardsdatascience.com/>.
- [6] **Bulut, O.** (2021). Effective feature selection: Recursive feature elimination using R. *Towards Data Science*. <https://towardsdatascience.com/>.

- [7] **Bulut, O.** (2020). Testing for measurement invariance in R. *Towards Data Science*. <https://towardsdatascience.com/>.
- [1] **Bulut, O.**, Wongvorachan, T., He, S., & Lee, S. (2024). Enhancing high-school dropout identification: A collaborative approach integrating human and machine insights. *Discover Education*, 3, Article 109. doi:10.1007/s44217-024-00209-4
- [2] **Bulut, O.**, Casabianca, J. M., Slater, S. C., Jiao, H., Song, D., Ormerod, C. M., Fabiyi, D. G., Ivan, R., Walsh, C., Rios, O., Wilson, J., N., S., Wongvorachan, T., Liu, J. X., Tan, B., & Morilova, P. (2024). The rise of artificial intelligence in educational measurement: Opportunities and ethical challenges. *ArXiv*. doi:10.48550/arXiv.2406.18900
- [3] Tan, B., Armoush, N., Mazzullo, E., **Bulut, O.**, & Gierl, M. J. (2024). A review of automatic item generation techniques leveraging large language models. *EdArXiv*. doi:10.35542/osf.io/6d8tj
- [4] Lu, C., **Bulut, O.**, Epp, Carrie Demmans, & Gierl, M. J. (2024). Impacts of engagement on academic outcomes in technology-enhanced learning. *Distance Education*. Advanced online publication. doi:10.1080/01587919.2024.2373297
- [5] Gorgun, G., & **Bulut, O.** (2024). Exploring quality criteria and evaluation methods in automated question generation: A comprehensive survey. *Education and Information Technologies*. Advanced online publication. doi:10.1007/s10639-024-12771-3
- [6] Wongvorachan, T., **Bulut, O.**, Liu, J. X., & Mazzullo, E. (2024). A comparison of bias mitigation techniques for educational classification tasks using supervised machine learning. *Information*, 15(6), 326. doi:10.3390/info15060326
- [7] Sayin, A., & **Bulut, O.** (2024). The difference between estimated and perceived item difficulty: An empirical study. *International Journal of Assessment Tools in Education*, 11(2), 368–387. doi:10.21449/ijate.1376160
- [8] Bulut, H. C., **Bulut, O.**, & Clelland, A. (2024). A psychometric network analysis approach for detecting item wording effects in self-report measures across subgroups. *Field Methods*. Advanced online publication. doi:10.1177/1525822X241247444
- [9] Poth, C., Wongvorachan, T., **Bulut, O.**, & Otto, S. (2024). Adaptive case study-mixed methods design practices for researchers studying complex phenomena. *Journal of Mixed Methods Research*. Advanced online publication. doi:10.1177/15586898241250217
- [10] Madland, C., Irvine, V., DeLuca, C., & **Bulut, O.** (2024). Developing the technology-integrated assessment framework. *The Open/Technology in Education, Society, and Scholarship Association Journal*, 4(1), 1–19. doi:10.18357/otessaj.2024.4.1.63
- [11] Madland, C., Irvine, V., DeLuca, C., & **Bulut, O.** (2024). Technology-integrated assessment: A literature review. *The Open/Technology in Education, Society, and Scholarship Association Journal*, 4(1), 1–48. doi:10.18357/otessaj.2024.4.1.57
- [12] **Bulut, O.**, Gorgun, G., & He, S. (2024). Unsupervised anomaly detection in sequential process data: Insights from PIAAC problem-solving tasks. *Zeitschrift für Psychologie*, 232(2), 74-94. doi:10.1027/2151-2604/a000558
- [13] Liu, J. X., **Bulut, O.**, & Johnson, M. D. (2024). Examining position effects on students' ability and test-taking speed in the TIMSS 2019 problem solving and inquiry tasks. *Psychology International*, 6(2), 492-508. doi:10.3390/psycholint6020030
- [14] **Bulut, O.** (2024). Psycho-educational assessments: Theory and practice. *Journal of Intelligence*, 12(3), 31. doi:10.3390/jintelligence12030031

- [15] 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
- [16] 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
- [17] **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
- [18] 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
- [19] **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
- [20] **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
- [21] **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
- [22] **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
- [23] 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
- [24] 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
- [25] 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
- [26] 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
- [27] 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
- [28] 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
- [29] 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

- [30] 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
- [31] 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
- [32] 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
- [33] 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
- [34] **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.
- [35] 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.
- [36] 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.
- [37] 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
- [38] 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
- [39] **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
- [40] 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.
- [41] 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>
- [42] 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
- [43] 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

- [44] 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
- [45] **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
- [46] **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
- [47] 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
- [48] 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
- [49] 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
- [50] 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*.
- [51] 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
- [52] **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
- [53] 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
- [54] 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
- [55] 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
- [56] **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
- [57] 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

- [58] 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
- [59] 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
- [60] Yildirim-Erbasli, S. N., & **Bulut, O.** (2021). Conversation-based assessments: Real-time assessment and feedback. *eLearn Magazine*, 12, Article 1. doi:10.1145/3495533
- [61] **Bulut, O.** (2021). Beyond multiple-choice with digital assessments. *eLearn Magazine*, 2021(Special Issue), 1-10. doi:10.1145/3472394
- [62] 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
- [63] 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
- [64] 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
- [65] **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
- [66] **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
- [67] 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
- [68] 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
- [69] 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
- [70] **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.
- [71] Bulut, H. C., & **Bulut, O.** (2021). K. Sijtsma and A. L. Van Der Ark: A review of "Measurement Models for Psychological Attributes". *Psychometrika*, 86(2), 514-517. doi:10.1007/s11336-021-09758-1
- [72] Gorgun, G., & **Bulut, O.** (2021). A polytomous scoring approach to handle not-reached items in low-stakes assessments. Advance online publication. *Educational and Psychological Measurement*. doi:10.1177/0013164421991211

- [73] Georgiou, G. K., **Bulut, O.**, Dunn, K., Naglieri, J., & Das, J.P. (2021). Examining the relation between PASS cognitive processes and superior reading and mathematics performance. *Psychology in the Schools*, 58, 252–267. doi:10.1002/pits.22442
- [74] **Bulut, O.** (2021). Test review of the Young Children's Achievement Test-Second Edition. In J. F. Carlson, K. F. Geisinger, & J. L. Jonson (Eds.), *The twenty-first mental measurements yearbook* (pp. 873-878). Lincoln, NE: Buros Center for Testing.
- [75] El Hassar, B., Poth, C., Gokiart, R., & **Bulut, O.** (2021). Toward an evidence-based approach to building evaluation capacity. *The Canadian Journal of Program Evaluation*, (36)1, 82-94. doi:10.3138/cjpe.69191
- [76] **Bulut, O.**, Cormier, D. C., & Shin, J. (2020). An intelligent recommender system for personalized test administration scheduling with computerized formative assessments. *Frontiers in Education*, 5, 1-11. doi:10.3389/educ.2020.572612
- [77] **Bulut, O.**, Cutumisu, M., Sing, D., & Aquilina, A. M. (2020). Guidelines for generating effective feedback from e-assessments. *Hacettepe University Journal of Education*, 35(Special Issue), 60-72. doi:10.16986/HUJE.2020063705.
- [78] **Bulut, O.**, Xiao, J., Rodriguez, M. C., & Gorgun, G. (2020). An empirical investigation of factors contributing to item nonresponse in self-reported bullying instruments. *Journal of School Violence*. Advance online publication. doi:10.1080/15388220.2020.1770603
- [79] **Bulut, O.**, & Desjardins, C. D. (2020). Profile analysis of multivariate data: A brief introduction to the profileR package. doi:10.31234/osf.io/sgy8m
- [80] Brown, G. T. L., Alqassab, M., **Bulut, O.**, & Xiao, J. (2020). Item impact as the source of differential item functioning in small samples: Evaluation with MIMIC-PA and MIMIC-interaction approaches. *Psychological Test and Assessment Modeling*, 65(4), 429-448.
- [81] Violato, E., King, S., & **Bulut, O.** (2020). A multi-method exploratory study of health professional students' experiences with compliance behaviours. *BMC Medical Education*, 20(359), 1-10. doi:10.21203/rs.3.rs-37019/v3
- [82] Flanagan, A., Cormier, D. C., & **Bulut, O.** (2020). Teachers' expectations vary: Social implications for students of different ethnic groups. *Social Psychology of Education*, 23(6), 1429-1448. doi:10.1007/s11218-020-09590-y
- [83] St-Amand, J., Bowen, F., **Bulut, O.**, Cormier, D. C., Girard, S., & Janosz, M. (2020). Le sentiment d'appartenance à l'école : Validation d'un modèle théorique prédisant l'engagement et le rendement en mathématiques d'élèves du secondaire. *Teachers & Teaching: International Journal in Education*, 28(2), 89-105. doi:10.18162/fp.2020.530.
- [84] Desjardins, C. D., & **Bulut, O.** (2020). profileR: An R package for profile analysis. *The Journal of Open Source Software*, 5(47), 1941. doi:10.21105/joss.01941
- [85] Kendeou, P., McMaster, K., Butterfuss, R., Kim, J., Slater, S., & **Bulut, O.** (2020). Development and validation of the Minnesota Inference Assessment. *Assessment for Effective Intervention*. Advance online publication. doi:10.1177/1534508420937781
- [86] Xiao, J., & **Bulut, O.** (2020). Evaluating the performances of missing data handling methods in ability estimation from sparse data. *Educational and Psychological Measurement*. Advance online publication. doi:10.1177/0013164420911136
- [87] Liou, P.-Y., & **Bulut, O.** (2020). The effects of item format and cognitive domain on students' science performance in TIMSS 2011. *Research in Science Education*, 50(1), 99-121. doi:10.1007/s11165-017-9682-7

- [88] Shin, J., **Bulut, O.**, & Gierl, M. J. (2020). The effect of the most attractive distractor location on multiple-choice item difficulty. *Journal of Experimental Education*, 88(4), 643-659. doi:[10.1080/00220973.2019.1629577](https://doi.org/10.1080/00220973.2019.1629577).
- [89] Shin, J., **Bulut, O.**, & Gierl, M. J. (2020). Development practices of trusted AI systems among Canadian data scientists. *International Review for Information Ethics*, 28, 1-10.
- [90] **Bulut, O.**, & Yavuz, H. C. (2019). Educational data mining: A tutorial for the rattle package in R. *International Journal of Assessment Tools in Education*, 6(5), 20-36. doi:[10.21449/ijate.627361](https://doi.org/10.21449/ijate.627361)
- [91] **Bulut, O.**, Cutumisu, M., Aquilina, A. M., & Singh, D. (2019). Effects of digital score reporting and feedback on students' learning in higher education. *Frontiers in Education*, 4(65), 1-16. doi:[10.3389/feduc.2019.00065](https://doi.org/10.3389/feduc.2019.00065)
- [92] Daniels, L. M., & **Bulut, O.** (2019). Students' perceived usefulness of computerized percentage-only vs. descriptive score reports: Associations with motivation and grades. *Journal of Computer Assisted Learning*, 36(2), 199-208. doi:[10.1111/jcal.12398](https://doi.org/10.1111/jcal.12398)
- [93] Chen, F., Yang, H., **Bulut, O.**, Cui, Y., & Xin, T. (2019). Examining the relation of personality factors to substance use disorder by explanatory item response modeling of DSM-5 symptoms. *PLoS ONE*, 14(6), 1-17. doi:[10.1371/journal.pone.0217630](https://doi.org/10.1371/journal.pone.0217630)
- [94] Stanke, L., & **Bulut, O.** (2019). Explanatory item response models for polytomous item responses. *International Journal of Assessment Tools in Education*, 6(2), 259-278. doi:[10.21449/ijate.515085](https://doi.org/10.21449/ijate.515085)
- [95] Celik, H., & **Bulut, O.** (2019). Examining Turkish adults' recalled experiences of their father's presence. *Journal of Family Issues*, 40(9), 1224-1251. doi:[10.1177/0192513X19835879](https://doi.org/10.1177/0192513X19835879)
- [96] Cormier, D. C., Van Norman, E. R., Cheong, C., Kennedy, K. E., **Bulut, O.**, & Mrazik, M. (2019). Mastering standardized cognitive assessment scoring procedures: How much is enough? *Canadian Journal of School Psychology*, 34(3), 215-233. doi:[10.1177/0829573518765010](https://doi.org/10.1177/0829573518765010)
- [97] **Bulut, O.**, & Cormier, D. C. (2018). Validity evidence for progress monitoring with Star Reading: Slope estimates, administration frequency, and number of data points. *Frontiers in Education*, 3(68), 1-12. doi:[10.3389/feduc.2018.00068](https://doi.org/10.3389/feduc.2018.00068)
- [98] **Bulut, O.**, Lei, M., & Guo, Q. (2018). Item and testlet position effects in computer-based alternate assessments for students with disabilities. *International Journal of Research & Method in Education*, 42(1), 169-183. doi:[10.1080/1743727X.2016.1262341](https://doi.org/10.1080/1743727X.2016.1262341)
- [99] **Bulut, O.**, & Cutumisu, M. (2018). When technology does not add up: ICT use negatively predicts mathematics and science achievement for Finnish and Turkish students in PISA 2012. *Journal of Educational Multimedia and Hypermedia*, 27(1), 25-42.
- [100] Kan, A., **Bulut, O.**, & Cormier, D. C. (2018). The impact of item stem format on the dimensional structure of mathematics assessments. *Educational Assessment*, 24(1), 13-32. doi:[10.1080/10627197.2018.1545569](https://doi.org/10.1080/10627197.2018.1545569)
- [101] Arce-Ferrer, A. & **Bulut, O.** (2018). Effects of data collection designs in the comparison of computer-based and paper-based tests. *Journal of Experimental Education*, 87(4), 661-679. doi:[10.1080/00220973.2018.1507986](https://doi.org/10.1080/00220973.2018.1507986)
- [102] Korukcu, O., **Bulut, O.**, & Kukulu, K. (2018). From experiences to expectations: A quantitative study on the fear of childbirth among multigravida women. *Archives of Psychiatric Nursing*. Advance online publication. doi:[10.1016/j.apnu.2018.11.002](https://doi.org/10.1016/j.apnu.2018.11.002)

- [103] Liu, R., Huggins-Manley, & **Bulut, O.** (2018). Retrofitting diagnostic classification models to responses from IRT-based assessment forms. *Educational and Psychological Measurement*, 78(3), 357-383. doi:10.1177/0013164416685599
- [104] McCabe, E., Gross, D. P., & **Bulut, O.**, (2018). Procedures to develop a computerized adaptive test to assess patient-reported physical functioning. *Quality of Life Research*, 27(9), 2393-2402. doi:10.1007/s11136-018-1898-0
- [105] Cormier, D. C., **Bulut, O.**, Singh, D., Kennedy, K. E., Wang, K., Heudes, A., & Lewka, A. J. (2018). A systematic examination of the linguistic demand of cognitive test directions administered to school-Age populations. *Journal of Psychoeducational Assessment*, 36(4), 337-353. doi:10.1177/0734282916678336
- [106] **Bulut, O.**, Davison, M. L., & Rodriguez, M. C. (2017). Estimating between-person and within-person subscore reliability with profile analysis. *Multivariate Behavioral Research*, 52(1), 86-104. doi:10.1080/00273171.2016.1253452
- [107] **Bulut, O.**, & Suh, Y. (2017). Detecting DIF in multidimensional assessments with the MIMIC model, the IRT likelihood ratio test, and logistic regression. *Frontiers in Education*, 2(51), 1-14. doi:10.3389/feduc.2017.00051
- [108] **Bulut, O.**, & Sunbul, O. (2017). Monte Carlo simulation studies in item response theory with the R programming language. *Journal of Measurement and Evaluation in Education and Psychology*, 8(3), 266-287. doi:10.21031/epod.305821
- [109] **Bulut, O.**, Guo, Q. & Gierl, M. J. (2017). A structural equation modeling approach for examining position effects in large-scale assessments. *Large-Scale Assessments in Education*, 5(8), 1-20. doi:10.1186/s40536-017-0042-x
- [110] Cutumisu, M., & **Bulut, O.** (2017). Problem-solving attitudes and gender as predictors of academic achievement in mathematics and science for Canadian and Finnish students in the PISA 2012 assessment. *Journal of Educational Multimedia and Hypermedia*, 26(4), 325-342.
- [111] Cormier, D. C., **Bulut, O.**, McGrew, K. S., & Singh, D. (2017). Exploring the effects of Cattell-Horn-Carroll (CHC) cognitive abilities underlying mathematics achievement. *Applied Cognitive Psychology*, 31(5), 530-538 doi:10.1002/acp.3350
- [112] Gierl, M. J., **Bulut, O.**, Guo, Q., & Zhang, X. (2017). Developing, analyzing, and using distractors for multiple-choice testing: A comprehensive review. *Review of Educational Research*, 87(6), 1082-1116. doi:10.3102/0034654317726529
- [113] Lee, S., **Bulut, O.**, & Suh, Y. (2017). Multidimensional extension of Multiple Indicators Multiple Causes models to detect DIF. *Educational and Psychological Measurement*, 77(4), 545-569. doi:10.1177/0013164416651116
- [114] Arce-Ferrer, A. J., & **Bulut, O.** (2017). Separate and concurrent anchor purification-scale transformation approaches in the 3PL IRT equating. *International Journal of Testing*, 17(1), 1-22. doi:10.1080/15305058.2016.1227825
- [115] Bellibas, M. S., **Bulut, O.**, & Gedikli, S. (2017). Investigating professional learning communities in Turkish schools: The effects of contextual factors. *Professional Development in Education*, 43(3), 353-374. doi:10.1080/19415257.2016.1182937
- [116] Yaylaci, T., Cicchetti, D., Rogosch, F. A., **Bulut, O.**, & Hetzel, S. R. (2017). The interactive effects of child maltreatment and the FK506 binding protein 5 gene (FKBP5) on dissociative symptoms in adolescence. *Development and Psychopathology*, 29(3), 1105-1117. doi:10.1080/15305058.2016.1227825

- [117] Cormier, D. C., McGrew, K. S., **Bulut, O.**, & Funamoto, A. (2016). Revisiting the relations between the WJ IV measures of Cattell-Horn-Carroll (CHC) cognitive abilities and reading achievement during the school-age years. *Journal of Psychoeducational Assessment*, 35(8), 731-754. doi:[10.1177/0734282916659208](https://doi.org/10.1177/0734282916659208)
- [118] Cormier, D. C., **Bulut, O.**, McGrew, K. S., & Frison, J. (2016). The role of Cattell-Horn-Carroll (CHC) cognitive abilities in predicting writing achievement during the school age years. *Psychology in the Schools*, 53(8), 787-803. doi:[10.1002/pits.21945](https://doi.org/10.1002/pits.21945)
- [119] Van Boekel, M., **Bulut, O.**, Stanke, L., Zamora, J. P. R., Jang, Y., Kang, Y., & Nickodem, K. (2016). Effects of participation in school sports on academic and social functioning. *Journal of Applied Developmental Psychology*, 46, 31-40. doi:[10.1016/j.appdev.2016.05.002](https://doi.org/10.1016/j.appdev.2016.05.002)
- [120] Latifi, S. F., **Bulut, O.**, Gierl, M. J., Christie, T., & Jeeva, S. (2016). Differential performance on national exams: Evaluating item and bundle functioning methods using English, mathematics, and science assessments. *Sage Open*, 6(2), 1-14. doi:[10.1177/2158244016653791](https://doi.org/10.1177/2158244016653791)
- [121] Korukcu, O., **Bulut, O.**, & Kukulu, K. (2016) Psychometric evaluation of the Wijma Delivery Expectancy/Experience Questionnaire version B. *Health Care for Women International*, 37(5), 550-567. doi:[10.1080/07399332.2014.943838](https://doi.org/10.1080/07399332.2014.943838)
- [122] Shojaei, M., **Bulut, O.**, & Shahidi, M. (2016). Examining psychometric properties of the Kutcher Adolescent Depression Scale (KADS-11) using multidimensional item response theory. *International Journal of Current Research*, 8(3), 27120-27131.
- [123] Bellibas, M. S., **Bulut, O.**, Hallinger, P., & Wang, W. C. (2016). Validating an instructional leadership profile of Turkish primary school principals with the PIMRS. *International Journal of Educational Research*, 75, 115-133.
- [124] **Bulut, O.** (2015). Applying item response theory models to Entrance Examination for Graduate Studies: Practical issues and insights. *Journal of Measurement and Evaluation in Education and Psychology*, 6(2), 313-330.
- [125] **Bulut, O.** (2015). An empirical analysis of gender-based DIF due to test booklet effect. *European Journal of Research on Education*, 3(1), 7-16.
- [126] **Bulut, O.**, Palma, J., Rodriguez, M. C., & Stanke, L. (2015). Evaluating measurement invariance in the measurement of developmental assets in Latino English language groups across developmental stages. *Sage Open*, 5(2), 1-18.
- [127] Kan, A., & **Bulut, O.** (2015). Examining the language factor in mathematics assessments. *Journal of Education and Human Development*, 4(1), 133-146.
- [128] Kan, A., & **Bulut, O.** (2014). Crossed random-effect modeling: Examining the effects of teacher experience and rubric use in performance assessments. *Eurasian Journal of Educational Research*, 57, 1-28.
- [129] Kan, A., & **Bulut, O.** (2014). Examining the relationship between gender DIF and language complexity in mathematics assessments. *International Journal of Testing*, 14(3), 245-264.
- [130] Korukcu, O., **Bulut, O.**, Bayram, Z., Tuzcu, A., & Turkmen, H. O. (2014). An adaptation of Leymann Inventory of Psychological Terror to health sciences programs in Turkey. *Anatolian Journal of Psychiatry*, 15(4), 335-343.
- [131] Gumus, S., **Bulut, O.**, & Bellibas, M. S. (2013). The relationship between principal leadership and teacher collaboration in Turkish primary schools: A multilevel analysis. *Education Research and Perspectives*, 40, 1-29.

- [132] **Bulut, O.**, & Kan, A. (2012). Application of computerized adaptive testing to Entrance Examination for Graduate Studies in Turkey. *Eurasian Journal of Educational Research*, 49, 61-80.
- [133] **Bulut, O.**, Delen, E., & Kaya, F. (2012). An SEM model based on PISA 2009 in Turkey: How does the use of technology and self-regulation activities predict reading scores? *Procedia - Social and Behavioral Sciences*, 64, 564-573.
- [134] Kaya, F., Delen, E., & **Bulut, O.** (2012). Test review: Shipley-2 manual. *Journal of Psychoeducational Assessment*, 30(6), 593-597.
- [135] Delen, E., & **Bulut, O.** (2011). The relationship between students' exposure to technology and their achievement in science and math. *TOJET: The Turkish Online Journal of Educational Technology*, 10(3), 311-317.

CONFERENCE PUBLICATIONS

- [1] Gorgun, G., & **Bulut, O.** (2024). Current evaluation methods are a bottleneck in automatic question generation. In *Proceedings of Machine Learning Research* (pp. 1-8), Vancouver, BC, Canada.
- [2] **Bulut, O.**, Gorgun, G., Tan, B., Wongvorachan, T., Yildirim-Erbasli, S. N., & Clelland, A. (2023). Self-regulated learning through online formative assessments: The effects of assessment frequency and participation on student performance. In P. Blikstein, J. Van Aalst, R. Kizito, & K. Brennan (Eds.), *Proceedings of the 17th International Conference of the Learning Sciences* (pp. 1406-1409), Montreal, QC, Canada: International Society of the Learning Sciences.
- [3] 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.
- [4] Yildirim-Erbasli, S. N., & **Bulut, O.** (2023). Innovating assessment with conversational agents: A technology-enhanced approach to formative assessments. *Proceedings of the IEEE International Conference on Advanced Learning Technologies* (pp. 331-335), Orem, UT. doi:[10.1109/ICALT58122.2023.00103](https://doi.org/10.1109/ICALT58122.2023.00103)
- [5] **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_)
- [6] Gorgun, G., & **Bulut, O.** (2022). Considering disengaged responses in Bayesian and deep knowledge tracing. 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. 591-594). Lecture Notes in Computer Science, vol 13356. Springer, Cham. doi:[10.1007/978-3-031-11647-6_122](https://doi.org/10.1007/978-3-031-11647-6_122)
- [7] Shin, J., **Bulut, O.**, & Pinto, W. N. (2022, July). E-learning preparedness: A key consideration to promote fair learning analytics development in higher education. In A. Mitrovic & N. Bosch (Eds.), *Proceedings of the 15th International Conference on Educational Data Mining*, (pp. 673-678). Durham, UK: International Educational Data Mining Society. doi:[10.5281/zenodo.6853111](https://doi.org/10.5281/zenodo.6853111)

- [8] Walsh, C., MacIntosh, A., **Bulut, O.**, & Shin, J. (2022). What are we measuring?: A topic modeling framework to map professionalism aspects to responses in a situational judgment test. In A. Wise, R. Martinez-Maldonado, & I. Hilliger (Eds.), *Proceedings of the 12th International Conference on Learning Analytics & Knowledge (LAK22)* (pp. 39-41). Society for Learning Analytics Research (SoLAR).
- [9] 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
- [10] **Bulut, O.**, & Cutumisu, M. (2017). When technology does not add up: ICT use negatively predicts mathematics and science achievement for Finnish and Turkish students in PISA 2012. In J. Johnston (Ed.), *Proceedings of EdMedia: World Conference on Educational Media and Technology 2017* (pp. 935-945). Waynesville, NC: Association for the Advancement of Computing in Education (AACE).
- [11] Cutumisu, M., & **Bulut, O.** (2017). Problem-solving attitudes and gender as predictors of academic achievement in mathematics and science for Canadian and Finnish students in the PISA 2012 assessment. In J. Johnston (Ed.), *Proceedings of EdMedia: World Conference on Educational Media and Technology 2017* (pp. 728-738). Waynesville, NC: Association for the Advancement of Computing in Education (AACE).
- [12] Delen, E., & **Bulut, O.** (2011). The relationship between students' exposure to technology and their achievement in science and math. *Proceedings of the 12th International Educational Technology Conference - IETC*, (pp. 1171-1176), Sakarya, Turkey.

TECHNICAL REPORTS

- [1] **Bulut, O.**, Clelland, A., & Wongvorachan, T. (2024). Identifying the predictors of mathematics anxiety, confidence, and performance in Canada: An educational data mining approach. Edmonton, AB: Alberta Education. doi:10.7939/r3-x6q5-de82
- [2] **Bulut, O.**, Seitz, P., Deforge, K., Chu, M.-W., Hachem, M., & Gorgun, G. (2020). Measuring students' socio-emotional well-being to optimize learning: Looking beyond academic performance and grades. Edmonton, AB: Alberta Education. doi:10.7939/r3-jkvz-qt28
- [3] Cormier, D. C., & **Bulut, O.** (2020). *Developing an intelligent progress monitoring system for Star Assessments*. Wisconsin Rapids, WI: Renaissance Learning Inc.
- [4] **Bulut, O.**, & Cormier, D. C. (2019). *Advanced screening approaches with Star Assessments*. Wisconsin Rapids, WI: Renaissance Learning Inc.
- [5] **Bulut, O.**, & Cormier, D. C. (2016). *Developing psychometrically sound decision rules for STAR Math*. Wisconsin Rapids, WI: Renaissance Learning Inc.
- [6] Cormier, D. C., & **Bulut, O.** (2016). *Developing psychometrically sound decision rules for STAR Reading*. Wisconsin Rapids, WI: Renaissance Learning Inc.

COMPUTER SOFTWARE

- [1] **Bulut, O.** (2021). *eirm: Explanatory item response modeling for dichotomous and polytomous item responses*, R package version 0.5.0. doi:10.5281/zenodo.4556285. Available from <http://CRAN.R-project.org/package=eirm>.
- [2] **Bulut, O.**, & Desjardins, C. D. (2018). *profileR: Profile analysis of multivariate data in R* (version 0.3-5). Available from <http://CRAN.R-project.org/package=profileR>.
- [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] **Bulut, O.**, Clelland, A.C., & Wongvorachan, T. (2024, June). *Identifying the predictors of mathematics performance and math anxiety in Canada: An educational data mining approach*. Paper presented at the annual meeting of the Canadian Society for the Study of Education, Montreal, QC.
- [2] **Bulut, O.**, Shin, J., & Pinto Junior, W. N. (2024, April). *Towards fair learning analytics: An application of the Seldonian algorithm*. In Q. He (Chair), Incorporating multiple data sources to explore group strategy variations. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- [3] **Bulut, O.**, Gorney, K., & Yildirim-Erbasli, S. N. (2024, April). *Joint modeling of ability and test-taking effort with multidimensional nested logit model*. In B. Arslan (Chair), Unpacking test-taker (dis)engagement: Innovative approaches to enhance validity. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- [4] Gorgun, G., & **Bulut, O.** (2024, April). *Using large language models for evaluating item quality in large-scale assessments*. In S. Dai (Chair), Innovations and practices of AI and language models in large-scale assessments. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- [5] Firoozi, T., **Bulut, O.**, & Gorgun, G. (2024, April). *Text augmentation for enhancing the accuracy of automated essay scoring*. In H. Jiao & X. Zhai (Chairs), Tackling challenges in automated scoring: Data augmentation, multilingualism, and feedback mechanisms. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- [6] Liu, X., **Bulut, O.**, Gao, Y., & Cui, Y. (2024, April). *Uncovering test-takers' problem-solving patterns through Hidden Markov models and network analysis*. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- [7] Clelland, A.C., & **Bulut, O.** (2024, April). *Using network psychometrics to identify wording effects in a socioemotional skills survey*. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- [8] Tan, B., Armoush, N., **Bulut, O.**, Mazzullo, E., & Gierl, M. (2024, April). *Leveraging pre-trained large language models for automatic item generation: A scoping review*. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- [9] Mazzullo, E., **Bulut, O.**, Tan, B., & Wongvorachan, T. (2024, April). *How can large language models revolutionize learning analytics?* Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- [10] Wongvorachan, T., **Bulut, O.**, & Gorgun, G. (2024, April). *Evaluating dimensionality in non-cognitive measures: Exploratory vs. hierarchical exploratory graph analysis*. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- [11] Clelland, A.C., & **Bulut, O.** (2024, April). *A network psychometrics approach to explore Canadian students' collaborative skills*. Poster presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
- [12] Yildirim-Erbasli, 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.

- [13] **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.
- [14] **Bulut, O.**, Gorgun, G., Tan, B., Wongvorachan, T., Yildirim-Erbasli, 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.
- [15] Yildirim-Erbasli, 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.
- [16] Rinaldi, C., Keys, K., **Bulut, O.**, Gokierto, 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.
- [17] 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.
- [18] **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.
- [19] **Bulut, O.**, Yildirim-Erbasli, 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.
- [20] 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.
- [21] Yildirim-Erbasli, 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.
- [22] 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.
- [23] 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.
- [24] 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.

- [25] 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.
- [26] 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.
- [27] 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.
- [28] 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.
- [29] 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.
- [30] 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.
- [31] 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.
- [32] 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.
- [33] 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.
- [34] 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).
- [35] 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.
- [36] **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.
- [37] 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.
- [38] 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.

- [39] 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.
- [40] 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.
- [41] **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.
- [42] 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.
- [43] 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.
- [44] 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.
- [45] 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.
- [46] 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.
- [47] 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.
- [48] **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).
- [49] 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).
- [50] 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.
- [51] 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).

- [52] 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).
- [53] 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).
- [54] **Bulut, O.**, & Yildirim-Erbasli, S. (2021, November). Real-time assessment and feedback for real-time learning. Paper presented at the Beyond Multiple Choice Conference.
- [55] 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.
- [56] 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.
- [57] Tilstra, M., Nielsen, C., Tiwari, I., Jones, A., Quemerai, 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.
- [58] **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.
- [59] 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.
- [60] 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.
- [61] 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.
- [62] 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.
- [63] Bulut, H. C., Arikian, 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.
- [64] 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.
- [65] 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.

- [66] 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.
- [67] **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].
- [68] 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].
- [69] 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].
- [70] 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].
- [71] 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].
- [72] 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]
- [73] 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]
- [74] 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]
- [75] 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]
- [76] 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.
- [77] 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.
- [78] 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.

- [79] 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.
- [80] 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.
- [81] 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.
- [82] **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
- [83] **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.
- [84] 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.
- [85] 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.
- [86] 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
- [87] 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.
- [88] 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.
- [89] 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.
- [90] 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.
- [91] 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.

SUPERVISION
EXPERIENCE

- Elisabetta Mazzullo (Ph.D., Measurement, Evaluation, and Data Science, University of Alberta)
Role: Supervisor
Thesis Title: TBD
Graduation Date: Fall 2027 (Expected)
- Bin Tan (Ph.D., Measurement, Evaluation, and Data Science, University of Alberta)
Role: Supervisor
Thesis Title: TBD
Graduation Date: Fall 2026 (Expected)
- Ashley Clelland (Ph.D., Measurement, Evaluation, and Data Science, University of Alberta)
Role: Co-supervisor
Thesis Title: TBD
Graduation Date: Fall 2025 (Expected)
- Tarid Wongvorachan (Ph.D., Measurement, Evaluation, and Data Science, University of Alberta)
Role: Supervisor
Thesis Title: TBD
Graduation Date: Fall 2024 (Expected)
- Daniel Jerez Garcia (M.Ed., Measurement, Evaluation, and Data Science, University of Alberta)
Role: Co-supervisor
Thesis Title: TBD
Graduation Date: Winter 2026 (Expected)
- Kevin Vo (M.Ed., Measurement, Evaluation, and Data Science, University of Alberta)
Role: Supervisor
Thesis Title: TBD
Graduation Date: Winter 2025 (Expected)
- Xinle (Joyce) Liu (M.Ed., Measurement, Evaluation, and Data Science, University of Alberta)
Role: Supervisor
Thesis Title: TBD
Graduation Date: Winter 2025 (Expected)
- Tirzah Lyons (M.Ed., School and Clinical Child Psychology, University of Alberta)
Role: Co-supervisor
Thesis Title: TBD
Graduation Date: Fall 2024 (Expected)
- Elisabetta Mazzullo (M.Ed., Measurement, Evaluation, and Data Science, University of Alberta)
Role: Supervisor
Thesis Title: TBD
Graduation Date: Fall 2024 (Expected)

- Guher Gorgun (Ph.D., Measurement, Evaluation, and Data Science, University of Alberta)
Role: Supervisor
Thesis Title: An Automatic Item Quality Evaluation Approach for Automatically Generated Assessment Items
Graduation Date: Winter 2024
- Bin Tan (M.Ed., Measurement, Evaluation, and Data Science, 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., Measurement, Evaluation, and Data Science, 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., Measurement, Evaluation, and Data Science, 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., Measurement, Evaluation, and Data Science, 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., Measurement, Evaluation, and Data Science, 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., Measurement, Evaluation, and Data Science, 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

	<ul style="list-style-type: none"> • Member; Faculty of Education Teaching Awards Committee 2015 to 2017 • Member; Interdisciplinary Committee on Applied Graduate Statistics 2015 to Now 	
EDITORIAL SERVICE	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 	