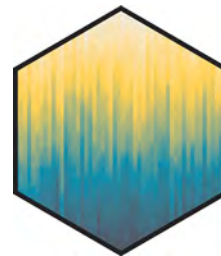


W. Jake Thompson, PhD

Psychometrician & R Developer



EDUCATION

2018
|
2014

Ph.D., Educational Psychology

University of Kansas

□ Lawrence, KS

- Dissertation: “[Evaluating Model Estimation Processes for Diagnostic Classification Models](#)”
- Advisor: [Neal Kingston, Ph.D.](#)
- Emphasis: Research, Evaluation, Measurement, and Statistics

2014
|
2010

B.S., Behavioral Neuroscience

University of Kansas

□ Lawrence, KS

- Honors Thesis: “[Dissociating Cognitive and Affective Empathy in Unipolar Depression](#)”
- Advisor: [Evangelia G. Chrysikou, Ph.D.](#)
- Minor: Social and Behavioral Sciences Methodology
- Highest Distinction, with University and Departmental Honors

EMPLOYMENT

present
|
August
2014

Accessible Teaching, Learning, and Assessment Systems (ATLAS), University of Kansas

Assistant Director of Psychometrics

□ Lawrence, KS

- Work across contract and grant-funded projects to promote learning, evaluate student achievement, and develop tools to improve research practice
- Lead a team of 3–4 reports to execute operational scoring and reporting and for the [Dynamic Learning Maps](#) Alternate Assessment
- Develop and lead the implementation of a psychometric research program focused on diagnostic classification modeling, including presentation of findings to a variety of audiences
- Develop internal and external software, such as the R package [measr](#)

Position History

- Assistant Director of Psychometrics (April 2022–present)
- Senior Psychometrician (April 2019–April 2022)
- Psychometrician (April 2018–April 2019)
- Assistant Psychometrician (January 2016–April 2018)
- Graduate Research Assistant (August 2014–January 2016)

CONTACT

 wjakethompson.com
 [in/wjakethompson](https://in.wjakethompson)
 0000-0001-7339-0300
 W. Jake Thompson
 [@wjakethompson](https://twitter.com/wjakethompson)
 [@wjakethompson@fosstodon.org](mailto:wjakethompson@fosstodon.org)
 [@wjakethompson.com](http://wjakethompson.com)
 [@wjakethompson](mailto:wjakethompson)
 [@wjakethompson](https://x.com/wjakethompson)

SKILLS

Programming:

R
R Markdown
Quarto
Stan

Psychometrics:

Diagnostic Classification Models
Item Response Theory
Score Reporting
Reliability
Model Fit

Data Analysis:

Bayesian statistics
Generalized linear models
Multilevel models

present
|
January
2015

Jake Thompson Consulting

Statistical Consultant

□ Kansas City, KS

- Provide statistical and methodological consultations
- Selected projects include: analyzing data for research labs at the University of Kansas Medical Center; providing recommendations for the implementation of evidence centered design to the National Council of State Boards of Nursing; estimating growth projections for JNA Advertising.



PUBLICATIONS

2025

Evaluating methods for assessing model fit in diagnostic classification models

Thompson, W. J. (2025). Evaluating methods for assessing model fit in diagnostic classification models. In J.-S. Kim, H. Wu, T. Sweet, D. Molenaar, B. Junker, I. Moustaki, J. Harring, O. Bulut, X. Tong, G. Wallin, & S. Di Plinio (Ed.) *Proceedings of the International Meeting of the Psychometric Society: The 89th Annual Meeting, Prague, Czech Republic, 2024*. <https://doi.org/10.64028/rgtk456752>

Learning maps as cognitive models for instruction and assessment

Swinburne, R. R., Schuster, J., Karvonen, M., **Thompson, W. J.**, Erickson, K., Simmering, V., & Bechard, S. (2025). Learning maps as cognitive models for instruction and assessment. *Education Sciences*, 15(3), Article 365. <https://doi.org/10.3390/educsci15030365>

Artificial intelligence in science and mathematics assessment for students with disabilities: Opportunities and challenges

Clark, A. K., Hirt, A., Whitcomb, D., **Thompson, W. J.**, Wine, M., & Karvonen, M. (2025). Artificial intelligence in science and mathematics assessment for students with disabilities: Opportunities and challenges. *Education Sciences*, 15(2), Article 233. <https://doi.org/10.3390/educsci15020233>

2024

Improving instructional decision-making using diagnostic classification models

Thompson, W. J. & Clark, A. K. (2024). Improving instructional decision-making using diagnostic classification models. *Educational Measurement: Issues and Practice*, 43(4), 146–156. <https://doi.org/10.1111/emip.12619> [Preprint]

2023

measr: Bayesian psychometric measurement using Stan

Thompson, W. J. (2023). measr: Bayesian psychometric measurement using Stan. *Journal of Open Source Software*, 8(91), Article 5742. <https://doi.org/10.21105/joss.05742>

Visualizing distributions across grades with ridgeline plots

Thompson, W. J. (2023). Visualizing distributions across grades with ridgeline plots [Cover graphic]. *Educational Measurement: Issues and Practice*, 42(2). <https://doi.org/10.1111/emip.12514>

Effect of lipoprotein apheresis on progression of carotid intima-media thickness in patients with severe hypercholesterolemia

Safarova, M. S., Nugent, A. K., Gorby, L., Dutton, J., **Thompson, W. J.**, & Moriarty, P. M. (2022). Effect of lipoprotein apheresis on progression of carotid intima-media thickness in patients with severe hypercholesterolemia. *American Journal of Cardiology*, 177, 22–27. <https://doi.org/10.1016/j.amjcard.2022.05.002>

Intima-media thickness measured at the common-carotid artery in patients treated with lipoprotein apheresis

Thompson, W. J., Nugent, A., Gorby, L., Dutton, J., Moriarty, P., & Safarova, M. (2022). Intima-media thickness measured at the common-carotid artery in patients treated with lipoprotein apheresis. *Journal of Clinical Lipidology*, 16(3), e46. <https://doi.org/10.1016/j.jacl.2022.05.022>

Gibbs sampler

Thompson, W. J. (2022). Gibbs sampler. In B. B. Frey (Ed.) *The SAGE encyclopedia of research design* (2nd ed., pp. 621–622). SAGE. <https://doi.org/10.4135/9781071812082.n231>

A diagnostic framework for the empirical evaluation of learning maps

Thompson, W. J. & Nash, B. (2022). A diagnostic framework for the empirical evaluation of learning maps. *Frontiers in Education*, 6, Article 714736. <https://doi.org/10.3389/educ.2021.714736>

2021

20 years of research in educational measurement

Thompson, W. J. (2021). 20 years of research in educational measurement [Cover graphic]. *Educational Measurement: Issues and Practice*, 40(2). <https://doi.org/10.1111/emip.12348>

2020

New approaches to designing and administering inclusive assessments

Karvonen, M., Kingston, N. M., Wehmeyer, M. L., & **Thompson, W. J.** (2020). New approaches to designing and administering inclusive assessments. In NA (Ed.) *Oxford research encyclopedia of education* (pp. 1–23). Oxford University Press. <https://doi.org/10.1093/acrefore/9780190264093.013.1182>

2019

Measuring the reliability of diagnostic mastery classifications at multiple levels of reporting

Thompson, W. J., Clark, A. K., & Nash, B. (2019). Measuring the reliability of diagnostic mastery classifications at multiple levels of reporting. *Applied Measurement in Education*, 32(4), 298–309. <https://doi.org/10.1080/08957347.2019.1660345> [Preprint]

2018

Construct irrelevance

Thompson, W. J. (2018). Construct irrelevance. In B. B. Frey (Ed.) *The SAGE encyclopedia of educational research, measurement, and evaluation* (pp. 375–376). SAGE. <https://doi.org/10.4135/9781506326139.n143>

2016

Assessing cognitive and affective empathy through the Interpersonal Reactivity Index: An argument against a two-factor model

Chrysikou, E. G. & **Thompson, W. J.** (2016). Assessing cognitive and affective empathy through the Interpersonal Reactivity Index: An argument against a two-factor model. *Assessment*, 23(6), 769–777. <https://doi.org/10.1177/1073191115599055>

Dynamic assessment routing

Thompson, W. J., Nash, B., Clark, A. K., & Karvonen, M. (2016). Dynamic assessment routing [Featured graphic]. *Educational Measurement: Issues and Practice*, 35(2), 33. <https://doi.org/10.1111/emip.12114>

2014

Dissociating cognitive and affective empathy in unipolar depression

Thompson, W. J. (2014). *Dissociating cognitive and affective empathy in unipolar depression* [Undergraduate thesis, University of Kansas]. Thesis Commons. <https://doi.org/10.31237/osf.io/m4xjf>



TECHNICAL REPORTS

2025

Using multilevel regression and poststratification to estimate reliability for student groups

Thompson, W. J. (2025). *Using multilevel regression and poststratification to estimate reliability for student groups* (Technical Report No. 25-01). University of Kansas; Accessible Teaching, Learning, and Assessment Systems. [\[PDF\]](#)

2021

2020–2021 DLM administration during COVID-19

Accessible Teaching, Learning, and Assessment Systems (2021). *2020–2021 DLM administration during COVID-19: Participation, performance, and educational experience* (Technical Report No. 21-02). University of Kansas. [\[PDF\]](#)

Using propensity scores to evaluate changes in cross-year performance distributions

Thompson, W. J. & Hoover, J. C. (2021). *Using propensity scores to evaluate changes in cross-year performance distributions* (Technical Report No. 21-01). University of Kansas; Accessible Teaching, Learning, and Assessment Systems. [\[PDF\]](#)

The impact of COVID-19

Clark, A. K., **Thompson, W. J.**, Koblin, J., Kavitsky, E., & Karvonen, M. (2021). *The impact of COVID-19: Validity considerations and scoring and reporting in flexible scenarios* (Project Brief No. 21-01). University of Kansas; Accessible Teaching, Learning, and Assessment Systems. [\[PDF\]](#)

2020

Reliability for the Dynamic Learning Maps assessments

Thompson, W. J. (2020). *Reliability for the Dynamic Learning Maps assessments: A comparison of methods* (Technical Report No. 20-03). University of Kansas; Accessible Teaching, Learning, and Assessment Systems. [\[PDF\]](#)

2018

Assessing model fit for the Dynamic Learning Maps alternate assessment using a Bayesian estimation

Thompson, W. J. (2018). *Assessing model fit for the Dynamic Learning Maps alternate assessment using a Bayesian estimation* (Technical Report No. 18-01). University of Kansas; Accessible Teaching, Learning, and Assessment Systems. [\[PDF\]](#)



CONFERENCE PRESENTATIONS

2026

Through-year assessment as a summative tool: Proof-of-concept evidence from the Pathways for Instructionally Embedded Assessment (PIE) project

Nash, B. & **Thompson, W. J.** (2026, September 27–October 2). *Through-year assessment as a summative tool: Proof-of-concept evidence from the Pathways for Instructionally Embedded Assessment (PIE) project* [Conference session]. International Association for Educational Assessment Annual Conference, Toronto, Canada.

Using diagnostic classification models to improve instructional decision-making

Thompson, W. J. (2026, September 27–October 2). *Using diagnostic classification models to improve instructional decision-making* [Conference session]. International Association for Educational Assessment Annual Conference, Toronto, Canada.

Open and transparent scoring with measr: An R package for diagnostic classification models

Thompson, W. J. (2026, September 27–October 2). *Open and transparent scoring with measr: An R package for diagnostic classification models* [Conference session]. International Association for Educational Assessment Annual Conference, Toronto, Canada.

Aggregating instructionally embedded assessment data using beta IRT models

Jimenez, A., **Thompson, W. J.**, & Nash, B. (2026, April 8–11). *Aggregating instructionally embedded assessment data using beta IRT models* [Paper presentation]. National Council on Measurement in Education Annual Meeting, Los Angeles, CA.

Instructionally embedded assessments to meet instructional and summative uses: Evidence from a pilot study

Nash, B., **Thompson, W. J.**, & Majerus, M. (2026, April 8–11). *Instructionally embedded assessments to meet instructional and summative uses: Evidence from a pilot study* [Paper presentation]. National Council on Measurement in Education Annual Meeting, Los Angeles, CA.

2025

Pathways for instructionally embedded assessment (PIE) proof of concept: Potential future summative uses of an instructionally embedded assessment model

Thompson, W. J., Nash, B., & Bates, S. (2025, June 23–25). *Pathways for instructionally embedded assessment (PIE) proof of concept: Potential future summative uses of an instructionally embedded assessment model* [Symposium]. National Conference on Student Assessment, Denver, CO. [[Slides](#)]

Evaluating learning progression hierarchies with diagnostic models

Jimenez, A., **Thompson, W. J.**, & Nash, B. (2025, April 23–26). *Evaluating learning progression hierarchies with diagnostic models* [Paper presentation]. National Council on Measurement in Education Annual Meeting, Denver, CO. [[Slides](#)]

Patterns of use from an instructionally embedded assessment pilot study

Nash, B., **Thompson, W. J.**, Jimenez, A., Majerus, M., & Bates, S. (2025, April 23–26). *Patterns of use from an instructionally embedded assessment pilot study* [Paper presentation]. National Council on Measurement in Education Annual Meeting, Denver, CO. [[Slides](#)]

Modeling attribute relationships in diagnostic models with the R package measr

Thompson, W. J. (2025, April 23–26). *Modeling attribute relationships in diagnostic models with the R package measr* [Innovation demonstration]. National Council on Measurement in Education Annual Meeting, Denver, CO. [[Slides](#)]

Applications of diagnostic models to learning progressions to improve student learning

Thompson, W. J. (2025, April 23–26). Applications of diagnostic models to learning progressions to improve student learning. In S. Wang (Chair), *Bridging theory and practice: Fostering innovation in diagnostic measurement to enhance education* [Symposium]. National Council on Measurement in Education Annual Meeting, Denver, CO. [[Slides](#)]

2024

Evaluating methods for assessing model fit in diagnostic classification models

Thompson, W. J. (2024, July 15–19). *Evaluating methods for assessing model fit in diagnostic classification models* [Paper presentation]. International Meeting of the Psychometric Society, Prague, Czech Republic. [[PDF](#) / [Slides](#)]

Diagnostic modeling for educational and psychological assessment

Thompson, W. J. (2024, July 8–11). *Diagnostic modeling for educational and psychological assessment* [Conference session]. useR!, Salzburg, Austria. [[Slides](#)]

Evaluating the performance of person-fit detection methods in diagnostic classification models

Hoover, J. C. & **Thompson, W. J.** (2023, April 12–15). *Evaluating the performance of person-fit detection methods in diagnostic classification models* [Paper presentation]. National Council on Measurement in Education Annual Meeting, Chicago, IL. [[PDF](#)]

Using machine learning to identify causes of differential item functioning

Hoover, J. C., Frey, B., & **Thompson, W. J.** (2023, April 12–15). *Using machine learning to identify causes of differential item functioning* [Paper presentation]. National Council on Measurement in Education Annual Meeting, Chicago, IL.

Using contribution analysis to evaluate the validity argument for an assessment system

Kobrin, J., Clark, A. K., & **Thompson, W. J.** (2023, April 12–15). Using contribution analysis to evaluate the validity argument for an assessment system. In J. Kobrin (Chair), *Approaches for evaluating and reporting the strength of validity evidence for assessments* [Symposium]. National Council on Measurement in Education Annual Meeting, Chicago, IL.

A simulated retest method for estimating classification reliability

Thompson, W. J. & Clark, A. K. (2023, April 12–15). A simulated retest method for estimating classification reliability. In Y. Bao, M. Madison, & Q. Pan (Chair), *Diagnostic measurement: Operational and implementational issues* [Symposium]. National Council on Measurement in Education Annual Meeting, Chicago, IL. [[PDF](#) / [Slides](#)]

Applied diagnostic classification modeling with the R package measr

Thompson, W. J. (2023, March 28–30). *Applied diagnostic classification modeling with the R package measr* [Conference session]. National Council on Measurement in Education Annual Meeting, Virtual Sessions. [[Slides](#)]

Visualizing validity evidence

Clark, A. K., **Thompson, W. J.**, & Kobrin, J. (2022, April 22–25). *Visualizing validity evidence: Considering strength of evidence following disrupted administration* [Paper presentation]. National Council on Measurement in Education Annual Meeting, San Diego, CA. [[PDF](#)]

Modifying the M_2 statistic to handle missing data

Hoover, J. C. & **Thompson, W. J.** (2022, April 22–25). *Modifying the M_2 statistic to handle missing data* [Paper presentation]. National Council on Measurement in Education Annual Meeting, San Diego, CA. [[PDF](#)]

The I-SMART project: Empirical map validation

Hoover, J. C., **Thompson, W. J.**, Nash, B., & Kobrin, J. (2021, June 8–11). *The I-SMART project: Empirical map validation* [Paper presentation]. National Council on Measurement in Education Annual Meeting, Virtual Conference. [[PDF](#)]

Technical evidence for diagnostic assessments

Thompson, W. J., Clark, A. K., & Nash, B. (2021, June 8–11). Technical evidence for diagnostic assessments. In W. J. Thompson (Chair), *Diagnostic assessments: Moving from theory to practice* [Symposium]. National Council on Measurement in Education Annual Meeting, Virtual Conference. [[PDF](#) / [Slides](#)]

Developing and refining a model for measuring implementation fidelity for an instructionally embedded assessment system

Kobrin, J., Karvonen, M., Burnes, J., **Thompson, W. J.**, & Clark, A. K. (2021, April 9–12). *Developing and refining a model for measuring implementation fidelity for an instructionally embedded assessment system* [Poster presentation]. American Educational Research Association Annual Meeting, Virtual Conference. [[PDF](#)]

Model fit for diagnostic classification models

Thompson, W. J. & Hoover, J. C. (2020, June 2–3). *Model fit for diagnostic classification models* [Paper presentation]. Modern Modeling Methods Conference, University of Connecticut, Storrs, CT. (Conference canceled)

Diagnostic assessment: DIF detection from binary and aggregate mastery classifications

Hoover, J. C., **Thompson, W. J.**, Clark, A. K., & Nash, B. (2020, April 16–20). *Diagnostic assessment: DIF detection from binary and aggregate mastery classifications* [Paper presentation]. National Council on Measurement in Education Annual Meeting, San Francisco, CA. (Conference canceled)

Comparing reliability methods for diagnostic mastery classifications

Thompson, W. J., Nash, B., & Clark, A. K. (2020, April 16–20). *Comparing reliability methods for diagnostic mastery classifications* [Paper presentation]. National Council on Measurement in Education Annual Meeting, San Francisco, CA. (Conference canceled)

Branding and packaging reports with R Markdown

Thompson, W. J. & Pablo, N. (2020, January 29–30). *Branding and packaging reports with R Markdown* [Conference session]. rstudio::conf(2020), San Francisco, CA. [[Slides](#)]

Empirical methods for evaluating maps

Thompson, W. J. & Nash, B. (2019, April 4–8). Empirical methods for evaluating maps: Illustrations and results. In M. Karvonen (Chair), *Beyond learning progressions: Maps as assessment architecture* [Symposium]. National Council on Measurement in Education Annual Meeting, Toronto, Canada. [[PDF](#) / [Slides](#)]

2020

2019

Measuring the reliability of student mastery classifications at multiple levels of reporting

Thompson, W. J., Clark, A. K., & Nash, B. (2018, April 12–16). *Measuring the reliability of student mastery classifications at multiple levels of reporting* [Paper presentation]. National Council on Measurement in Education Annual Meeting, New York, NY. [[PDF](#) / [Slides](#)]

2017

A hierarchical IRT model for identifying group-level aberrant growth

Brussow, J. A., Skorupski, W. P., & **Thompson, W. J.** (2017, September 6–8). *A hierarchical IRT model for identifying group-level aberrant growth* [Poster presentation]. Conference on Test Security, Madison, WI.

Creating an R package for a reproducible workflow in educational assessment

Thompson, W. J. (2017, July 4–7). *Creating an R package for a reproducible workflow in educational assessment* [Poster presentation canceled]. useR! – International R User Conference, Brussels, Belgium.

Evaluating an initialization tool for student placement into a map-based assessment

Nash, B. & **Thompson, W. J.** (2017, April 26–30). *Evaluating an initialization tool for student placement into a map-based assessment* [Paper presentation]. National Council on Measurement in Education Annual Meeting, San Antonio, TX. [[PDF](#)]

2016

Pitavastatin lowers plasma levels of COQ10 less than equipotent doses of rosuvastatin or atorvastatin

Moriarty, P. M., Sponseller, C. A., Backes, J., Ruisinger, J., Sehar, N., Denney, L., **Thompson, W. J.**, & Wick, J. A. (2016, August 27–31). *Pitavastatin lowers plasma levels of COQ10 less than equipotent doses of rosuvastatin or atorvastatin* [Poster presentation]. European Society of Cardiology Congress, Rome, Italy.

Pitavastatin lowers plasma levels of COQ10 less than equipotent doses of rosuvastatin or atorvastatin

Moriarty, P. M., Sponseller, C. A., Backes, J., Ruisinger, J., Sehar, N., Denney, L., **Thompson, W. J.**, & Wick, J. A. (2016, June 2–4). *Pitavastatin lowers plasma levels of COQ10 less than equipotent doses of rosuvastatin or atorvastatin* [Poster presentation]. Symposium of the International Atherosclerosis Society: “Anitschkow” Days, Saint Petersburg, Russia.

2014

Dissociating cognitive and affective empathy

Thompson, W. J. & Chrysikou, E. G. (2014, April 29). *Dissociating cognitive and affective empathy* [Poster presentation]. University of Kansas Symposium for Undergraduate Psychology Engagement and Research, Lawrence, KS.

Dissociating cognitive and affective empathy

Thompson, W. J. & Chrysikou, E. G. (2014, April 26). *Dissociating cognitive and affective empathy* [Conference session]. University of Kansas Undergraduate Research Symposium, Lawrence, KS.

Transcranial direct current stimulation as a possible intervention tool for emotion regulation in depression

Chrysikou, E. G., **Thompson, W. J.**, Hanson, G. K., Martin, L. E., & Ingram, R. E. (2013, June 20). *Transcranial direct current stimulation as a possible intervention tool for emotion regulation in depression* [Poster presentation]. Integrating Technology in Translational Research Symposium, Kansas City, MO.

Color pleasantness modulated by physiological arousal

Thompson, W. J., Burda, K., Jamison, A., & Supica, D. (2013, May 7). *Color pleasantness modulated by physiological arousal* [Poster presentation]. University of Kansas Symposium for Undergraduate Psychology Engagement and Research, Lawrence, KS.

Performance, competency, and career level among physicians in a treatment program

Gorey, C. M., **Thompson, W. J.**, Vickers, K. L., Williams, M. V., & Williams, B. W. (2013, April 18–20). *Performance, competency, and career level among physicians in a treatment program* [Poster presentation]. Federation of State Medical Boards Annual Meeting, Boston, MA.

Competency, diagnosis, and career level among physicians in a treatment program

Williams, B. W., Gorey, C. M., **Thompson, W. J.**, Vickers, K. L., & Williams, M. V. (2013, April 18–20). *Competency, diagnosis, and career level among physicians in a treatment program* [Poster presentation]. Federation of State Medical Boards Annual Meeting, Boston, MA.

R PACKAGES

rstandlm: Bayesian psychometrics for Dynamic Learning Maps

Thompson, W. J. (2026). *rstandlm: Bayesian psychometrics for Dynamic Learning Maps* (R package version 3.0.0.9000) [Computer software]. Internal R Package.

wjake: Personal themes and formatting preferences

Thompson, W. J. (2026). *wjake: Personal themes and formatting preferences* (R package version 1.0.1) [Computer software]. The Comprehensive R Archive Network. <https://doi.org/10.32614/CRAN.package.wjake>

measr: Bayesian psychometric measurement using ‘Stan’

Thompson, W. J. & Hoover, J. (2026). *measr: Bayesian psychometric measurement using ‘Stan’* (R package version 2.0.1) [Computer software]. The Comprehensive R Archive Network. <https://doi.org/10.32614/CRAN.package.measr>

rdcmchecks: Common argument checks for ‘r-dcm’ packages

Thompson, W. J. (2026). *rdcmchecks: Common argument checks for ‘r-dcm’ packages* (R package version 0.1.1) [Computer software]. The Comprehensive R Archive Network. <https://doi.org/10.32614/CRAN.package.rdcmchecks>

2025

dcmstan: Generate ‘Stan’ code for diagnostic classification models

Thompson, W. J., Hoover, J., & Jimenez, A. (2025). *dcmstan: Generate ‘Stan’ code for diagnostic classification models* (R package version 0.1.0) [Computer software]. The Comprehensive R Archive Network. <https://doi.org/10.32614/CRAN.package.dcmstan>

dlmr: The Dynamic Learning Maps psychometric operational workflow

Thompson, W. J. (2025). *dlmr: The Dynamic Learning Maps psychometric operational workflow* (R package version 3.0.0) [Computer software]. Internal R Package.

2024

tdcmStan: Automating the creation of Stan code for TDCMs

Hoover, J. & **Thompson, W. J.** (2024). *tdcmStan: Automating the creation of Stan code for TDCMs* (R package version 3.0.0) [Computer software]. The Comprehensive R Archive Network. <https://doi.org/10.32614/CRAN.package.tdcmStan>

2023

dcm2: Calculating the M_2 model fit statistic for diagnostic classification models

Hoover, J. & **Thompson, W. J.** (2023). *dcm2: Calculating the M_2 model fit statistic for diagnostic classification models* (R package version 1.0.2) [Computer software]. The Comprehensive R Archive Network. <https://doi.org/10.32614/CRAN.package.dcm2>



TUTORIALS AND WORKSHOPS

2026

Improving assessment with diagnostic classification models

Thompson, W. J. (2026, June 15–19). *Improving assessment with diagnostic classification models* [Workshop]. Paris Conference on Education, Paris, France. <https://learn.r-dcm.org/>

Diagnostic modeling for the Dynamic Learning Maps assessment

Thompson, W. J. (2026, May 4). *Diagnostic modeling for the Dynamic Learning Maps assessment* [Invited talk]. St.Gallen University of Teacher Education, Virtual. [[Slides](#)]

Introduction to diagnostic classification modeling with R and Stan

Thompson, W. J. (2026, April 8–11). *Introduction to diagnostic classification modeling with R and Stan* [Workshop]. National Council on Measurement in Education Annual Meeting, Los Angeles, CA. <https://learn.r-dcm.org>

Advanced diagnostic classification modeling with R and Stan

Thompson, W. J. (2026, April 8–11). *Advanced diagnostic classification modeling with R and Stan* [Workshop]. National Council on Measurement in Education Annual Meeting, Los Angeles, CA. <https://learn.r-dcm.org>

- 2021 **Tidy data science with the Tidyverse and Tidymodels**
Thompson, W. J. (2021, June 14–18). *Tidy data science with the Tidyverse and Tidymodels* [Workshop]. Summer Research Methods Camp, hosted by the Achievement and Assessment Institute, University of Kansas, Lawrence, KS. <https://tidyds-2021.wjakethompson.com>
- 2020 **Using R for item response theory**
Thompson, W. J. (2020, February 24). Using R for item response theory [Guest lecture]. In N. Kingston (Instructor), *Item response theory* [EPSY 922]. Department of Educational Psychology, University of Kansas, Lawrence, KS. <https://github.com/wjakethompson/r-irt>
- 2019 **Tidy data science**
Thompson, W. J. (2019, May 20–24). *Tidy data science* [Workshop]. Stats Camp: Summer Statistical Institute, hosted by the Center for Research Methods and Data Analysis and the Achievement and Assessment Institute, University of Kansas, Lawrence, KS. <https://tidy-ds.wjakethompson.com>
- Psychometric considerations for learning maps-based assessments**
Thompson, W. J., Nash, B., & Clark, A. K. (2019, February 22). *Psychometric considerations for learning maps-based assessments* [Invited talk]. Educational Psychology Proseminar, University of Kansas, Lawrence, KS. <https://www.wjakethompson.com/talk/2019-02-psycho-learning-maps/>
- 2017 **Introduction to ggplot2**
Thompson, W. J. (2017, March 1). Introduction to ggplot2 [Tutorial]. In P. E. Johnson (Instructor), *Statistical computing* [POLS 909]. Department of Political Science, University of Kansas, Lawrence, KS. <https://github.com/wjakethompson/pols-909-ggplot2>
- 2016 **Data visualization using ggplot2**
Thompson, W. J. (2016, October 10). *Data visualization using ggplot2* [Tutorial]. Research, Evaluation, Measurement, and Statistics graduate seminar, University of Kansas, Lawrence, KS. <https://github.com/wjakethompson/ggplot2-seminar-talk>
- 2015 **Statistical analysis in sports**
Thompson, W. J. (2015, October 9). *Statistical analysis in sports* [Invited talk]. Research, Evaluation, Measurement, and Statistics graduate seminar, University of Kansas, Lawrence, KS. [[Slides](#)]
- Data manipulation in R**
Thompson, W. J. (2015, October 7). *Data manipulation in R: Using and transforming your data* [Tutorial]. Center for Educational Testing and Evaluation, University of Kansas, Lawrence, KS.

AWARDS

Currently Funded Projects

- **Principal Investigator:** *Expanding the Functionality and Accessibility of Software for Diagnostic Measurement* (2024–2026). USED, Institute of Education Sciences; \$350,000.
- **Co-Principal Investigator:** *Dynamic Learning Maps (DLM) Alternate Assessment System*. Ongoing state contracts. PI: Meagan Karvonen.
- **Other Personnel (Psychometrician):** *Pathways for Instructionally Embedded Assessment (PIE)* (2022–2026). USED, Office of Elementary and Secondary Education, Office of School Support and Accountability; \$2,500,000. PI: Brooke Nash.

Previously Funded Projects

- **Principal Investigator:** *Improving Software and Methods for Estimating and Evaluating Diagnostic Classification Models* (2021–2024). USED, Institute of Education Sciences; \$225,000.
- **Other Personnel (Psychometrician):** *Innovations in Science Map, Assessment, and Reporting Technology (I-SMART)* (2016–2020). USED, Office of Elementary and Secondary Education; \$3,800,000. PI: Meagan Karvonen.

Unfunded Projects

- **Principal Investigator:** *Improving Software and Methods for Estimating and Evaluating Diagnostic Classification Models* (2020–2022). USED, Institute of Education Sciences; \$225,000.
- **Co-Principal Investigator:** *Advancing Cognitive Diagnostic Computerized Adaptive Testing (CD-CAT) Research* (2024–2027). USED, Institute of Education Sciences; \$900,000. PI: Brooke Nash.

Professional Awards

- AERA Division H Outstanding Publication Award for Advances in Methodology (2023)
- Educational Measurement: Issues and Practice Cover Showcase Winner (2023)
- AERA Inclusion and Accessibility in Educational Assessment SIG Annual Award (2022)
- Educational Measurement: Issues and Practice Cover Showcase Winner (2020)
- Educational Measurement: Issues and Practice Cover Showcase Winner (2017)
- Educational Measurement: Issues and Practice Cover Showcase Top 10 (2016)
- Chancellor's Doctoral Fellowship (2014–2018)
- Outstanding Research by an Undergraduate in Psychology (2014)
- University of Kansas Department of Psychology Best Honors Thesis (2014)
- Dane G. Hansen Leader of Tomorrow Scholarship (2010–2014)

SERVICE

Institutional Service

- University of Kansas
 - Research Technology working group (2021)

Professional Affiliations

- American Educational Research Association (2015–present)
 - Program Chair, Cognition and Assessment SIG (2023)
- American Statistical Association (2019–present)
- National Council on Measurement in Education (2015–present)
 - Co-Chair, Diagnostic Measurement SIGMIE (2024)
 - Student Representative, Diversity and Testing Committee (2015)
- Psychometric Society (2023–present)

Reviewer

- Behaviormetrika
- Educational Measurement: Issues and Practice
- International Journal of Research in Education and Science
- Journal of Educational and Behavioral Statistics
- Journal of Educational Measurement
- Journal of Open Source Software
- Psych
- National Council on Measurement in Education annual meeting
- American Educational Research Association, Division H, Outstanding Publications