Stanford

Dora Demszky

Assistant Professor of Education and, by courtesy, of Computer Science

Graduate School of Education

CONTACT INFORMATION

- **Admin. Support**

  Melissa Cromosini

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Bio

BIO

Dr. Demszky is an Assistant Professor in Education Data Science at the Graduate School of Education at Stanford University. She works on developing natural language processing methods to support equitable and student-centered instruction. She has developed tools to give feedback to teachers on dialogic instructional practices, to analyze representation in textbooks, measure the presence of dialect features in text, among others. Dr Demszky has received her PhD in Linguistics at Stanford University, supervised by Dr Dan Jurafsky. Prior to her PhD, Dr. Demszky received a BA summa cum laude from Princeton University in Linguistics with a minor in Computer Science.

ACADEMIC APPOINTMENTS

- Assistant Professor, Graduate School of Education
- Assistant Professor (By courtesy), Computer Science

HONORS AND AWARDS

- Rising Star in AI for Social Good, Harvard CRCS (2021)

PROFESSIONAL EDUCATION

- Ph.D., Stanford University , Linguistics (2023)
- B.A., Princeton University , Linguistics (2017)

LINKS

- Personal website: https://www.dorademszky.com/

Research & Scholarship

RESEARCH INTERESTS

- Artificial intelligence (AI)
- Assessment & Evaluation
- Bilingual & Multilingual Education
- Classroom Discourse and Interaction

- Collaborative Education Research
- Collaborative Learning
- Community-Engaged Research
- Data Science
- Digital, Media & Multimodal Literacies
- Educational Inequality
- Human-Computer Interaction
- Learning Sciences
- Learning Technologies
- Mathematics Education
- Qualitative Methods
- Quantitative Methods
- Research-Practice Partnerships
- Teacher Learning
- Teacher Professional Development

Teaching

COURSES

2026-27

- Math Out Loud: Collaborative Learning Analytics for Multilingual Math Discourse: CS 435, EDUC 435 (Aut)

2025-26

- Empowering Educators via Language Technology: CS 293, EDUC 473 (Win)
- Researching, Presenting and Publishing Work in AI & Education: CS 220, EDUC 481 (Spr)

2024-25

- Empowering Educators via Language Technology: CS 293, EDUC 473 (Win)
- Researching, Presenting and Publishing Work in AI & Education: CS 220, EDUC 481 (Spr)

2023-24

- Education Data Science Capstone Projects: EDUC 259D (Aut)
- Education Data Science Capstone Projects: EDUC 259E (Win)
- Education Data Science Capstone Projects: EDUC 259F (Spr)
- Empowering Educators via Language Technology: CS 293, EDUC 473 (Aut)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Jeannette Garcia Coppersmith, Jim Malamut

Master's Program Advisor

Saad Ashraf, Ilaria Chen, Vishal Kumar, Hayden Kwan

Doctoral (Program)

Joyce Gill, Alex Nam, Liliana Santos-Deonizio, Mei Tan

Publications

PUBLICATIONS

- **Automated feedback improves teachers' questioning quality in brick-and-mortar classrooms: Opportunities for further enhancement** *COMPUTERS & EDUCATION*
  Demszky, D., Liu, J., Hill, H. C., Sanghi, S., Chung, A.
  2025; 227

- **Scaffolding middle school mathematics curricula with large language models** *BRITISH JOURNAL OF EDUCATIONAL TECHNOLOGY*
  Malik, R., Abdi, D., Wang, R., Demszky, D.
  2025

- **Exploring the Benefit of Customizing Feedback Interventions For Educators and Students With Offline Contextual Multi-Armed Bandits**
  Yun, J., Nie, A., Brunskill, E., Demszky, D., ACM
  ASSOC COMPUTING MACHINERY.2025: 944-949

- **Does Feedback on Talk Time Increase Student Engagement? Evidence from a Randomized Controlled Trial on a Math Tutoring Platform**
  Demszky, D., Wang, R. E., Geraghty, S., Yu, C., Assoc Computing Machinery
  ASSOC COMPUTING MACHINERY.2024: 632-644

- **(sic) Edu-ConvoKit An Open-Source Library for Education Conversation Data**
  Wang, R. E., Demszky, D.
  edited by Chang, K. W., Lee, A., Rajani, N.
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2024: 61-69

- **Backtracing: Retrieving the Cause of the Query**
  Wang, R. E., Wirawarn, P., Khattab, O., Goodman, N., Demszky, D.
  edited by Purver, M., Graham, Y.
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2024: 722-735

- **Bridging the Novice-Expert Gap via Models of Decision-Making: A Case Study on Remediating Math Mistakes**
  Wang, R. E., Zhang, Q., Robinson, C., Loeb, S., Demszky, D.
  edited by Duh, K., Gomez, H., Bethard, S.
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2024: 2174-2199

- **Kid-Whisper: Towards Bridging the Performance Gap in Automatic Speech Recognition for Children VS. Adults**
  Attia, A., Liu, J., Ai, W., Demszky, D., Espy-Wilson, C., Association for the Advancement of Artificial Intelligence
  ASSOC COMPUTING MACHINERY.2024: 74-80

- **Scaling High-Leverage Curriculum Scaffolding in Middle-School Mathematics**
  Malik, R., Abdi, D., Wang, R., Demszky, D., ASSOC COMPUTING MACHINERY
  ASSOC COMPUTING MACHINERY.2024: 476-480

- **Enhancing Tutoring Effectiveness Through Automated Feedback: Preliminary Findings from a Pilot Randomized Controlled Trial on SAT Tutoring**
  Yun, J., Hicke, Y., Olson, M., Demszky, D., ASSOC COMPUTING MACHINERY
  ASSOC COMPUTING MACHINERY.2024: 422-426

- **Reframing Authority: A Computational Measure of Power-Affirming Feedback on Student Writing**
  Tan, M., Mah, C., Demszky, D., ASSOC COMPUTING MACHINERY
  ASSOC COMPUTING MACHINERY.2024: 417-421

- **Using large language models in psychology** *NATURE REVIEWS PSYCHOLOGY*
  Demszky, D., Yang, D., Yeager, D., Bryan, C., Clapper, M., Chandhok, S., Eichstaedt, J., Hecht, C., Jamieson, J., Johnson, M., Jones, M., Krettek-Cobb, D., Lai, et al
  2023; 2 (11): 688-701

- **Can Automated Feedback Improve Teachers' Uptake of Student Ideas? Evidence From a Randomized Controlled Trial in a Large-Scale Online Course** *EDUCATIONAL EVALUATION AND POLICY ANALYSIS*

Demszky, D., Liu, J., Hill, H. C., Jurafsky, D., Piech, C.
2023

- **M-Powering Teachers: Natural Language Processing Powered Feedback Improves 1:1 Instruction and Student Outcomes**
  Demszky, D., Liu, J.
  edited by ACM
  ASSOC COMPUTING MACHINERY.2023: 59-69

- **Towards the Future of AI-Augmented Human Tutoring in Math Learning**
  Aleven, V., Baraniuk, R., Brunskill, E., Crossley, S., Demszky, D., Fancsali, S., Gupta, S., Koedinger, K., Piech, C., Ritter, S., Thomas, D. R., Woodhead, S., Xing, et al
  edited by Rebolledo-Mendez, G., Dimitrova, Matsuda, N., Santos, O. C., Wang, N.
  SPRINGER INTERNATIONAL PUBLISHING AG.2023: 26-31

- **MD3: The Multi-Dialect Dataset of Dialogues**
  Eisenstein, J., Prabhakaran, V., Rivera, C., Demszky, D., Sharma, D., Int Speech Commun Assoc
  ISCA-INT SPEECH COMMUNICATION ASSOC.2023: 4059-4063

- **Measuring Conversational Uptake: A Case Study on Student-Teacher Interactions** *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics (ACL)*
  Demszky, D., Liu, J., Mancenido, Z., Cohen, J., Hill, H., Jurafsky, D., Hashimoto, T.
  2021

- **Learning to Recognize Dialect Features**
  Demszky, D., Sharma, D., Clark, J. H., Prabhakaran, V., Eisenstein, J., Assoc Computat Linguist
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2021: 2315-2338

- **Measuring Conversational Uptake: A Case Study on Student-Teacher Interactions**
  Demszky, D., Liu, J., Mancenido, Z., Cohen, J., Hill, H., Jurafsky, D., Hashimoto, T., Assoc Computat Linguist
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2021: 1638-1653

- **Learning to Recognize Dialect Features** *Proceedings of the 19th Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*
  Demszky, D., Sharma, D., Clark, J. H., Prabhakaran, V., Eisenstein, J.
  2021

- **The Role of Verb Semantics in Hungarian Verb-Object Order** *Proceedings of the Linguistic Society of America (LSA)*
  Demszky, D.
  2021

- **Content Analysis of Textbooks via Natural Language Processing: Findings on Gender, Race, and Ethnicity in Texas US History Textbooks** *AERA OPEN*
  Lucy, L., Demszky, D., Bromley, P., Jurafsky, D.
  2020; 6 (3)

- **GoEmotions: A Dataset of Fine-Grained Emotions**
  Demszky, D., Movshovitz-Attias, D., Ko, J., Cowen, A., Nemade, G., Ravi, S., Assoc Computat Linguist
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2020: 4040-4054

- **Partelet: A Hungarian Corpus of Propaganda Texts from the Hungarian Socialist Era**
  Kmetty, Z., Vincze, V., Demszky, D., Ring, O., Nagy, B., Szabo, M.
  edited by Calzolari, N., Bechet, F., Blache, P., Choukri, K., Cieri, C., Declerck, T., Goggi, S., Isahara, H., Maegaard, B., Mariani, J., Mazo, H., Moreno, A., Odijk, J., Piperidis, S.
  EUROPEAN LANGUAGE RESOURCES ASSOC-ELRA.2020: 2381-2388