

Rony B. Patel

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Ph.D. Candidate with a background in Cognitive Psychology, Learning Sciences, and Intelligent Tutoring Systems. Trained in quantitative and qualitative research methods, practical research applications, data analysis, and scientific communication. Experienced in project management with a diverse and interdisciplinary team of psychologists, data scientists, and human-computer interaction researchers.

Select Professional Experiences

Ph.D. Researcher – Dr. Kenneth Koedinger

09/14 – *present*

- Collected, managed, and analyzed educational data from 350,000+ student interactions
- Communicated results via conference presentations and 6 peer-reviewed papers
 - Exemplary Paper, Educational Data Mining Conference, 2016
 - Best Paper Nominee, Learning Analytics and Knowledge Conference, 2016
- Improved learning outcomes by simply re-ordering tasks (18% improvement < 40 min)

Ph.D. Researcher – Dr. Robert Siegler

09/12 – 08/14

- Tested mechanisms on how to integrate conceptual and procedural learning
- Analyzed K-12 mathematics curriculum to determine best sequencing practices
- Recruited and disseminated research to K-12 schools in the Greater Pittsburgh Area

Education

Carnegie Mellon University

08/12 – *present*

- Ph.D. in Psychology (Expected 07/17)
- Pre-doctoral Fellowship, Program for Interdisciplinary Educational Research (PIER)
Funded by Institute for Educational Sciences Training Grant R305B150008, \$174,000
- Outstanding Service to the Graduate Student Assembly, 2016
- Dick Hayes Award for Graduate Student Service, 2016

Rutgers University

08/07 – 05/10

- B.A. in Psychology (Honors); Minors in Mathematics, Economics, and Cognitive Science
- Henry Rutgers Award for Outstanding Undergraduate Thesis

Skills

Research: Randomized Control Trials (RCT), Video/Verbal Protocol Analysis, Cognitive Task Analysis, Think Aloud, Surveys and Interviews, Longitudinal Research, Iterative Instructional Design, In-Vivo Experiments

Statistics: SEM, HLM, Internal Reliability, MANCOVA, Other Regression Analyses

Programming: Java, Python, Matlab, R, SPSS, SAS, HLM7, Tetrad

Project Management: Leadership, Time Management, Goal Setting, Organization, Collaboration

Communication: Public Speaking, Accessible Scientific Writing, Negotiation, Standardizing Communication, Stakeholder Management

Peer-Reviewed Publications

1. Wiese, E.S., **Patel, R.**, Olsen, J., & Koedinger, K.R. (2015, July) Transitivity is not obvious: Probing prerequisites for learning. In Proceedings of the 37th Annual Meeting of the Cognitive Science Society.
2. Liu, R., **Patel, R.**, & Koedinger, K. (2016, April) Modeling Common Misconceptions in Learning Process Data. In Proceedings of the 6th international conference on learning analytics and knowledge. ACM
3. MacLellan, C., Harpstead, E., **Patel, R.**, & Koedinger, K. (2016, June) The Apprentice Learner Architecture: Closing the loop between learning theory and educational data. In Proceedings of the 9th International Conference in Educational Data Mining. ACM
4. Wiese, E.S., **Patel, R.**, & Koedinger, K.R. (2016, August) Investigating a magnitude representation in a brief intervention for fraction addition. In Proceedings of the 38th Annual Meeting of the Cognitive Science Society.
5. Wiese, E.S., **Patel, R.**, & Koedinger, K.R. (2016, August) Why sense making through magnitude may be harder for fractions than for whole numbers. In Proceedings of the 38th Annual Meeting of the Cognitive Science Society.
6. **Patel, R.**, Liu, R., & Koedinger, K.R. (2016, August) When to Block vs. Interleave? Evidence Against Teaching Fraction Addition before Fraction Multiplication. In Proceedings of the 38th Annual Meeting of the Cognitive Science Society.
7. **Patel, R.**, Liu, R., & Koedinger, K.R. (submitted) When to Block vs. Interleave? Evidence Against Teaching Fraction Addition before Fraction Multiplication.
8. **Patel, R.**, Stampfer-Wiese, E., & Koedinger, K.R. (in prep) Transitivity in Fraction Arithmetic: Investigating Expert Blindspots in Conceptual Understanding.

Leadership, Teaching, and Community Service

VP of Communications, Graduate Student Assembly

05/16 – 06/17

- Collected data from department representatives to benchmark best practices
- Created class inclusion training for Dietrich College Faculty via College Diversity Working Group
- Lobbied to add inclusive practices to 7 CMU awards via the Ryan Teaching Award Committee

Carnegie Mellon University Teaching

09/13 – 05/17

- TA for 4 Psychology Classes; Lecturing, syllabi, office hours, exam creation, and grading

Carnegie Mellon University Service

Co-organized Get Out the Vote (22.5% more students voted in 2016 vs. 2012) 08/16 – 11/16

Psychology Department Representative, Graduate Student Assembly 08/15 – 04/16

Middle and Elementary After School Math Club Teacher 08/14 – 05/15

Inter-Science of Learning Center Conference Organizer 10/13 – 04/14