

BRIEF INTRODUCTION TO RESEARCH PROJECTS

Since completing my PhD in 1996, I have attracted substantial grants and directed teams of researchers investigating problems of practice most rooted in post-apartheid South Africa, ultimately geared towards profound issues of (in)equity.

Teaching mathematics in multilingual classrooms was my first major research project. This research began in 1991 and culminated in a now widely cited book with the same name published by Kluwer (Adler, 2001). The intersection of language and learning in a multilingual society is pivotal to educational practice, and thus a phenomenon that enters all research and teaching practice. This early work, and related publications has impacted, influenced, and remains relevant in the field of research on mathematics teaching and learning across contexts increasing constituted by language diversity.

Professional development research, and the mathematical work of teaching and its effects, including language practices has been the focus of my work since the late 1990s. Between 1996-1999 I directed a research and development project focused on ‘upgrading’ mathematics, science and English language teachers. Adler & Reed (2002) and Adler (2000) and capture this work. They communicate, respectively, how this inter-disciplinary work led to deeper understanding of the complex relationship between subject knowledge development in teacher education programs, teachers’ classroom practices and learner attainment; and a reconceptualization of resources that has influenced the resources approach to mathematics education. The complex nature of the mathematical work that teachers do (see Adler & Davis, 2006), its relationship to the quality of instruction in their specific contexts, and their learners’ learning was the focus of my SARChI research and development Chair, 2010-2019. I worked with a team of researchers, graduate students and postdoctoral fellows to lever change in mathematics teaching and learning first in 10 and then 80 schools in one province in South Africa, researching the process of professional development and related learner’s learning with them. Adler (2021) overviews the results of this extensive work, and Adler & Sfard (2017) explores with others, the vexed relationship between research and practice. A part of this latter project that continues is exploring adaptations of Lesson Study in both South Africa and Malawi, currently with a focus on language responsive mathematics teaching (Adler et al, 2022). Formal biographical details including publications mentioned above follow below.

1. PERSONAL DETAILS

Name: Jillian Beryl Adler, nee Smidt. MASSAf (Academy of Sciences of South Africa).

- Professor of Mathematics Education (1997 - current) and South African Research Chair Initiative (SARChI) Mathematics Education 2010-2019 – Tier 1, School of Education, University of the Witwatersrand, South Africa (SA).
- Honorary Research Fellow, Department of Education, Oxford University, UK. [see here](#)
- Honorary Professor, IOE, UCL's Faculty of Education and Society, London, UK
- Immediate past President International Commission on Mathematical Instruction (ICMI) 2017 – 2020. [see here](#)

2. QUALIFICATIONS

PhD 1996. University of the Witwatersrand (Rand). *Secondary teachers' knowledge of the dynamics of teaching and learning mathematics in multilingual classrooms.*

M.Ed 1985. University of the Witwatersrand (Rand). Dissertation, **with distinction**. *Mathematics by newspaper in South Africa: junior secondary mathematics for adults through the medium of a newspaper.*

B.Sc 1972. University of the Witwatersrand. Mathematics and Psychology (majors)

S.T.D 1973. Secondary Teacher's Diploma. University of Cape Town (mathematics)

3. AWARDS

2022 - Rosi and Max Varon Fellowship, Department of Science Teaching, Weizmann Institute of Science (WIS), Israel. March – May, Visiting Scientist, WIS.

2018 - Research A1-rating, National Research Foundation (NRF), SA, see [Wits A-rated researchers](#)

2015 - Hans Freudenthal Medal awarded by ICMI, named after its eighth president (1967-1970), in recognition of a major cumulative program of research and its impact. [ICMI Hans Freudenthal award](#)

2015 - Svend Pedersen Lecture Award, Department of Mathematics and Science Education, University of Stockholm, for research that has made a significant and lasting contribution to the Department's research and teacher education.

2012 – ASSAf Gold Medal for Science in the Service of Society see [ASSAf awards](#)

2009 – NSTF (National Science and Technology Forum) award for innovation in mathematics and science education, was made to the Marang Centre sat Wits that I was instrumental in establishing in 2006 and in its development through to 2010.

2003 - Vice Chancellor's Research Award, University of the Witwatersrand.

2003 - Vice Chancellor's Academic Citizenship Team Award– Awarded to the Mathematics Education Unit that in 2003 was under Prof Adler's leadership.

4. INVITED KEYNOTE / PLENARY PRESENTATIONS

I have presented over 50 invited lectures across the globe. In July 2024, I will present a plenary lecture at the ICME-15 Congress in Sydney, Australia. Selected recent significant talks:

Thinking-with-Mandela on leveraging educational change. *SAERA's Annual Nelson Mandela Legacy Lecture.* Opening online lecture South African Education Research Association (SAERA) Annual Conference. 10 November 2021. <https://www.saera.co.za/2021-lecture-by-prof-jill-adler/>

Language responsive (mathematics) professional development: How do content and context matter? *XI Simposio de Matematica Y Education Matematica*, Colombia. Online plenary lecture, 18 February 2021

Revisiting resources as a theme in mathematics education. *Third International Conference on Mathematics Textbook Research and Development*, ICMT3, Paderborn, Germany, Sept 2019

5. SELECTED PUBLICATIONS

I have published 5 Books; 60 journal articles; 48 book chapters, and numerous papers in conference proceedings. Books and papers referred above are listed here.

Adler, J. (2000) Conceptualising resources as a theme for mathematics teacher education. *Journal of Mathematics Teacher Education*. 3. 3. 205-224.

Adler, J. (2001) *Teaching mathematics in multilingual classrooms*. Kluwer. Dordrecht.

Adler, J., & Reed, Y. (Eds.) (2002). *Challenges of teacher development: An investigation of take-up in South Africa*. Pretoria, South Africa: Van Schaik.

Adler, J., & Davis, Z. (2006). Opening another black box: Researching mathematics for teaching in mathematics teacher education. *Journal for Research in Mathematics Education*, 37(4), 270-296.

Adler, J. & Sfard, A. (Eds.) (2017) *Research for educational change: Transforming researchers' insights into improvement in mathematics teaching and learning*. Routledge: London.

Adler, J. (2021). Levering change: the contributory role of a mathematics teaching framework. *ZDM - Mathematics Education*, 1-14. doi:10.1007/s11858-021-01273-y

Adler, J., Mwadzaangate, L., & Takker, S. (2022). From defining as assertion to defining as explaining meaning: Teachers' learning through theory-informed lesson study. *International Journal for Lesson and Learning Studies*. doi:10.1108/IJLLS-02-2022-0029

6. GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Twenty doctoral students have graduated under my supervision, and I have hosted 13 postdoctoral fellows most of whom studied outside South Africa and across a range of countries, and all of whom moved on to university positions, also across a range of countries.