

CURRICULUM VITAE OF ROBERT NOEL PRINCE

8 November 2025

Home Address: 3 Morgenrood Road, Kenilworth, Cape Town, 7708
Telephone Numbers: 27 21 761 1735 (h) 27 11 559 2911 (w) 082 452 2557 (cell)
E-Mail: Robert.Prince@uct.ac.za / rprince@uj.ac.za

ACADEMIC HISTORY

2022 PhD Engineering Management, University of Johannesburg
1988 M.Sc. Mathematics, University of Cape Town (awarded with distinction)
1986 B.Sc. (Hons) Mathematics, University of the Western Cape
1983 B.Sc. Mathematics (major), Applied Mathematics (major), Mathematical Statistics,
Computer Science, Physics, University of the Western Cape
1973 Matriculated from Windermere High School, Kensington

CURRENTLY

THE UNIVERSITY OF JOHANNESBURG 2023 – Senior Research Associate, Dean's Office (FEBE)

PREVIOUS EMPLOYMENT

THE UNIVERSITY OF CAPE TOWN 2021 – 2022 Senior Scholar, Centre for Educational Assessments (CEA)

THE UNIVERSITY OF CAPE TOWN 2015 – 2020 Test Development Coordinator of the Centre for Educational Assessments (CEA)

I was responsible for all the test-related products and processes of CEA. My specific responsibilities included:

Academic functions:

- Ensuring the academic integrity -- reliability and validity -- of CEA's tests.
- On-going test development in response to institutional and national needs.
- Remaining up to date in respect of research and new developments in the area of educational assessment in general, and admissions-related testing in particular.
- Contributing to CEA's research and development through peer-reviewed publications, reports and a range of other appropriate outputs.
- Where possible, teaching and supervision of postgraduates in relation to assessment-related areas of scholarship.

Leadership & Management functions:

- Providing leadership for the test development teams with respect to item and test development and analysis.
- Line management responsibility of Academic Literacy, Quantitative Literacy, Mathematics research test leads, Statistician and Test administrator.
- Overseeing and managing the standards-setting requirements of CEA's tests.
- Analysing and reporting on test-related data to a variety of constituencies, institutionally and nationally.
- Providing training in the field of test development in order to build capacity in this scarce skill area.
- Contributing to responses to stakeholder queries (e.g. media, HEI's) relevant to CEA's tests, including interpretations of results and the implications of these.

2011 – 2014 *UNIVERSITY OF CAPE TOWN*, Deputy Director of the Academic Development Programme (ADP) seconded as Director of the Alternative Admissions Research Project (AARP), Centre for Higher Education Development (CHED)

2008 – 2010 *UNIVERSITY OF CAPE TOWN*, Deputy Director of the Academic Development Programme (ADP), Centre for Higher Education Development (CHED)

1999 – 2007 *UNIVERSITY OF CAPE TOWN*, Numeracy Centre Co-ordinator in the Academic Development Programme, Centre for Higher Education Development (CHED)

1990 – 1998 *THE UNIVERSITY OF THE WESTERN CAPE*, Department of Mathematics and Applied Mathematics

1986 – 1989 *UNIVERSITY OF CAPE TOWN*, Department of Mathematics and Applied Mathematics

1976 – 1986 *BONWIT (PTY) LTD*, Work Study Trainee (1976); Work Study Engineer (1977 – 1978); Project Engineer (1979 – 1982) and Work Study Manager (1983 – April 1986) in the Management Services Division

AWARDS AND SCHOLARSHIPS

2018	UCDP Grant
2019	URC Block Grant
2018	URC Block Grant
2017	URC Block Grant
2016	URC Block Grant
2015	ERP Grant
2011	Nelson Mandela Fellow at W.E.B. Du Bois Institute, Harvard University
1994	University of Missouri – University of the Western Cape Staff Exchange
1993	Mellon Faculty Fellowship
1983	Liebenberg and Stander
1983	Old Mutual Medal of Merit

CONTRIBUTION TO NATIONAL TEACHING AND LEARNING ENVIRONMENT

My contribution to the development of the Quantitative Literacy Tests (QLT) spans more than twenty years. These tests at the University of Cape Town determine the levels of quantitative literacy of individuals and cohorts and have been used to assess students across faculties in order to facilitate the quantitative literacy articulation gap between student cohorts and disciplinary demands. They are also used in the development of QL interventions for many faculties at UCT. I have also led the quantitative literacy test which is part of the National Benchmarks Tests (NBT) Project and have been responsible for developing the framework, trial tests and pilot tests. I have also coordinated the CEA Research and Development department which has the responsibility for the NBT Project for the national higher education sector on behalf of USAf.

- Board member of the Independent Examinations Board (IEB)
- Previous member of The Association for Mathematics Education of South Africa (AMESA)
- Previous member of the Higher Education Learning and Teaching Association of Southern Africa (HELTASA)
- Previous executive member of the Higher Education Learning and Teaching Association of Southern Africa (HELTASA)
- Previous convenor of the Access and Admission Special Interest Group (SIG) of the Higher Education Learning and Teaching Association of Southern Africa (HELTASA)
- Previous member of the South African Association for Institutional Research (SAAIR)
- Previous member of the Southern African Association for Research in Mathematics, Science and Technology Education (SAARMSTE)
- External examiner and reviewer of books, conference papers and journal articles
- Contributing and commenting on National and Institutional policy documents regarding Mathematics and Mathematical Literacy.
- I have authored and presented numerous technical reports to a range of higher education stakeholders including Universities South Africa (USAf), Department of Basic Education, Department of Higher Education and Training, Public and Private Higher Education institutions and Bursary funders.

RESEARCH

RESEARCH INTERESTS

- Access to academic practices in higher education at undergraduate and postgraduate levels - ways of mediating the articulation gaps between the practices of students and the specific academic practices in higher education.
- Educational testing in general and in particular the assessment of the Academic Literacy, Quantitative Literacy, Statistical Literacy, Mathematics and Scientific Reasoning levels of cohorts of students to assist with diagnosis of student learning difficulties, selection and placement of students into programmes, informing curriculum design and the provision of appropriate curricular interventions.
- Teacher and tutor training practices in relation to academic literacies (including academic, quantitative, mathematical, scientific and statistical literacy): ways of mediating the multiple practices that teachers of academic literacies have to draw on to teach academic literacies.
- The use of technology both as technical (psychometric and statistical) tools and as educational (blended learning) tools.
- Commutative Algebra: Analogues of Number-Theory for Higher Dimensional Rings.

RESEARCH PROJECTS

The Diagnostic Mathematics Information for Student Retention and Success (DMISRS) project.

This project is funded through the University Collaborative Development Programme (UCDP) from the Department of Higher Education and Training (DHET). The project seeks to bring mathematicians from across the country together to work collectively and collaboratively in an attempt to improve the graduation and throughput of students in Science, Technology, Engineering and Mathematics (STEM) programmes by focusing on improving student performance in mathematics.

The Academic Development research Project (ADrP) - A new generation of university students: an investigation of changes and continuities.

This project was a longitudinal quantitative and qualitative study located in the Academic Development Programme (ADP). The project focused on access and throughput of students from disadvantaged backgrounds, particularly those who have been admitted into dedicated Academic Development Programmes. A key challenge for the South African Higher Education sector is the retention and graduation of these students. Our question is: 'What facilitates or hinders the 2008 NSC students' access to and/or success in higher education study'? Research has shown that students from marginalised/disadvantaged communities, struggle to access new disciplinary discourses because of their knowledge base, linguistic difficulties and because they come from different cultural backgrounds. Rochelle Kapp and I conceptualised the project, fund-raised for it and co-convened the running of the project which had ten ADP staff members.

The National Benchmark Tests (NBT) project

In 2005, arising from concerns about the low graduation rates at South African universities, Higher Education South Africa (HESA) initiated a project designed to deliver accurate information about the academic preparedness of its incoming students. The project became known as the National Benchmark Tests Project (NBTP). Following wide consultation and sector participation in all processes, the NBTP became fully operational in 2009. It tests students' proficiencies in three core areas believed to underlie future academic success: academic literacy, quantitative literacy, and mathematics. I have been responsible for developing the framework for the quantitative literacy test which is part of this project and lead the development thereof. The NBT project is situated in the Centre for Educational Assessments (CEA). I coordinate the research and development within CEA and provide academic leadership to CEA.

The Postgraduate Literacies (PG Lit) project

The Postgraduate (PG) Literacies research project was a cross-cutting research initiative in the Centre for Higher Education Development (CHED) at the University of Cape Town. The project aimed to research and develop ways of supporting postgraduates in their writing of research. In its cross-cutting nature, it recognized that postgraduate literacies are multiple and includes academic literacy, academic numeracy practices and technology. This project involved sub-projects and I took the lead on the academic numeracy practices aspects of this project.

South African Multimodality in Education (SAME): Academic Numeracy Practices (ANP) project

Research on students' academic literacies practices has tended to focus on the written mode in order to understand the academic conventions necessary to access Higher Education. However, quantitative information

can be represented through a range of modes (such as writing, visuals and numbers) and different genres (such as tables, charts, graphs). It is important to think of the relationships between these different representations of the same data. This research looks at student texts in quantitative disciplines, in order to explore some questions around multimodal academic numeracy practices.

The Collaborative Mathematics Project (CMP)

In February 2014 the Centre for Educational Assessments (CEA) at the University of Cape Town facilitated a one-day First Year Mathematics Forum (FYMF). Academics involved in Mathematics teaching and learning across the country met to discuss the key role the NBTs could play in helping Mathematics departments to improve the learning and teaching and success of Mathematics students.

At the end of this forum five institutions agreed to work together to address some of the issues that had been raised. The Collaborative Mathematics Project was thus established, utilising funding made available by the Department of Higher Education and Training (DHET) for a three year period, with Stellenbosch University as the grant holder. The five institutions were Stellenbosch University, and the Universities of Cape Town, Fort Hare, the Free State, and KwaZulu-Natal. Representatives from these five institutions worked towards

- identifying high failure rates within first year Mathematics courses (at the five participating institutions, and others wherever possible);
- identifying the extent to which the high failure and high drop-out rates could be related to diagnostic information provided by the NSC and NBT;
- investigating (by means of a survey and focus groups) current Mathematics curriculum integrated support that is currently available
- evaluating available Mathematics support resources which students can use to address identified knowledge gaps.

One of the intended NBT outcomes was the diagnostic information on preparedness for university (beyond test scores and benchmark proficiency levels) that could be provided to institutions for their first-year cohort. This information could inform the nature of extended degree courses and Mathematics curriculum integrated support at first year level. By the end of 2016 there were, for the first time, a baseline picture of the Mathematics support situation in the five collaborating institutions.

RESEARCH OUTPUT

I have published thirty-eight peer reviewed articles (twenty-six as journal articles and twelve as peer reviewed conference proceedings), four book chapters, two book sections and one newspaper article. I have four journal articles under review. I have presented 60 papers at local, workshops and conferences and have produced approximately 40 technical reports.

Journal articles published

Prince, Robert N.. "Comparing National Benchmark Quantitative Literacy Paper-Based Tests Scores with its Computer-Based Counterparts." *Numeracy* 18, Iss. 1 (2025): Article 1. DOI: <https://doi.org/10.5038/1936-4660.18.1.1464>

Prince, R. N., & Simpson, Z. (2025). A Transformative Approach to Admissions Assessment: The South African Case. *Designs for Learning*, 16(1), 64–74. DOI: <https://doi.org/10.16993/dfl.232>

Prince, R. N., & Balarin, E. (2025). Reflecting on the Diagnostic Mathematics Information for Student Retention and Success (DMISRS) journey: Key insights into negotiating large-scale collaborative projects. *Perspectives in Education*, 43(4). <https://doi.org/10.38140/pie.v43i4.9198>

Prince, R. N., & Simpson, Z. (2025). *Professional development of tertiary mathematics educators: A landscapes of practice approach*. *Perspectives in Education*, 43(4). <https://doi.org/10.38140/pie.v43i4.8180>

Sango, T., Prince, R., Steyn, S., & Mudavanhu, P. 2022. High stakes online assessments: A case study of National Benchmark Tests during COVID-19. *Perspectives in Education*, 40(1), pp. 212-233.

Prince, R. N., Frith, V., Steyn, S. and Cliff, A. F. 2021. Academic and Quantitative Literacy in Higher Education: relationship with school-leaving subjects. *South African Journal of Higher Education*. 35, 3. pp 163 – 181.

- Pienaar, L., Prince, R. and Abrahams, A. 2021. The Development of a Baseline Assessment tool to establish Students' Foundational Knowledge of Life Sciences at entry into university. *Journal of Health Professions Education*. 13. pp 77-82.
- Prince, R. and Frith, V. 2020. An investigation of the influence of mathematical competence and language ability on the academic numeracy of university students in South Africa. *ZDM – Mathematics Education*. 52, 433-445. DOI: <https://doi.org/10.1007/s11858-019-01063-7>
- Simpson, Z. and Prince, R. 2018. Teaching, Learning, and Employing Analytical Frameworks as Performance: Analysis of a Quantitative Literacy Event in Applied Mechanics. *Designs for Learning*. 10(1), 76-87. DOI: <http://doi.org/10.16993/dfl.95>
- Frith, V. and Prince, R. 2018. The National Benchmark Quantitative Literacy Test for Applicants to South African Higher Education. *Numeracy*. 11 (2)
- Prince, R. 2017. The relationship between school-leaving examinations and university entrance assessments: the case of the South African system. *Journal of Education*. 70. pp. 133 – 160.
- Prince, R. and Frith, V. 2017. The quantitative literacy of South African school-leavers who qualify for higher education. *Pythagoras*. 38. (1) pp. 1 – 14.
- Bohlmann, C., Prince, R. and Deacon, A. 2017. Mathematical Errors Made by High Performing Candidates Writing the National Benchmark Tests. *Pythagoras*. 38. pp. 1 – 10.
- Prince, R. 2016. Predicting Success in Higher Education: The Value of Criterion and Norm-referenced Assessments. *Practitioner Research in Higher education*. 10, 1. pp. 22 – 38.
- Frith, V. and Prince, R. 2016. Quantitative literacy of school leavers aspiring to higher education in South Africa: lessons from the National Benchmark Quantitative Literacy test. *South African Journal of Higher Education*. 30, 1. Pp. 138-161.
- Prince, R. and Archer, A. 2014. Exploring Academic Voice in Multimodal Quantitative Texts. *Literacy and numeracy Studies*. 22, 1. pp. 39 - 58.
- Kapp, R; Badenhorst, E; Bangeni, B; Craig, T. S; Janse van Rensburg, V; Le Roux, K, Prince, R; Pym, J; van Pletzen, E. 2014. Successful students' negotiation of township schooling in contemporary South Africa. *Perspectives in Education*. 32, 3. pp. 50 - 61.
- Frith, V. and Prince, R. 2009. A framework for understanding the quantitative literacy demands of higher education. *South African Journal of Higher Education*. 23, 1. 83 – 97. ISSN 1011-3487.
- Prince, R. and Archer, A. 2008. A New Literacies approach to academic numeracy practices in Higher Education in South Africa. *Literacy and Numeracy Studies*. 16, 1. 63 – 75. ISSN 1441-0559.
- Frith, V. and Prince, R.N. 2006. Reflections on the role of a research task for teacher education in data handling in a Mathematical Literacy education course. *Pythagoras* 64. The Association for Mathematics Education of South Africa. pp. 52-61
- Prince, R.N. and Archer, A. 2006. Quantitative Literacy as situated social practice in Higher Education. *International Journal of Learning*. 12. Common Ground Publishers. ISSN 1447-9494.
- Frith, V, Prince, R.N. and Jaftha, J.J. 2004. Evaluating the Effectiveness of Interactive Computer Tutorials for an Undergraduate Mathematical literacy course. *British Journal of Educational Technology*, 35, 2, pp. 159-171
- Archer, A., Frith, V, and Prince, R.N. 2002. A project-based approach to numeracy practices at university focusing on HIV/AIDS. *Literacy and Numeracy Studies*. 11, 2. pp. 123 -131. ISSN 1441-0559.

Journal articles pending publication

Komati, M, Prince, R. N and Korkie, E. (pending) The expected readiness of third year physiotherapy students in clinical education: Perspectives of academics in South Africa- South African Journal of Physiotherapy

Komati, M, Prince, R. N and Korkie, E. (pending) Setting Cut Scores for a Clinical Readiness Diagnostic Assessment for Third Year Physiotherapy Students- African Journal of Health Professions Education

Prince, Robert N. (pending). "Does the National Benchmark Quantitative Literacy Test Predict Performance in STEM Programmes in Commerce, Engineering and Science." Numeracy

Journal articles under review

Prince, R. N., Jappie, N., Millett, C. and Kefala, K. (under review) Beyond Selection Bias: What Propensity Score Matching Reveals About Extended Curriculum Programmes in South African Higher Education. Scholarship of Teaching and Learning in the South

Komati, M, Prince, R. N and Korkie, E. (under review) Validation of the Clinical Readiness Diagnostic Assessment (CRDA) for Third-Year Physiotherapy Students in South Africa: A Pilot Study- African Journal of Health Professions Education

Komati, M, Prince, R. N and Korkie, E. (under review) Development of a Clinical Readiness Diagnostic Assessment (CRDA) tool for third-year Physiotherapy students, in South Africa- Journal of Physiotherapy

Rzyankina, E, and Prince, R. N. (under review) Facilitating Epistemological Access to First-year Mathematics: The Case of a University of Technology. *Perspectives in Education*

Publications in process

Prince, R. (2025, November). Beyond Comparability: Materiality, Capital, and the Assessment of Academic Numeracy in a Digitally Divided Context.

Prince, R. (2025, November). Navigating the Engineering Pipeline: Quantitative Literacy as a Predictor of Success in a South African Context.

Prince, R. (2025, November). Extended versus Regular Curriculum Programmes in Engineering: A South African Case Study.

Chapters in books published and pending

Prince, R. N. and Simpson, Z (pending). Exploring the Influence of Socio-Economic Status on Higher Education Admissions Test Performance: A Large-Scale Quantitative Analysis.

Prince, R. 2022. Teaching, Learning and Assessment of Multimodal Digital Academic Numeracy Practices. In Maria Grazia Sindoni and Ilaria Moschini (Ed) *Multimodal Literacies Across Digital Learning Contexts*. pp. 247 - 259.

Kapp, R; Badenhorst, E; Bangeni, B; Craig, T. S; Janse van Rensburg, V; Le Roux, K, Prince, R; Pym, J; van Pletzen, E. 2017. Students' negotiation of Learning and Identity in Working-class Schooling. In B. Bangeni and R. Kapp (Ed) *Negotiating Learning and Identity in Higher Education: Access, Persistence and Retention*. pp. 1 - 29.

Frith, V., Jaftha, J.J. and Prince, R.N. 2005. Interactive Excel Tutorials in a Quantitative Literacy Course for Humanities Students In: M.O. Thirunarayanan, Aixa Pérez-Prado (Eds.) *Integrating Technology in Higher Education*. University Press of America, Maryland. pp.247 - 258.

Sections in books

Frith, V. and Prince, R.N. 2006. Test domains and constructs: Quantitative literacy. In: H. Griesel (Ed) *Access and Entry Level Benchmarks, the National Benchmark Tests Project*, Higher Education South Africa -HESA, Pretoria. pp. 28-34.

Frith, V. and Prince, R.N. 2006. Elaboration on the elements of the definition of Quantitative Literacy. In: H. Griesel (Ed) *Access and Entry Level Benchmarks, the National Benchmark Tests Project*, Higher Education South Africa -HESA, Pretoria. pp. 47-54.

Peer reviewed conference proceedings

Prince R.N and Simpson, Z.S. 2025. Investigating the Relationship Between Mathematics and Retention and Success in Engineering Study: a South African Case Study. Proceedings of the European Society for Engineering Education (SEFI) Conference.

Prince R.N and Simpson, Z.S. 2024. Understanding the Support Mechanisms Available to First-Year Mathematics Students: A Case Study from South Africa. Proceedings of the European Society for Engineering Education (SEFI) Conference.

Prince, R. and Simpson, Z. 2022. Does Higher Education Entrance Assessment in Academic Literacy Predict Success in Engineering Study? Proceedings of the IEEE ProComm (SEFI) Conference (IEEE ProComm 2022).

Prince, R., & Simpson, Z. (2021). *Do Higher Education Entrance Exams Predict Success in Engineering Study?*. In Heiß, H.-U., Järvinen, H.-M., Mayer, A., & Schulz, A. (Eds.), *Blended Learning in Engineering Education: challenging, enlightening and lasting?* SEFI 49th Annual Conference (pp. 420-428). European Society for Engineering Education (SEFI), Berlin, Germany. DOI: 10.5281/zenodo.14647050.

Prince, R. and Simpson, Z. 2021. Do Higher Education Entrance Exams Predict Success in Engineering Study? Proceedings of the 49th annual European Society of Engineering Education (SEFI) Conference (SEFI 2021). <https://www.sefi.be/wp-content/uploads/2021/12/SEFI49th-Proceedings-final.pdf>

Prince, R., Mutakwa, D and Dunlop, J. 2019. The diagnostic potential of admissions tests for South African Higher education. Proceedings of the 8th Research in Engineering Education Symposium (REES 2019). <https://www.sasee.org.za/wp-content/uploads/REES-2019-proceedings.pdf>

Prince, R., Mutakwa, D and Dunlop, J. 2017. School-leaving and university entrance assessments in explaining performance in Engineering studies. Proceedings of the 4th Biennial Conference of the South African Society for Engineering Education (SASEE). <https://www.sasee.org.za/wp-content/uploads/Proceedings-of-the-4th-Biennial-SASEE-Conference-2017.pdf>

Prince, R., and Bohlmann, C. 2016. Broadening Epistemological Access to Tertiary Mathematics: Challenges and Opportunities. Proceedings of the Southern Africa Mathematical Sciences Association (SAMSA2016). <http://samsa-math.org/wp-content/uploads/2017/08/P1-20Princev2.pdf>

Prince, R. and Simpson, Z. 2016. Quantitative Literacy Practices in Civil Engineering Study: Designs for Teaching and Learning. In Nortvig, A.-M., Sørensen, B. H., Misfeldt, M., Ørngreen, R., Allsopp, B. B., Henningsen, B., & Hautopp, H. (Eds.). *Proceedings of the 5th International Conference on Designs for Learning*. (Open Access ed.) Aalborg Universitetsforlag.

Prince, R., and Frith, V. 2006. An approach to ‘Mathematical Literacy’ teacher education at a South African university. Proceedings of the Third International Conference on the Teaching of Mathematics (ICTM3). <http://www.tmd.org.tr/sites/ICTM3/uploads/documents/ICTM3-2006.pdf>

Frith, V., Jaftha, J.J. and Prince, R.N. 2004. Students' confidence in doing mathematics and in using computers in a university foundation course. In: A. Buffler and R.C. Laugksch (Eds.) *Proceedings of the 12th Annual Conference of the Southern African Association for Research in Mathematics, Science and Technology Education*. Durban: SAARMSTE. pp. 234-245.

Archer, A., Frith, V and Prince, R.N. 2002. A project-based approach to numeracy practices at university focusing on HIV/AIDS. In *Proceedings of the Second International Conference on the Teaching of Mathematics (at the undergraduate level)*. Creta Maris Hotel & Conference Centre, Greece 1- 6 July. John Wiley & Sons Inc. http://www.math.uoc.gr/~ictm2/Proceedings/ICTM2_Proceedings_Table_of_Contents.html
ISBN 0-471-46332-9.

Frith, V., & Prince, R. N. (2001, July). “*Gatekeeper*” vs “*Gateway*”. In J. Engelbrecht (Ed.), *Proceedings of the Third Southern Hemisphere Symposium on Undergraduate Mathematics Teaching* (pp. 46–52). DELTA '01: Warthog Conference, Kruger National Park, South Africa.

Other publications

Yeld, N. and Prince, R. (2012, October). A bridge too far for school leavers. Mail & Guardian.
<https://mg.co.za/article/2012-10-12-a-bridge-too-far-for-school-leavers/>

Conference and workshop paper presentations

Prince, R. 2022. Does Higher Education Entrance Assessments in Academic and Quantitative Literacies Predict Success in STEM Programmes? Southern African Linguistics and Applied Linguistics Society Conference 2022 (SALALS 2022). Potchefstroom, 27 – 30 June

Prince, R., Mutakwa, D and Dunlop, J. 2019. The diagnostic potential of admissions tests for South African Higher education. Proceedings of the 8th Research in Engineering Education Symposium (REES 2019). Cape Town, 10 – 12 July

Prince, R. and Jaftha, J. 2019. Teaching, Learning and Assessment of Multimodal Digital Academic Numeracy Practices. Approaches to Multimodal Digital Environments: from theories to practices (A-MODE) International Conference Rome, 20 – 22 June

Prince, R., 2018. Assessment of multimodal academic numeracy practices 9th International Conference on Multimodality (9ICOM) Conference. Denmark, 15 – 17 August.

Prince, R., Conradie, J and Mutakwa, D. 2018. Assessment of mathematics learning potential: the mathematics comprehension test 11th International Test Commission Conference. Montreal, Canada, 2 – 5 July.

Prince, R., 2017. Assessment as a Social Lever in Higher Education: norm-referenced and/or criterion-referenced assessments? 43rd International Association for Educational Assessment (IAEA) Conference. Georgia, 2 – 6 October.

Prince, R., Mutakwa, D and Dunlop, J. 2017. School-leaving and university entrance assessments in explaining performance in Engineering studies. 4th Biennial Conference of the South African Society for Engineering Education (SASEE). Cape Town, 13 – 15 June.

Prince, R. 2017. Quantitative literacy practices in civil engineering study: responding to a changing higher education landscape. 4th Biennial Conference of the South African Society for Engineering Education (SASEE). Cape Town, 13 – 15 June.

Prince, R., and Bohlmann, C. 2016. Broadening Epistemological Access to Tertiary Mathematics: Challenges and Opportunities. Southern Africa Mathematical Sciences Association (SAMSA2016) Conference. November 21 – 24.

Prince, R., 2016. Broadening Epistemological Access to Tertiary Mathematics: challenges and opportunities. NWU-PUK Mathematics Workshop. North-West University, Potchefstroom, 31 August – 2 September.

Prince, R., 2016. Assessment for Teaching and Learning in Higher Education: a choice between assessments? 42nd International Association for Educational Assessment (IAEA) Conference. Cape Town, 21 – 26 August.

Prince, R., 2015. Testing to inform curriculum design and to create productive student learning and development environments. Higher Education Teaching and Learning Association of South Africa (HELTASA) Conference. North-West University, Potchefstroom, 17 – 20 November.

Prince, R., 2015. Educational Testing for learning: How might the profiling of the present day student's numeracy proficiency be used to support teaching and learning? Higher Education Numeracy ≠ Basic Mathematics Symposium. Durban University of Technology (DUT), Durban. 31 August.

Prince, R., 2015. Is there Quantitative Literacy (Higher Education Numeracy) lurking in your course? – A workshop. Higher Education Numeracy ≠ Basic Mathematics Symposium. Durban University of Technology (DUT), Durban. 31 August.

Prince, R., 2015. Pre-admission testing: How might these be used to support admission decisions and the teaching and learning of the present day student? Fourth Annual Teaching and Learning Week. University of Fort Hare. Alice, Eastern Cape, 22 – 24 July.

Prince, R., 2015. Placement for access and a fair chance of success in South African Higher Education Institutions. Fifth International Assessment in Higher Education Conference. Birmingham, United Kingdom, 24 – 25 June.

- Prince, R. and Cliff, A, 2015. Data from the National Benchmark Tests project of Higher Education South Africa: How might these be used to support teaching and learning in higher education. Siyaphumelela Conference. SAIDE. Gauteng, 14 - 15 May.
- Prince, R. and Frith, V, 2014. Quantitative literacy of university applicants: diagnostic information from the National Benchmark Test. Fourth Annual Teaching and Learning Conference. University of Cape Town. Cape Town, 20 October.
- Prince, R. 2014. Developing academic argument in multimodal quantitative texts. Seventh International Conference on Multimodality (7 ICOM). Hong Kong Polytechnic, Hong Kong. 11-13 June.
- Prince, R., 2012. Higher Education Selection and Placement: Does it matter? Higher Education Teaching and Learning Association of South Africa (HELTASA) Conference. University of Stellenbosch, 28 – 30 November.
- Prince, R. 2012. Higher Education Degree Study: What does the National Benchmark Tests (NBTs) Project have to offer? 17th Annual Southern African Association for Institutional Research Conference. University of the Free State. 3 – 5 October.
- Prince, R. 2012. Assessing for Difference to Inform Teaching Differently. Second Annual UCT Teaching and Learning Conference. University of Cape Town. 25 October.
- Prince, R., 2011. South African higher education: the future is certain, the past is unpredictable, or is it? Harvard. Harvard University. Cambridge, United States, 16 November.
- Prince, R.N., and Archer, A., 2010. Proposing a framework for exploring multimodal academic numeracy practices in Higher Education. Fifth International Conference on Multimodality (5ICOM). University of Technology, Sydney. 1 – 3 December.
- Prince, R., 2010. Using admission data to inform Policy Decisions: Validity of Higher Education Admission Criteria – the National Senior Certificate and the National Benchmark Tests Project. Workshop at the Higher Education Teaching and Learning Association of South Africa (HELTASA) Conference. University of Limpopo, 22 – 25 November 2010.
- Yeld, N. and Prince, R. 2010. Purpose, context & evidence: limitations and contributions of assessment for curriculum reform at university entrance level. Identifying and Nurturing High Potential in Marginalised Communities. University of the Witwatersrand. November.
- Yeld, N. and Prince, R. 2010. The National Benchmark Tests Project in South Africa: Information at the Interface between Schooling and Higher Education. 36th Annual Conference of the International Association for Educational Assessment. Bangkok, Thailand. 22 – 27 August.
- Prince, R. and Yeld, N. 2010. The National Benchmark Tests Project: Informing Appropriate Higher Education Curriculum Design. 17th Annual Southern African Association for Institutional Research Conference. University of Johannesburg. 21 – 23 September.
- Prince, R.N.. 2009. Postgraduate Academic Numeracy Practices: Risky journeys, traversing academic disciplinary spaces by resilient travellers? Presentation at the Higher Education Learning and Teaching Association of Southern Africa (HELTASA) Conference. University of Johannesburg, 25 - 27 November 2009.
- Bowie, L., Frith, V., Prince, R. and Venkat, H. 2009. Examining mathematics and mathematical literacy: Curriculum change and cognitive demand. Presentation at the 17th Annual meeting of Southern African Association for Research in Mathematics, Science and Technology Education. Rhodes University, South Africa. 19 – 22 January 2009.
- Frith, V., Lloyd, P. And Prince, R. 2008. Quantitative Literacy in Law: ‘Law that Counts’. Presentation at the Higher Education as Social Space (HESS) joint HELTASA and SAARDHE Conference. Grahamstown, 30 November – 3 December 2008.

- Prince, R.N. 2007. Exploring Postgraduate Quantitative Literacy Practices in a Particular Discipline. Presentation at the Fourteenth International Conference on Learning. University of the Witwatersrand, South Africa. 26 – 30 June.
- Frith, V. and Prince, R. 2007. Understanding the Quantitative Literacy Demands of Higher Education. Presentation at the Fourteenth International Conference on Learning. University of Witwatersrand, South Africa. 26 – 30 June.
- Prince, R., and Frith, V. 2007. The five “R’s” in mathematical literacy: Reading, ‘riting, ‘rithmetic, Presentation at the Association for Mathematics Education of South Africa. Western Cape Regional Conference. 19th May 2007.
- Prince, R.N. and Frith, V. 2006. An approach to ‘Mathematical Literacy’ teacher education at a South African university. Proceedings of the Third International Conference on the Teaching of Mathematics (ICTM3)
- Yeld, N., Cliff, A.F., Prince, R. et al. 2006. The National Benchmark Tests Project (NBTP). Special Interest Group (SIG) Symposium on Access and Admissions. Annual HELTASA Conference, Pretoria.
- Prince, R.N. and Archer, A. 2005. Quantitative Literacy as situated social practice in Higher Education. Presentation at the Twelfth International Conference on Learning. Designs for Learning. Faculty of Education, University of Granada, Spain. 11 – 14 July.
- Prince, R.N. and McAuliffe, S. 2005. Can Numeracy levels of first year education students help inform programme design? Presented at the First African Regional Congress of the International Commission on Mathematical Instruction (ICMI). University of the Witwatersrand, South Africa. 22 – 25 June
- Frith, V., Reddy, S. and Prince, R.N. 2005. Using the context of saving water to teach Mathematical Literacy Presentation at: Association for Mathematics Education of South Africa. National Conference. Kimberley, June 2005.
- Prince, R.N. and Frith, V. 2004. Developing relevant learning experiences for Mathematical literacy, using resources from newspapers, the Internet and the classroom Presentation at: Association for Mathematics Education of South Africa. Western Cape Regional Conference. 7th September 2004.
- Frith, V. Bowie, Gray, C and Prince, R.N. 2003. Mathematical Literacy of Students entering First Year at a South African university Proceedings of the Ninth National Congress of the Association for Mathematical Education of South Africa. 30 June-4 July 2003. pp. 186-193
- Frith, V., Prince, R.N. and Jaftha, J.J. 2002. The Effective Numeracy Course as a site for research on effective use of computer-mediated learning., Multimedia Education Group Colloquium. University of Cape Town. October 2002.
- Frith, V., Prince, R.N. and Jaftha J.J. 2002. Confidence with Mathematics and Computers and Attitudes to using computers for learning Mathematics: A study of students in the Gateway programme. Multimedia Education Group Colloquium. University of Cape Town. October 2002.
- Frith, V., Prince, R.N. and Jaftha J.J. 2002. Evaluating the Educational Effectiveness of Interactive Computer Tutorials for Quantitative Literacy: An account of an iterative quantitative experimental design process, Multimedia Education Group Colloquium. University of Cape Town. October 2002.
- Jaftha J.J., Frith, V. and Prince, R.N. 2002. Feedback in Interactive (electronic) Tutorials in mathematics. Multimedia Education Group Colloquium. University of Cape Town. October 2002.
- Archer, A., Frith, V. and Prince, R.N. 2002. A project-based approach to numeracy practices at university focusing on HIV/AIDS. Presented by Robert Prince at 2nd International Conference on the Teaching of Mathematics (at the undergraduate level). Creta Maris Hotel & Conference Centre, Greece 1- 6 July.
- Jaftha, J., Frith, V. and Prince, R.N. 2002. A learning environment using Excel as teaching assistant and assessment tool for mathematics, Proceedings of the International Conference on Technology and Education (ICTE).

Frith, V., Jaftha, J.J. and Prince, R.N. 2002. The Integration of Interactive Excel Tutorials into a First-year (Pre-calculus) Course. Proceedings of the Second International Conference on the Teaching of Mathematics (ICTM2).

Frith, V. and Prince, R.N. 2001. Gatekeeper vs. Gateway, Communications of the Third Southern Hemisphere Symposium on Undergraduate Mathematics Teaching. July 2001. pp. 46 – 50.

Frith, V. and Prince, R.N. 2000. The role of interactive Excel tutorials in an Effective Numeracy course. Citte 2000 conference, University of Port Elizabeth, June 2000. <http://www.upe.ac.za/citte2000/>

Technical and research reports

Swiggett, W.D., Prince, R.N. & Jappie, N. 2020. Technical report on the Standard Setting Process for Higher Education South Africa's National Benchmark Tests – Degree. ETS and CHED Joint Research Report, ETS and University of Cape Town.

Swiggett, W.D., Prince, R.N. & Jappie, N. 2020. Technical report on the Standard Setting Process for Higher Education South Africa's National Benchmark Tests – Diploma. ETS and CHED Joint Research Report, ETS and University of Cape Town.

Pitoniak, M.J. & Prince, R.N. 2015. Technical report on the Standard Setting Process for Higher Education South Africa's National Benchmark Tests – Degree. ETS and CHED Joint Research Report, ETS and University of Cape Town.

Pitoniak, M.J. & Prince, R.N. 2015. Technical report on the Standard Setting Process for Higher Education South Africa's National Benchmark Tests – Diploma. ETS and CHED Joint Research Report, ETS and University of Cape Town.

Prince, R. 2015. Relationships between the NBT AL, QL and MAT 2015 Higher Education intake test scores. Technical Paper: Centre for Educational Testing for Access and Placement (CETAP), Centre for Higher Educational Development (CHED), University of Cape Town (UCT).

Prince, R. 2015. Relationships between the 2015 NBT and the 2014 NSC test scores. Technical Paper: Centre for Educational Testing for Access and Placement (CETAP), Centre for Higher Educational Development (CHED), University of Cape Town (UCT).

Prince, R and Msemburi, W. 2014. Has there been score (grade) inflation in the South African National Senior Certificate from 2009 to 2013? Working Paper: Centre for Educational Testing for Access and Placement (CETAP), Centre for Higher Educational Development (CHED), University of Cape Town (UCT). <http://www.cetap.uct.ac.za/cetap/research/reports-and-working-papers#sthash.el0by7qX.dpuf>

Prince, R.N. & Pitoniak, M.J. 2012. Technical report on the Degree Standard Setting Process for Higher Education South Africa's National Benchmark Tests – Quantitative Literacy Test. ETS and CHED Joint Research Report, ETS and University of Cape Town.

Prince, R.N. & Pitoniak, M.J. 2012. Technical report on the Diploma Standard Setting Process for Higher Education South Africa's National Benchmark Tests – Quantitative Literacy Test. ETS and CHED Joint Research Report, ETS and University of Cape Town.

Prince, R.N. et al. 2012, Technical report on the 2012 higher education intake cycle for Higher Education South Africa's National Benchmark Tests Project.

Prince, R. 2012. The National Benchmark Tests Project: Health Sciences Consortium Research. Health Sciences Consortium Meeting. Johannesburg. 29 October.

Prince, R. 2012. What does the NBTs say about FHS students? Implications for admissions and curricula. Keynote address at UCT Health Education Research Day. University of Cape Town. 26 October.

Prince, R. 2012. The NSC and NBT as it relates to the Law Faculty. UCT Faculty of Law Undergraduate Admissions Committee, University of Cape Town. Cape Town. 16 October.

Prince, R. 2012. Admission policy: The NSC, NBT, Race and DisAdvantage. UCT SASCO Admissions policy Conference. Cape Town. 11 August.

Prince, R. et al. 2012. Relationships between the NSC and NBT and first year Performance in the MBChB undergraduate programme. UCT Faculty of Health Sciences Undergraduate Admissions Committee, University of Cape Town. Cape Town. 16 July.

Prince, R. Deacon, A. and Yeld, N. 2012. Differences between the DBE and IEB NSC: Using the NBT Project to provide insights regarding the NSC The IEB Maths APS ad hoc group, University of Cape Town. Cape Town. 29 May.

Yeld, N. and Prince, R.N. et al. 2011, Technical report on the 2011 higher education intake cycle for Higher Education South Africa's National Benchmark Tests Project.

Yeld, N. and Prince, R.N. et al. 2010, Technical proposal to further develop, refine, implement, manage and maintain the National Benchmark Tests Project for the period 2010 to 2012 on behalf of Higher Education South Africa.

Yeld, N. and Prince, R.N. et al. 2010, Technical report on the 2010 higher education intake cycle for Higher Education South Africa's National Benchmark Tests Project.

Yeld, N. et al. 2009, Technical report on the 2009 pilot testing for Higher Education South Africa's National Benchmark Tests Project.

Pitoniak, M.J., Prince, R.N. & Yeld, N. 2009. Technical report on the Standard Setting Process for Higher Education South Africa's National Benchmark Tests – Quantitative Literacy Test. ETS and CHED Joint Research Report, ETS and University of Cape Town.

Pitoniak, M.J., Prince, R.N. & Yeld, N. 2008. Technical report on the Standard Setting Process for Higher Education South Africa's National Benchmark Tests – Quantitative Literacy Test. ETS and CHED Joint Research Report, ETS and University of Cape Town.

Yeld, N., Cliff, A.F. et al 2007. Report to HEADS (NMMU) on the NBTP Field-testing. May 2007. Centre for Higher Education Development, University of Cape Town.

Cliff, A.F., Prince, R., Agasi, C. & Yeld, N. 2006. Test design, development and implementation framework for a set of National Benchmark Tests. Technical report prepared for Higher Education South Africa (HESA) by CHED.

Cliff, A.F., Ramaboa, K. & Prince, R. 2006. PTEEP and QLT performance and their associations with academic performance in Humanities. Statistical report prepared for the Faculty of Humanities, University of Cape Town.

Prince, R.N., Frith, V. and Jaftha, J. 2007. Quantitative Literacy of students at the University of Cape Town.

Prince, R.N., Frith, V. and Jaftha, J. 2006. Quantitative Literacy of students at the University of Cape Town.

Prince, R.N., Frith, V. and Jaftha, J. 2005. Quantitative Literacy of students at the University of Cape Town.

Frith, V. and Prince, R.N. 2004. Evaluation of the Student Experience of the Interactive Excel-based Quantitative Literacy Tutorials in First-year Health Sciences in 2003

Frith, V. and Prince, R.N. 2004. Barriers to learning: Aspects of a student's experience of Interactive Excel-based tutorials in a quantitative literacy and pre-calculus course.

Frith, V. and Prince, R.N. 2004. Confidence with mathematics and computers and attitudes to using computers for learning mathematics: A study of students in a foundation programme at UCT, 2003.

Prince, R.N., Frith, V. and Jaftha, J. 2004. Quantitative Literacy of students at the University of Cape Town.

Prince, R.N., Frith, V. and Jaftha, J. 2004. Quantitative Literacy of Faculty of Education students at the Cape Technikon in January 2004.

Prince, R.N., Frith, V. and Jaftha, J. 2004. Quantitative Literacy of the Mathematical Literacy Advanced Certificate in Education (ACE) students at the four Western Cape Higher Education Institutions in 2004.

Prince, R.N., Frith, V. and Jaftha, J. 2004. Quantitative Literacy of the Mathematical Literacy Advanced Certificate in Education (ACE) students at Stellenbosch in 2004.

Prince, R.N., Frith, V. and Jaftha, J. 2004. Quantitative Literacy of the Mathematical Literacy Advanced Certificate in Education (ACE) students at Cape Technikon in 2004.

Prince, R.N., Frith, V. and Jaftha, J. 2004. Quantitative Literacy of the Mathematical Literacy Advanced Certificate in Education (ACE) students at the University of the Western Cape in 2004.

Prince, R.N., Frith, V. and Jaftha, J. 2004. Quantitative Literacy of the Mathematical Literacy Advanced Certificate in Education (ACE) students at the University of Cape Town in 2004.

Prince, R.N., Frith, V. and Jaftha, J. 2004. Quantitative Literacy of the Faculty of Applied Sciences students at the Cape Technikon in 2004.

Prince, R.N., Frith, V. and Jaftha, J. 2004. Quantitative Literacy of the Faculty of Education students at the Cape Technikon in October 2004.

PUBLICATIONS OF A SCHOLARLY NATURE

Mathematical Literacy was introduced as a subject in South African Schools and Further Education and Training Colleges in 2006. Students have a choice between Mathematics and Mathematical Literacy as a subject in their final three years of either the National Senior Certificate or the National Senior Certificate (Vocational). I have co-authored six Mathematical Literacy student books, three for use in grades 10 to 12 of the National Senior Certificate and three for use at levels two to four of the National Senior Certificate (Vocational). I have also co-authored six Mathematical Literacy teacher and lecturer guides to accompany these student books.

Bowie, L., Frith, V., Prince, R.N. & Matjiane, L., 2008. *Fundamental Mathematical Literacy for FET Colleges Level 4 Student Book*. Maskew Miller Longman, South Africa.

Bowie, L., Frith, V., Prince, R.N. & Matjiane, L., 2008. *Fundamental Mathematical Literacy for FET Colleges Level 4 Lecturer Guide*. Maskew Miller Longman, South Africa.

Bowie, L., Bowie, L., Frith, V., Prince, R.N. & Shearar, E., 2007. *Fundamental Mathematical Literacy for FET Colleges Level 3 Student Book*. Maskew Miller Longman, South Africa.

Bowie, L., Bowie, L., Frith, V., Prince, R.N. & Shearar, E., 2007. *Fundamental Mathematical Literacy for FET Colleges Level 3 Lecturer Guide*. Maskew Miller Longman, South Africa.

Frith, V., Bowie, L., Prince, R.N. & Schauerte, A., 2007. *Fundamental Mathematical Literacy for FET Colleges Level 2 Student Book*. Maskew Miller Longman, South Africa.

Frith, V., Bowie, L., Prince, R.N. & Schauerte, A., 2007. *Fundamental Mathematical Literacy for FET Colleges Level 2 Lecturer Guide*. Maskew Miller Longman, South Africa.

Bowie, L., Frith, V., Prince, R.N. 2007. *Focus on Mathematical Literacy Grade 12 Learner Book*. Maskew Miller Longman, South Africa.

Bowie, L., Frith, V., Prince, R.N. 2007. *Focus on Mathematical Literacy Grade 12 Teacher's Guide*. Maskew Miller Longman, South Africa.

Bowie, L., Frith, V., Prince, R.N. 2006. *Focus on Mathematical Literacy Grade 11 Learner Book*. Maskew Miller Longman, South Africa.

Bowie, L., Frith, V., Prince, R.N. 2006. *Focus on Mathematical Literacy Grade 11 Teacher's Guide*. Maskew Miller Longman, South Africa.

Bowie, L., Frith, V., Prince, R.N. & Schauerte, A. 2005. *Focus on Mathematical Literacy Grade 10 Learner Book*. Maskew Miller Longman, South Africa.

Bowie, L., Frith, V., Prince, R.N. & Schauerte, A. 2005. *Focus on Mathematical Literacy Grade 10 Teacher's Guide*. Maskew Miller Longman, South Africa.