

Annual Report: Education Committee of NZ Statistical Association
November 2023 to November 2024
For AGM of 3 December 2024

The AGM may wish to consider the magenta paragraphs on the last page.

The Curriculum received plenty of our attention

In November 2023, the Ministry of Education released the 'refreshed' curriculum for mathematics and statistics. The document had received several years of our attention. The Education Committee saw it as up to date for 21st century Aotearoa and for the rapidly evolving data world.

In December 2023, The Minister of Education set up a Ministerial Advisory Group (MAG) "to review drafts of the refreshed English and maths learning areas in the New Zealand Curriculum". We noted that the 12 people in this MAG included zero people with expertise in statistical education. Our NZSA president wrote to the Minister (29/2/24), saying that MAG did not have "statistics education evidence-based research expertise", and that we had expertise, international contacts, and a history of contributing to curriculum development. The letter concluded with: "The NZSA strongly recommends that at least one statistics education research expert is included in the MAG. We would be happy to recommend experts for your consideration."

We received a ministerial reply (26/6/24) that recognised our inputs, proposed future consultation with us, but did not otherwise answer our recommendation for statistical expertise. The MAG was disbanded, but gave rise to six writing groups. The maths and stats writing group consists of six mainly Ministry people with maths and stats experience.

The maths and stats writing group released a 'Draft Mathematics Curriculum for years 0 to 8', in August. Work on this has occupied a large amount of time for some of our members. We were concerned that the inclusive approach to pedagogy from the 2023 refresh should be maintained, and that the statistical content should be stated soundly at each year of schooling. We sent in a submission on 6 September. It took the form of a statement with recommendations for strengthening the Curriculum's quality and effectiveness, and very detailed feedback on the content of the 'Teaching Sequence', 'Understand', and 'Know' sections.

The 'reviewed' document was released on 31st October 2024 [NZC - Mathematics and statistics \(Years 0-8\)](#).

At time of writing, we await the draft for Years 9 to 13, and will respond to that next year.

Analyses of the year's curriculum processes, by leading educators, are in the Aotearoa Educators Collective site: [Home | AEC](#).

Inputs into assessment

We've needed little input into assessment this year. At Level 1, the new set of four Achievement Standards is in use, and we'll follow how they went. The first of the four Standards is titled 'Explore data using a statistical enquiry process'. We've raised concerns about some wording, and are pleased to see new wording about 'explaining the source of the data'.

For Levels 2 and 3, implementation has been delayed, and work on this has ceased for now. Level 2 is to be fully implemented in 2028, and Level 3 in 2029.

Both Levels 2 and 3 will have two separate subjects: Mathematics, and Statistics. This will open great possibilities for the country to have a statistically active population.

Probability | Tūponotanga - A Guide for Teaching Probability

We were very pleased to receive support for producing this Guide from the Association, and from the

NZ Association of Mathematics Teachers, who were very clear about the need for the Guide. Our work on the Guide was interrupted by issues outside our control, but is now progressing. We have designed the set of chapters, and the format for the contents of each chapter. We are in the process of confirming lead writers for the chapters, and have 80% of these confirmed.

We have progressed writing the two chapters in the first tranche of the book. These are Wāhanga | Chapter 3 The Vocabulary of Uncertainty: Decoding the Language of Probability, and Wāhanga | Chapter 4 Modelling Uncertainty: Exploring Probability Models. We plan to release the three tranches as they are created.

We hope that Tranche 1 (2 chapters) will be published about June 2025, Tranche 2 (7 chapters) about December 2025, and Tranche 3 (6 chapters) about May 2026. We intend to make sure that both teachers and the world statistical education community hear plenty about it.

International contacts

We've maintained international contacts through our members in statistical education groups in the USA and the UK.

From the USA, Christine Franklin reports that the writing of the Statistical Education of Teachers 2 (SET2) document is progressing. Its framework is based on the GAISE 2 framework student outcomes, enhanced for teachers and teacher educators, and addressing data science and AI.

From the UK, Rhys Jones reports that the first UKCOTS 2024 was in Manchester in June, and UKCOTS 2025 will be in Glasgow next June. To mark the first UKCOTS, there is a special edition of the journal [Teaching Statistics](#).

Also from the UK comes the Data Skills Framework for working with large scale survey data, census, and macro-level aggregate data: [A UKDS Data Skills Framework.pdf](#), and from The Royal Society's Advisory Committee on Mathematics Education: [A new approach to mathematics and data education](#).

Also, the RSS published this document in August 2024, on pre-university curriculum development: [RSS publish key recommendations for the teaching of statistics in the UK](#)

Pip Arnold continues as Vice-President of IASE, and organises the very relevant webinar series: [IASE — Webinars: Webinars \(iase-web.org\)](#). The October presenter was Anna Fergusson, on coding for statistics and data science students.

International and local contributions by members

The year's [IASE Roundtable conference](#) was held in Auckland in July 2024. Anna Fergusson led the local organising team, working with Pip Arnold, Stephanie Budgett, Anne Patel, and Matt Parry. Andrew Sporle was a keynote speaker. Anna Fergusson, Malia Puloka, Anne Patel and Rachel Passmore presented papers, and Pip Arnold presented a workshop on CensusAtSchool.

ICME-15 was held in Sydney in July 2024, with members Anna Fergusson, Stephanie Budgett, and Pip Arnold giving presentations.

The ASA Meeting Within a Meeting (MWM), professional development for middle (intermediate) and high school teachers, was held virtually in July in the US. Pip Arnold and Anna Fergusson from NZ were presenters.

Anna Fergusson has been appointed as Assistant Editor - Technology, for the Statistics Education Research Journal (<https://iase-pub.org/ojs/SERJ/about/editorialTeam>).

The Auckland Mathematics Association's online [Saturday Morning workshops continue](#), with teachers from across New Zealand registering. Anna Fergusson presented a workshop on 'Embracing creativity through explorations in probability and modelling.' Pip Arnold presented her CensusAtSchool work in

conjunction with Jenny Robertson and Kim Gotlieb.

The ICOTS-12 conference is in Brisbane in July 2026, and Stephanie Budgett is the IPC Chair.

The statistics teaching journal *Statistics and Data Science Educator*

SDSE (<https://sdse.online/>) provides peer-reviewed resources for teachers. The project leader now is Anna Fergusson. Progressing it is difficult, as our attention has been focused on curriculum development, review, and implementation.

Further interests of the Committee

The next NZAMT conference, *Everybody Counts, Tēnā Tatau Katoa*, is in Ōtepoti Dunedin, 1-3 July 2025. The Association is again supporting an international keynote speaker.

The [CensusAtSchool project](#), under the co-direction of Rachel Cunliffe and Anne Patel, is now preparing for the 2025 online biennial census for Years 3-13 students. Currently over 47,343 students from 760 schools across the nation have participated in the 2023 census, the largest uptake since the project began in 2003. Pip Arnold is the curator and developer of resources, for which she is now leading a new initiative of teacher and Tūturu collaborations for developing new resources and updating existing resources and the website, to align with the new curriculum. The team worked hard to secure ongoing funding.

The Trends in International Mathematics and Science Study, TIMMS 2019, shows NZ students scoring very well in the domain that TIMMS calls 'Data and Probability'. The Association can claim some credit for this; its 30+ years of effort have had an effect. TIMMS 2023 is due out on 4 December this year.

We thank University of Otago | Ōtākou Whakaihu Waka, and especially Jeff Ormndy, for the use of their Zoom system.

Expenditure

Reimbursement for 2 domestic journeys is in progress.

NZSA constitution issues from Charities requirements

We are aware that we may need to modify our procedures and our Strategy Document, and will work with the Executive on this.

Who we are in 2024

Here are the active members for 2024. The first eight people formed the steering group.

- Alasdair Noble (AgResearch) [convenor and link with NZSA Executive]
- Anna Fergusson (University of Auckland)
- Chris Wild (University of Auckland)
- Mark Hooper (Ministry of Education) [meetings scribe]
- Maxine Pfannkuch (University of Auckland)
- Michelle Dalrymple (Cashmere High School)
- Mike Camden [secretary]
- Pip Arnold (Karekare Education)

- Cami Sawyer (Ministry of Education)
- Christine Franklin (American Statistical Association and University of Georgia, USA)
- Dave Phillipps (Lincoln High School)
- Derek Smith (University of Otago)
- Marie Fitch (University of Auckland)

- Marina McFarland (Auckland Girls Grammar)
- Matthew Parry (University of Otago)
- Neil Marshall
- Rhys Jones (Royal Statistical Society Teaching Section and Education Policy Advisory Group)
- Robyn Headifen (University of Auckland)
- Sashi Sharma (University of Waikato)
- Stephanie Budgett (University of Auckland)

We've had four main meetings

The four main meetings ran as shown, and we had numerous other meetings of subsets on curriculum and probability Guide issues.

Participation 2024

Date	Total	Attendees	Apologies
14/02/24	17	11	6
08/05/24	18	11	7
07/08/24	15	8	7
06/11/24	15	10	5

News about members and an ex-member

We congratulate Rachel Passmore on completing her PhD.

We note with sadness the death of David Vere-Jones. Along with his other achievements, he found time and energy for a very active interest in statistical education. He was a founding member of our committee back in 1986, and made time to visit schools and address teacher groups.

David chaired the International Statistical Institute Education Committee 1987-1991, co-founded the International Association for Statistical Education in 1991, and was its Interim president (1991–92) as it took over the role.

David's well-known paper, *The Coming of Age of Statistical Education* (International Statistical Review 1995), records the history of the International Statistical Institute Education Committee from its start in 1948, details the founding of the IASE, and explores what the IASE's challenges would be. His ideas are still very relevant.

These requests to the AGM come from the committee's Strategy document.

We'd like the AGM to endorse our proposed Steering Group for 2025. They are:

- Alasdair Noble (AgResearch) [convenor and link with NZSA Executive]
- Anna Fergusson (University of Auckland)
- Chris Wild (University of Auckland)
- Mark Hooper (Christ's College, Christchurch) [meetings scribe]
- Maxine Pfannkuch (University of Auckland)
- Michelle Dalrymple (Cashmere High School)
- Pip Arnold (Karekare Education) [secretary]
- Stephanie Budgett (University of Auckland)

We'd like the AGM to consider and comment on our priorities and ongoing activities for 2025:

Priorities and Activities for 2025

Priorities:

1. Inputs into Curriculum and related resources
2. Inputs into NCEA and related resources

3. Production of Probability | Tūponotanga - A Guide for Teaching Probability

Ongoing activities:

1. International collaboration with partners in the USA, UK, Australia, and elsewhere.
2. Reviewing implementation of the statistics strand of the NZ Curriculum, with inclusion of assessment.
3. Maintaining the New Zealand online statistics teaching journal: Statistics and Data Science Educator (SDSE) <https://sdse.online/>.
4. Statistics education in the primary sector.
5. Datasets and data sources for teaching, learning, and assessment.