
FOREWORD

Colleagues,

We, Marj and Florence, are indeed honoured to write this welcome letter for this celebration of 50 years of publishing in *delta-K*. The work in this volume points to a story that can be told about mathematics education in the province of Alberta and in Canada. As we read through the articles we were reminded of the concept of change—and that mathematics, mathematics teaching, and mathematics classrooms have shifted. The articles selected by the editors highlight the shifts.

We want to first of all thank the editors, Gladys Sterenberg and Egan Chernoff, for their decision to pull together this publication. The act of selecting the articles to feature in this edition was onerous, and this special edition of *delta-K* will provide a valuable resource to mathematics educators.

As we looked over the articles and read the introductory and closing comments to each decade, we were reminded of our own journey as mathematics educators. We were beginning our school lives in the 1960s and we vividly remember when “new math” came to be. Florence tells the story of the new textbook she received in grade 7 and recalling the practicing required to “master” set notation. Florence also tells the story of her first grade teacher and the mathematics lesson that she remembers: counting sets of popsicle sticks, first into groups of 5 and then combining the groups of 5 into groups of 10.

Marj remembers frequently playing games that used mathematics (dominoes, cribbage, and Norwegian whist) as a family. Basic facts fluency was mastered without using rote memorization. Dominoes developed the skill of grouping numbers and looking for patterns, not unlike the 10-frames the elementary classes are using today.

We were secondary school students in the 1970s. We both remember the introduction of handheld four-function and scientific calculators. Florence remembers the slide rule and logarithm tables she used in high school mathematics, and then in December of her last year of high school receiving a scientific hand held calculator. Marj remembers using a slide rule in high school and using it on the government scholarship exams she wrote at the end of grade 12. One of Marj's most expensive graduation gifts she received was a handheld four-function calculator, one almost the size of a Kleenex box. How it changed the nature of the calculations! We also both started university during the 1970s and learned about what it was like to move to programmable calculators and computer programming. In the mid-1970s, the diploma examinations were discontinued in Alberta.

The 1980s were the beginning of our teaching careers; we were both secondary school mathematics teachers. During this time we remember calculator use in mathematics classes being the focus of conversation in staff rooms and we remember publications around problem solving and the use of calculators appearing. Our professional development conferences had many sessions around the use of calculators. In the 1980s, we saw the introduction of the graphing calculator. Florence remembers reading about the graphing calculator in the *Mathematics Teacher* and then, in 1986, purchasing her first one, a Casio. Marj's first exposure was at an National Council of Teachers of Mathematics (NCTM) regional conference in Edmonton in the mid-1980s. Marj's first graphing calculator was a TI-81 and cost almost the same as the four-function calculator she received as a high school graduation gift. The decade of the 1980s was also a time when computer programs such as VisiCalc (the first spreadsheet program for personal computers) and graphing programs started to be used in schools. The use of calculators and computers in mathematics classes did not become a part of the Alberta mathematics curriculum, though, until the late 1980s. During this decade, in 1984, we also saw the reintroduction of the diploma examinations and saw the introduction of the Provincial Achievement Tests in Alberta.

The 1990s was a time of vast changes in provincial curriculum; the technology was now available that allowed one to explore mathematical concepts through numerical analysis, algebraic analysis, and graphic analysis. The NCTM 1989 Curriculum and Evaluation Standards for School Mathematics impacted provincial curriculum documents, and there was more emphasis on students being able to communicate and explain mathematical ideas. Constructivism, as a theory of learning, was being discussed in professional development sessions, and there was the banding together of provinces and territories for the development of curriculum. A big change in teaching was the movement of the curriculum to one that was no longer "spiraled." What this meant was that the textbooks we used no longer covered the same material from grade to grade. For example, if the multiplication and division

of fractions were in the grade 8 curriculum and textbook, then the grade 9 textbook would not use the grade 8 lessons to review the multiplication and division of fractions in the study of the multiplication and division of rational numbers. The textbook companies started to provide teacher resource manuals that were intended to help teachers transition with the change in the curriculum. Textbooks and curriculum documents also referred to mathematical processes like communication, visualization, reasoning, and problem-solving. It was in the 1990s that our professional practices led us into roles of leadership within our school division and the province. We became acutely aware of the differences in teaching practices and began to wonder how it was that each of us, individually and collectively, could contribute to the profession.

The 2000s were once again a time of changes in provincial curriculum, changes in the available technology, and changes in who was sitting in classrooms in Alberta. The NCTM 2000 *Principles and Standards for School Mathematics* cemented the focus in mathematics curriculum around the idea that *all* learners should have the opportunity to experience a high-quality mathematics program. Of ongoing debate within the province, and Western Canada, was the question of “what does a high quality mathematics program contain?” That is, what should learners learn in a high-quality mathematics program? For Florence, the 2000s were a decade when she became disillusioned with what was written in curriculum documents and realized that what really mattered, in her work, was that a high-quality mathematics teacher was available for *all* learners. It was the way in which teachers interpreted curriculum documents and made decisions about the experiences that they would offer learners that became the focus of her work in teacher education. Similarly, Marj also went from the classroom to working with teachers to help them improve their knowledge of the content and more importantly their pedagogy.

We invite you to reflect on your own practices and experiences as you read through this volume. As we read the articles, we learned about the experiences that researchers and authors were discussing in each of the decades and recalled our own experiences in schools. We were also reminded of the impact of *delta-K* and MCATA in our own teaching lives, right from the time we were studying with Drs. Tom Kieren and Sol Sigurdson in our teacher education programs at the University of Alberta.

To close, we would like to thank all of the contributors: Gladys Sterenberg, Egan Chernoff, Len Bonifacio, Olive Chapman, Tom Kieren, Werner Liedtke, Craig Loewen, Mark Mercer, David Pimm, Klaus Puhlmann, Elaine Simmt, and Daryl Smith; and all of the authors whose articles were selected to be a part of this volume. We are indeed fortunate to have the opportunity to honor the work of the journal and its contributions to our professional lives as mathematics educators.

And thank you for letting us reminisce about our relationship with mathematics education and our journey as colleagues and friends. We met in a mathematics class in our undergraduate program and then reconnected when we were teachers attending MCATA conferences. We were reminded as we read these articles, introductions, and commentaries of the changes that we experienced in mathematics curriculum, assessment, and teaching; and we were also reminded of the many great mathematics educators with whom we have had the chance to work in our careers. Alberta mathematics educators have been fortunate to have the leadership provided by organizations such as MCATA and publications such as *delta-K*.

Sincerely,

—Marj Farris, President
2010–present

—Florence Glanfield, Past President
1996–1998