

USING THE CAMBRIDGE MATHEMATICS FRAMEWORK TO SUPPORT CURRICULUM REFORM IN STATISTICS EDUCATION

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INTRODUCTION

This poster reports on a collaborative curriculum reform project between Cambridge Mathematics and the Australian Curriculum, Assessment, and Reporting Authority (ACARA). In support of the curriculum and probability element of a more comprehensive reform of the Australian mathematics curriculum, ACARA used the Cambridge Mathematics Framework (CMF; Cambridge Mathematics, n.d.), a digital tool to support coherent curriculum design, to inform the decision making of a team of mathematics curriculum experts. The project constituted a case study reporting the use of the CMF and validation of CMF design principles.

BACKGROUND

The CMF is a digital reference curriculum framework for school mathematics (ages 3–19). It comprises a set of dynamic knowledge maps and tools to assist with design and decision making. Based on synthesis of a broad range of education research, the CMF acts as a shared frame of reference across multiple communities of education designers. The F–10 (Foundation to Year 10) Australian curriculum review was structured into steps involving identifying core concepts; curating content connected to these and identifying gaps, redundancies, or imbalances; and organising content into strands within the wider scope and sequence. The ACARA team had in place its own programme of research and identified key issues they wanted to look at further in statistics and probability. Cambridge Mathematics supported the further exploration of these with ACARA using the CMF independently and as a mediating tool in discussion with Cambridge Mathematics.

OUTCOMES

The ACARA team used the research synthesis in the CMF to support and validate many of the curriculum revisions they intended based on their initial research; however, the CMF allowed access to a broader, more international research base, supporting the case for change. There were also areas in which the ACARA team adjusted content and sequencing based on the implications of the research synthesis in the CMF. The collaboration also identified key content areas in the CMF that were implicit and allowed the Cambridge Mathematics team to refine content to make them explicit. Key design principles of the CMF were shown to be valid in the context of this kind of project.

REFERENCES

Cambridge Mathematics. (n.d.). *An update on the Cambridge Mathematics Framework*. Cambridge University Press. <https://www.cambridgemaths.org/Images/cambridge-mathematics-framework.pdf>