



EDUC258

Mathematics in Schools

S3 External 2017

Department of Educational Studies

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General Information

Unit convenor and teaching staff

Co convenor

Susan Busatto

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Convenor

Michael Cavanagh

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Credit points

3

Prerequisites

((12cp at 100 level or above) including EDUC105 or EDUC106) or (admission to BEd(Prim) or BEd(Sec))

Corequisites

Co-badged status

Unit description

This unit is designed for intending primary teachers and intending secondary Mathematics teachers. It focuses on the factors affecting school students' learning of Mathematics. Three major themes are addressed: the meaning of selected basic concepts; how students learn these basic concepts; and how teaching can influence student learning. There is a common lecture strand which examines current research perspectives on learning and teaching Mathematics in schools, and separate tutorial classes for intending primary and secondary teachers. The Session 3 offering is only available to intending primary teachers.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.

3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas
5. Demonstrate understanding of the content covered in the unit.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Contribution to online learnin</u>	15%	No	weekly
<u>Quiz 1</u>	10%	No	Week 2 workshop
<u>Quiz 2</u>	15%	No	Week 4 workshop
<u>Numeracy Interview Report</u>	30%	No	December 29, 2017
<u>examination</u>	30%	No	TBA

Contribution to online learnin

Due: **weekly**

Weighting: **15%**

You are required to post to an online discussion forum where you can read and react to the posts of a group of your fellow students. The purpose of these online tasks is to ensure you maintain regular engagement with the unit content in order to enhance your understanding of the key ideas presented and your capacity to achieve the learning outcomes.

On successful completion you will be able to:

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 5. Demonstrate understanding of the content covered in the unit.

Quiz 1

Due: **Week 2 workshop**

Weighting: **10%**

Quiz 1 covers the content of module 1 and is completed during OCD 2. There will be 10 multiple choice questions and you will have 15 minutes to complete it. CLOSED BOOK.

On successful completion you will be able to:

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 5. Demonstrate understanding of the content covered in the unit.

Quiz 2

Due: **Week 4 workshop**

Weighting: **15%**

Quiz 2 covers the content of module 2 and 3 and is completed during OCD 4. There will be 15 multiple choice questions and you will have 20 minutes to complete it. CLOSED BOOK.

On successful completion you will be able to:

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 5. Demonstrate understanding of the content covered in the unit.

Numeracy Interview Report

Due: **December 29, 2017**

Weighting: **30%**

This assignment is designed to develop your ability to interpret the development of children's mathematical understanding and for you to produce a thoughtful and considered interpretation of one child's grasp of some basic numeracy concepts and skills

On successful completion you will be able to:

- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas

examination

Due: **TBA**

Weighting: **30%**

The exam will cover content from the 5 modules. CLOSED BOOK

On successful completion you will be able to:

- 5. Demonstrate understanding of the content covered in the unit.

Delivery and Resources

The unit will be delivered over 5 On Campus Days. You are expected to listen to on-line lectures, engage in classroom discussions and activities, complete readings and work as described in the Unit Outline and on iLearn.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy http://mq.edu.au/policy/docs/assessment/policy_2016.html

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.html

Disruption to Studies Policy (in effect until Dec 4th, 2017): http://www.mq.edu.au/policy/docs/disruption_studies/policy.html

Special Consideration Policy (in effect from Dec 4th, 2017): <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration>

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au.

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 3. Demonstrate understanding of the concepts, substance and structure of the content

and teaching strategies of mathematics

- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas
- 5. Demonstrate understanding of the content covered in the unit.

Assessment tasks

- Contribution to online learnin
- Quiz 1
- Quiz 2
- Numeracy Interview Report
- examination

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas
- 5. Demonstrate understanding of the content covered in the unit.

Assessment tasks

- Numeracy Interview Report
- examination

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 4. Demonstrate knowledge and understanding of numeracy teaching and learning strategies and their application in teaching areas

Assessment task

- Numeracy Interview Report

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcomes

- 1. Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- 2. Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- 3. Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics
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- Contribution to online learnin
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