

**The 17th Annual Conference of ALM
Adults Learning Mathematics – a Research Forum**

**MATHS AT WORK
- mathematics in a changing world**

**Defining Numeracy – the story
continues**

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Introduction

Collected definitions for ALM9 (2002)

how “numeracy” and “mathematics” were used or defined in ALM conference proceedings

“small” numeracy & “big” numeracy.

hypothesis: the ambiguity of “numeracy” enables questioning and inclusion, rather than acceptance and exclusion

Introduction

Defining numeracy at ALM1 (1994) Alexandra Withnall

The final sentence states:

“Numeracy must remain a fluid term capable of re-conceptualisation according to the contexts in which it is used and by whom”.

Professional Development

CPD for Numeracy Specialists

Numeracy Development Projects

Adult Numeracy Teachers' Courses

Numeracy for Teachers & Teaching Assistants

Website: Adult Numeracy Core Curriculum

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Adult Numeracy Core Curriculum

Welcome to the Adult Numeracy Core Curriculum. This interactive site enables teachers to:

- Search and explore the adult numeracy core curriculum
- Explore a wide range of example activities, ideas, suggestions and links to materials and research
- Create meaningful, individual learning experiences



Please find below overviews and background information:

- [Numeracy progression overview](#)
- [Numeracy overview](#)

What's new in the online Adult Numeracy Core Curriculum?

Levels

Entry 1 Entry 2 Entry 3 Level 1 Level 2

Entry 1 elements in the Adult Numeracy Core Curriculum

- Number > Whole numbers [hide/show](#)
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Defining Numeracy

Maths

Quantitative Literacy

Mathematical Literacy

School Mathematics

Functional Mathematics

Adult Numeracy Core Curriculum (2001)

- 'Mathematics equips pupils with a uniquely powerful set of tools to understand and change the world' (The National Curriculum, (QCA). Changing the world may not be the immediate goal of adult learners, but being numerate - acquainted with the basic principles of mathematics is essential to functioning independently within the world.

Cockcroft (1982: para 39)

- 'We would wish 'numerate' to imply the possession of two attributes. The first of these is an 'at-homeness' with numbers and an ability to make use of mathematical skills which enable an individual to cope with the practical mathematical demands of his everyday life. The second is ability to have some appreciation and understanding of information which is presented in mathematical terms, for instance in graphs, charts or tables or by reference to percentage increase or decrease.

Diana Coben (2002)

- Numeracy is a notoriously slippery concept (Withnall 1995, Evans 1989). There is no shortage of definitions but there is, crucially, a shortage of consensus, with the term meaning different things in different educational and political contexts (Coben 2000a) and in different surveys of need (Coben 2001).

Gail E FitzSimons (2007)

- Following Bernstein, I argue that the construct of numeracy is an example of a *horizontal discourse*. This is due to the strong affinity between the burgeoning corpus of research reports on workplace and everyday activities involving the use and re/construction of mathematical knowledges ... and Bernstein's description of a horizontal discourse as "a set of strategies which are local, segmentally organised, context specific and dependent, for maximising encounters with persons and habitats".

Kees Hoogland (2008)

- From this definition we derived the concept of a 'numeracy incident'. The quantitative aspect of the world around us takes many forms. It shows up in artefacts and devices (meters, gauges, clocks, numbers, symbols), in constructions (measurements, angles, spatial attributes) and in texts (numbers, symbols, diagrams, maps, graphs, formulas).

Thought experiment:

Consider this quotation from Roseanne Benn

Mathematics is a social construct

It did not develop in a cultural or social vacuum

It is not a body of truth existing outside human experience

It is a construct or invention rather than a discovery

It is social in nature

It is value laden not value free

There are different mathematics in different societies reflecting the different needs of those societies.

Benn, R. (1997 & 2002)

Re-read these statements replacing "**mathematics**" with "**numeracy**"

Roseanne Benn (1997)

Numeracy consists of being able to make an appropriate response to a wide range of personal, institutional or societal needs.

...

Here the knowledge of numeracy is seen as important, not just for utilitarian or abstract purposes, but as part of students' attempts to understand their own individual and collective lives and to make their lives meaningful.

Defining Numeracy

Consider two main categories of numeracy definitions:

Small numeracy

bound by levels (low?)

part of mathematics (arithmetic?)

revisiting school mathematics

limited

Big numeracy

any level,

mathematics "plus" (culture, purpose, need?)

experiential

includes context

Defining Numeracy

Hypothesis: the ambiguity in defining "numeracy" enables questioning and inclusion, rather than acceptance and exclusion

This implies:

- there is no ambiguity about defining mathematics?
- definitions of mathematics are closed and exclusive

Defining Numeracy

A selection of quotations drawn mainly from Adults Learning Mathematics international conference proceedings and related sources

Booklet available at end of presentation

References

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