

# Numeracy as a Second or Other Language in the ESOL Classroom

<http://esol.britishcouncil.org/content/teachers/staff-room/teaching-articles/numeracy-second-or-other-language-esol-classroom>

## Introduction

This article outlines the problem of numeracy in the UK and explains why numeracy issues are just as much ESOL teachers' concern as numeracy teachers'. It will show that just as learners need help and encouragement in learning a language, they need to be supported in their efforts to acquire basic numeracy skills.

## Why is numeracy important?

In 1999, Sir Claus Moser in his influential report *A Fresh Start* vividly highlighted the fact that numeracy is a problem in the UK.[1] Among its many startling facts, it revealed that one in three adults cannot calculate the area of a room that is 21 by 14 feet, even with the aid of a calculator, and that one in four cannot calculate the change they should get from £2 if they bought two items costing 68p and 45p.

Lack of numeracy has serious consequences for an adult's employment prospects and career progression. According to Brynner and Parsons, 'both men and women lacking numeracy skills are more likely in their early years to be out of the labour market, or engaged in low-grade work in unskilled manual jobs without training'.[2]

Moreover, as the *Adult Numeracy Core Curriculum* in England notes, lack of numeracy impacts negatively on an adult's ability to function in society in general, for 'In everyday life we are confronted by numbers, from getting on the right bus or putting coins in a meter, to choosing the best deal on a mobile phone or a pension plan'.[3]

## Not our problem?

Because of its demonstrable benefit to both the economic and social life of individuals, numeracy is high on the government agendas. And since people encounter numeracy everywhere in everyday life, numeracy training cannot be left to specialists alone. ESOL teachers must, wherever possible, also try to meet the numeracy needs of learners.

ESOL teachers are already aware of the impact numeracy issues can have on their teaching. This is because they are placed in situations where learners' lack of numeracy, differences in mathematical language, and culturally variable ways of solving even simple calculations affect the delivery of language-focused lessons.

However, the fact that ESOL and numeracy have had separate core curricula with a lack of explicit references between them has enabled, perhaps even encouraged, ESOL teachers to perceive numeracy issues as being 'not our problem'. This artificial separation has been bolstered by the fact that numeracy training has not been made readily available to ESOL teachers.

## Building bridges

We can build bridges between ESOL and numeracy teaching by adopting some of the suggestions put forward by Noyona Chanda[4], namely by:

- finding out about learners' previous educational experiences of mathematics, and their use of numeracy in daily life.
- becoming familiar with number systems and how they are expressed in learners' other languages.
- investigating the environmental and/or cultural influences implicit in learners' languages. For example, a learner from an historically agrarian economy may have no native tradition or precise representation of very large numbers, which will affect his/her understanding of concepts such as place value.
- valuing the 'differentness' of mathematics in other cultures and languages. This includes drawing learners' attention to the cultural, linguistic and historical origins of terms and concepts used in numeracy, e.g. the fact that the decimal system was developed in China, that *algebra* is an Arabic word, and that *pi* is a letter from the Greek alphabet.

In addition, the real-life value of mathematics should be emphasised.

### Practical applications

Some of the above suggestions are exemplified in the following lesson for Entry-level learners.

#### *Shopping: reading supermarket leaflets*

Valuable authentic language could be brought into the classroom by basing an integrated numeracy and literacy lesson on a leaflet from a local supermarket. After eliciting the text type and the names of the products being promoted, learners could be asked how much they usually pay for the items, and where the best deals on them can be found.

Learners could then be asked to identify all the different numbers they can see on the leaflet. Asking them to transcribe the numbers into words (and vice versa) not only develops reading, handwriting and spelling skills, but also highlights potentially confusing phonological and typographical similarities (e.g. *sixty/60* and *sixteen/16*).

This could be followed by comprehension questions, for example:

- Find the offer for shampoo. You can buy *2 bottles for the price of 1*. How much do you pay for two bottles? How much do you pay for four bottles?
- The jam is now *half price*. It cost £1.60 before. How much is it now?
- You can get *25p off* cartons of orange juice. It cost 95p before. How much is it now?
- The tomato ketchup is *down from 90p to 75p*. How much is it now? How much money do you save?
- You can get *50% off* packets of chocolate biscuits. You can buy a packet for 60p. How much was it before?
- How much washing up liquid do you get in a bottle? (*75cl*)
- What does *cl* mean: *centilitre*, *centimetre* or *centigrade*? How many *centilitres* are there in a *litre*? Which can we use *centilitre* for – bread, shampoo or potatoes?

During whole-class feedback, different ways of calculating the answers to the above questions could be shared. For example, addition and subtraction could be performed using a calculator, an abacus, plastic money, fingers, and/or the traditional decimal columns used in UK numeracy classrooms. To teach volume (e.g. for *centilitre*), realia such as a measuring jug could be used.

It would also be beneficial to focus explicitly on the language of numeracy. For example, learners would benefit from knowing that *half price* and *50% off* mean the same thing; that *off* is another word for *subtract*, *deduct* or *take away*; and that the adjective *down* is an alternative way of saying *reduced* or *lowered*. Work could also be done on the grammar of mathematical language,

e.g. adjective + verb collocations that are used to talk about changes in prices (*down from 90p to 75p*).

Finally, as a follow-up activity, learners could be given a shopping list and a budget and asked to find the best bargains for the items they need on a local supermarket website, or even in the supermarket itself.

## Conclusion

Numbers are everywhere and numeracy issues affect even language-focused ESOL lessons. ESOL teachers can no longer to ignore or repress this fact: learners' difficulties with numeracy are very much 'our problem'.

## Further reading

- Department for Education and Employment, *A Fresh Start: Improving Literacy and Numeracy. The Report of the Working Groups Chaired by Sir Claus Moser* (1999). London: DfEE.
- N. Chanda, 'Learning Mathematics in a Second Language' (1989), *Language Issues: the Journal of NATECLA*.

[1] Department for Education and Employment, *A Fresh Start: Improving Literacy and Numeracy. The Report of the Working Groups Chaired by Sir Claus Moser* (1999). London: DfEE.

[2] J. Brynner and P. Parsons, *The Impact of Poor Numeracy on Employment and Career Progression* (2002). London: Institute of Education.

[3] Department for Education and Skills, *Adult Numeracy Core Curriculum* (2001). London: DfES.

[4] N. Chanda, 'Learning Mathematics in a Second Language' (1989), *Language Issues: the Journal of NATECLA*.

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