

# Trade Union Learning and the Numerate Environment

Beth Kelly

UCL Institute of Education, UK  
beth.kelly@ucl.ac.uk

Jeff Evans

University of Middlesex, UK  
j.evans@mdx.ac.uk

In this workshop we discussed the notion of a ‘numerate environment’. This relates to long-standing efforts of mathematics education researchers to characterise the everyday context(s) of adults’ lives, and the way that this ‘situates’ (‘surrounds’ or ‘grounds’) the numerate activities of the typical adult (e.g. Lave, 1988; Evans, Wedege & Yasukawa, 2013).

We consider examples of different types of settings where adults might be expected to exercise their numeracy in contemporary industrial societies. In particular, we discussed a range of environments that could be classified as numerate, including the conversion of a country’s currency system (Slovakia) and the spatial challenges of changing driving on the left-hand side of the road to the right-hand side (Sweden). We then focused on the characteristics of a different sort of collective environment, that of trade unions (TU), in UK industry where fellow TU members are encouraged and motivated to improve their maths skills up to level 2 (equivalent to GCSE in the UK). (Kelly, 2018).

Participants were able to explore the notion of the numerate environment and use it to analyse other examples, identifying the demands, opportunities, and supports of these particular contexts. They were encouraged to draw attention to similarities and differences with other successful learning contexts for adults, and to propose the design of other effective numerate environments.

## Developing the idea of a ‘numerate environment’

Participants were introduced to the notion of the numerate environment by considering research by Evans, Yasukawa, Mallows and Crease (2017) who drew on a discussion of the ‘literate environment’ (EU High Level Group, 2012) as a web of ‘literate practices’ which forms the context for an adult’s activities. This helps one to characterise the ‘numerate environment’ faced by a typical adult, in the sense of the *demands*, *opportunities*, and *supports* for numeracy provided by their situation. Initially, adults are considered as isolated individuals, surrounded by a relatively stable environment, which is also reasonably uniform across a population of individuals. However, current work is now investigating the collective numerate environment provided by a situation where an entire society undergoes a significant change, such as the conversion from a national currency to the euro (Kubascikova, Evans and Khan, 2019).

## Considering applications of the idea

We then discussed a different sort of collective environment, that of trade unions, in a particular industry (or group of similar industries), in the UK (Kelly, 2018). We aimed

to sketch the numerate environment that presents itself to this group of trade unionists in the workplace. In particular, we considered the pedagogic context, that of the adult maths learning environment provided by trade union (TU) sponsored courses in England at the current time, where fellow members are encouraged and motivated to improve their maths skills up to level 2 (equivalent to GCSE in the UK).

We explored trade unions' interest in education in the UK, pointing out that it dates back to their development in the late nineteenth century. However, the current opportunity for TU members to learn mathematics arose in the late 1990s, when the new Labour Government sought to address the national basic skills shortage in mathematics and English by investing in a range of adult education settings, including workplace learning through TUs. Later research (Hume et al., 2018, p. 77) into basic skills education in the workplace found that learning resourced through the Union Learning Fund (ULF), supported through learning centres and Union Learning Representatives (ULRs), was one of the 'few effective existing models of work-based support for mathematics and English', highlighting the role of peer support.

We also explored the pedagogic characteristics of the TU numerate environment. Kelly's (2018) research highlights several key factors in encouraging TU members to re-engage with learning, including the *support* of ULRs, *trust* in the safety provided by the TU setting, and the *active support* of other members within the learning group. Learners identified the significance of experiencing a different learning approach to that previously experienced (often in more formal contexts such as school or college). Learners perceived the TU numerate context to be more supportive, set up in smaller classes where learners helped each other and where they could talk openly about mathematics and their problems, with no fear of humiliation. The numerate context was described as relaxed, taking place in meeting rooms in the workplace, hence learning mathematics in non-traditional contexts using non-formal or informal ways of learning, that in this case reflected workplace meetings rather than teacher-led classrooms.

They also spoke about the mathematics being more relevant, in the sense that topics (where possible) related to practical applications (such as building a shed), financial concerns (e.g. interest rates), or linked to trade union issues (such as Health and Safety).

Rather than always considering the decontextualised numeracy competence of individuals, the workshop enabled members to consider numerate environments as larger systems of affordances - opportunities, supports, and demands.

## References

- EU High Level Group (2012). *EU High Level Group of Experts on Literacy (2012). Final Report: September 2012*. Online: [http://ec.europa.eu/education/policy/school/doc/literacy-report\\_en.pdf](http://ec.europa.eu/education/policy/school/doc/literacy-report_en.pdf)
- Evans, J., Wedege, T. & Yasukawa, K. (2013). Critical Perspectives on Adults' Mathematics Education; in M. A. Clements, A. Bishop, C. Keitel, J. Kilpatrick and F. Leung (Eds.), *Third International Handbook of Mathematics Education*. New York: Springer.
- Evans, J., Yasukawa, K., Mallows, D., and Creese, B. (2017). Numeracy skills and the numerate environment: Affordances and demands. *Adults Learning Mathematics: An International Journal*, 12(1), 17-26. Online: [http://www.alm-online.net/wp-content/uploads/2017/10/almij\\_121\\_october2017.pdf](http://www.alm-online.net/wp-content/uploads/2017/10/almij_121_october2017.pdf)

- Hume, S., O'Reilly, F., Groot, B., Chande, R., Sanders, M., Hollingsworth, A., . . . Soon, X. (2018, February 1). *Improving engagement and attainment in maths and English courses: Insights from behavioural research*. Online:  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/738028/Improving\\_engagement\\_and\\_attainment\\_in\\_maths\\_and\\_English-courses.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/738028/Improving_engagement_and_attainment_in_maths_and_English-courses.pdf)
- Kelly, B. (2018). Motivating adults to learn mathematics in the workplace: a trade union approach. *International Journal of Lifelong Education*, DOI: 10.1080/02601370.2018.1555190.
- Kubascikova, J., Evans, J. & Khan, H. (2019). Development of intuition in a new currency, the Euro: The Slovak experience. *Literacy and Numeracy Studies*, 26, (1). DOI 10.5130/lns.v26i1.6301
- Lave, J. (1988) *Cognition in Practice: Mind, mathematics and culture in everyday life*, Cambridge: Cambridge University Press.