

PROFESSIONAL ASSOCIATION ACTIVITY: WHAT CONTRIBUTION CAN IT MAKE TO MATHEMATICS TEACHERS' PROFESSIONAL DEVELOPMENT AND STUDENT LEARNING, AND ARE ANY ASPECTS OF THAT DISTINCTIVE? SUMMARY

- This small systematic study draws largely on data from participants recruited via the 2016 ATM, MA, NAMA and NANAMIC conferences, through questionnaires (n=185) and interviews (n=16).
- All interviewees were outspoken about the **positive impact of professional association activity on their professional identity**, including the affirmation of their role as teachers of mathematics, their self-efficacy, and the renewal of their core beliefs about education in general and mathematics education in particular. This was sometimes expressed in extravagant terms ('life-changing', 'my ongoing inspiration', 'unquantifiable') and on several occasions was expressly linked with retention in the classroom.
- **Direct benefits to professional expertise** were claimed, including the building of capacity for long-term development, creative and imaginative ways of enhancing learning, specific knowledge and skills that could be taken straight into the classroom, and understanding of other phases and contexts for mathematics education.
- Interviewees were eager to stress the **direct impact on their students** of exposure to new classroom resources and ideas, as well as the long-term impact of having a confident, refreshed, enthusiastic and more mathematically-knowledgeable teacher.
- Teachers identify **threats** to their, or others', ability to participate in professional association development activity arising from a lack of funding for, and management valuing of, opportunities such as face-to-face conferences. They describe school and college leaders as often reluctant to invest in long-term development because a teacher might not then stay in the institution.
- Teachers identify **twilight or weekend meetings** of professional associations as offering some of the same benefits as residential conferences. These are complemented by professional association periodicals and newsletters that provide ideas and awareness of wider and national issues. Some teachers particularly appreciate opportunities to contribute to national policy debates.
- Participants pointed to **some areas of teacher development better provided elsewhere**, such as core subject knowledge or skills enhancement. These particularly benefit from the longitudinal exposure interspersed by classroom experience that professional association development does not currently provide. Teachers of all phases also value development alongside their own school/college colleagues that is readily applicable to their shared context.
- Questionnaire responses (n=185) are broadly consistent with interview data, although in less depth. They show that participants greatly value the **very high quality, personalised, deep and wide provision** of the mathematics professional association conferences, much of which is not available elsewhere. Many recognise distance learning opportunities as appropriate for particular kinds of learning, but suggest they are no substitute for the intensive and affirming deep and wide learning possible in face to face development. A significant majority also greatly value opportunities to **engage with new ideas and mathematics**, and are professionally refreshed by them, irrespective of their immediate application to the classroom.
- For all teachers, but those in Further or Community Education in particular, professional association activity can provide a **subject-specific professional community** often lacking in their workplace, and this can be central to their identity and continued commitment in their professional role.
- Teacher development opportunities overlap with those provided elsewhere, although the quality assurance is said to be unusually high. However, professional association activity is claimed to offer a **number of distinctive benefits hard to find elsewhere**. Apart from professional affirmation and contribution to teachers' professional identity, there is opportunity to shape development to a profile of individual needs. There are rare, and highly valued, opportunities to do mathematics, whether at a classroom or adult level, and so to re-ignite enthusiasm for the subject. Teachers can work with a wide variety of colleagues to develop teaching and learning materials in a variety of formats, to debate and influence policy, to present their work and local enquiry, and to support the development of others. These experiences not only serve to renew teachers' enthusiasm and commitment, but they add to both individual and systemic capacity.

