

## Editorial

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The word "numeracy" sounds unattractive when you hear it for the first time, less appealing than "literacy." And it seems to stand for a theme, that's too special for adult education. Especially with regard to literacy numeracy have so far claimed little attention for themselves, at least in Germany. In many other countries, however, numeracy is a central part of the basic education or literacy strategies for adults, in particular in England, Australia and France. In spite of everything, there, as here, is a substantial research and supply gap. Only gradually will this and approached it. For this very reason, the present second issue of the ZfW will make a contribution to the discussion on numeracy. What is numeracy and how does it relate to mathematics?

In fact, numeracy is now regarded as an increasingly complex competence caught. Firstly, this does not only refer to the entry levels of mathematical but to the entire world of mathematically informed actions. Secondly, estimates, plausibility checks, rough calculations and the use of technological tools part of numeracy. Unlike in the school mathematics is not primarily about precise calculations, the use mathematical formulas or the written resolution of equations. Thirdly, numeracy is not only necessary in order in given societies to be able to act functionally (e.g. in order to control salary payments) but also in order to exert influence on the distribution conditions in society itself (e.g. by recording and publishing the number of precarious employment relationships).

The underlying mathematical operations are is not usually referred to as such, which means that numeracy is, so to speak becomes invisible (Yasukawa, Rogers, Jackson, Street 2018). In the definitions of Literacy or basic education of UNESCO or the Decade for Literacy and basic education, numeracy usually emerges - mostly in the Triassic of reading, writing and arithmetic - but is not further differentiated. In the Sustainable Development Goals of the United Nations, which are not least based on the education, adult numeracy is at least as important as the literacy of adults as a goal of sustainable development. Numeracy is factually, however, in the scientific publications, in the course offerings the educational institutions and in the funding structures of the donors vis-à-vis literacy is clearly underrepresented. The central argument seems justified: A corresponding course offer would probably not be accepted by the potential beneficiaries.

Large-scale assessments, on the other hand, have for decades been a major source of always includes numeracy. Since the mid-1990s, data have been available on which show that the proportion of persons with restricted numerical competence is higher in many countries than the proportion of people with low skills in literacy: OECD average of first PIAAC round reaches 19% of the population in terms of numeracy, the competence level 1 or below, for literacy it is 15.5%. Furthermore, England and France have their own Level One studies at repetition of the study may show that literacy stagnates or rises, but numeracy falls. Both countries have these results publicly discussed; in France,

numeracy has been included in programme funding recorded. It would remain to be clarified how these offers are exactly created and what adults they reach and why. It is quite possible that here especially Find offers of integration and second chance education, which are available in Germany In my opinion, they are wrongly understood rather rarely as "basic education". Large-scale assessments and a look at the neighbouring countries show that the once the underestimated domain of basic education.

Also, the contributions collected here can show in a relatively differentiated way which role of numerality in adulthood. This edition of the ZfW is published is introduced by an overview article by Anke Grotlüschen, Klaus Buddeberg and Gabriele Kaiser, which presents the state of research and a multitude of theoretical discourses. It turns out: Since Adam Ries (1522), numerical competences have been embedded in a discourse of emancipation and popular enlightenment, which is commonly referred to as the "discourse of the emancipation". Rather the Bible translated by Luther and published by Gutenberg in book printing is awarded. Findings from current surveys show a decrease in both the competences as well as the practices. This can be partly achieved through technologisation but in the face of datafication, artificial intelligence and and algorithms are a cause for concern. The authors of the overview article advocate that the domains of numeracy should resemble the domains of to grant space like the domains of literacy: as financial numeracy, health numeracy, political numeracy and digital numeracy.

The overview is followed by the contribution by Keiko Yasukawa and Jeff Evans from the discourse of Numeracy as Social Practice. They broaden the view of current developments by examining socio-political and technological change as framing a numbered environment. Yaskukawa and Evans note the erosion of the welfare state, the ubiquitous collection of data at loss of control over their own data and the globalization of the Division of labour. The analytical framework is provided by cultural-historical theory. The focus is on the social context, not on individual competencies. It shows how the numerical environment can be changed by online applications on unemployment benefit or social assistance, through the use of fitness tracking systems and the introduction of Lean Management in the company.

At first glance, mathematics or numeracy does not seem to play a role here. Once again, more in-depth analysis is needed to uncover numerical practices and to recognize them - and to consider them in class. Corresponding the "beliefs" of teachers have long been a subject of educational science. Sonja Beeli-Zimmermann transfers this research strand into Swiss adult education, based on the Swiss "Network everyday mathematics". The convictions on the question of everyday mathematical teaching are differentiated into more transmissive, discovering or constructivist Approaches. The author argues for a broader use of persuasion research in adult education. In fact, the cooperation of mathematics didactics and adult education is proving to be as fertile, as can be seen in the Hamburg Numeracy Project shows. From this, two contributions have emerged, which deal with vulnerable subgroups of the population.

The contribution by Antje Pabst, Wiebke Curdt, Melanie Benz-Gydat, Silke Schreiber-Barsch and Christine Zeuner is concerned on the one hand with the third age and the on the other hand with disability. In both cases, qualitative-empirical surveys were conducted, which expressions numeracy assumes in the everyday life of these groups. Theoretical the authors rely on Numeracy as Social Practice. They plead for a subject-oriented basic education based on these numerical practices. With a view to research, they call for a resource-oriented survey of numerical practices. The contribution by

Alina Redmer and Anke Grotlüschen is again based on a secondary analysis of the PIAAC study and the supplementary study Competencies in Later Life (CiLL). The function of this and the following secondary analyses is to accompany the qualitative studies of the project and from them in turn to obtain condensed information on numerical practices. Regarding of numeral practices in the life course, a constant decrease in numeral Show competences and practices. Redmer goes from Jean Laves ethnographic analyses of family resource management. In the data set of older adults gender role distributions can be shown: The household money is managed more often than average by women, while men are managed more often than men often process bank statements and invoices.

The theoretical, qualitative and quantitative contributions collected here can neither cover nor sufficiently interpret the field. It is a first attempt to address an underestimated domain of basic education in German-language adult education as well. to grant independent space and to put up for discussion a less functional, more emancipative understanding of numeracy. Faithful the foreword to Adam Riese's second arithmetic book: "Thus the common man, [so that the common woman] would not be taken advantage of when buying bread."