BRING BACK BRAINS WITH WOKE MATH

Allan Tarp

MATHeCADEMY.net

Woke-math builds on existentialism holding that 'existence precedes essence'. So in education, inside essence should always be 'de-modeled' as outside existence: 6x7 inside is 6 7s outside.

Asked "How old next time?", a 3-year-old shows four fingers and says "four". But objects when held as 2 by 2: "That is not 4, that is 2 2s." The child thus sees what exist, bundles of 2s in space, and 2 of them in time when counted. And uses a full number-language sentence with a subject, a verb and a predicate, thus de-modeling functions.

Respecting the child's own flexible 2D bundle-numbers with units, Woke-math rejects the essence of traditional 1D line-numbers without units, leading to 'mathematism' true inside but seldom outside by claiming that 'always 2+1 is 3' despite, e.g., '2 pairs + 1 is 5'.

Woke-math may bring back brains from special education when describing fingers and snap-cubes in time and space.

In space, five fingers existing outside in different forms, may inside be described with bundles as units: 5 1s, or 1 5s, or 1Bundle3 2s (overload), 2B1 2s (normal), or 3B-1 2s (underload), etc. In time, a counting sequence should include the bundle-unit (e.g., 3s): 0Bundle1, 0B2, 0B3 or1B0 or 2B-3, …, 3B0, 3B1, where 3 Bundles is renamed as 1BundleBundle, so ten = 1BB 0B 1 3s.

Re-counting in time and space, the basic operations occur in reverse order.

Recounting 8 1s in 2s, pushing away 2s may be iconized by a broom called division allowing a calculator to predict the result: $8 = 8/2$ 2s. Stacking the 4 2s may be iconized by a lift called multiplication, 4x2. This recount proportionality formula, $T = (T/B) \times B$ says that T contains T/B Bs. It serves to change units all over math and science.

From 9 pulling away 4 2s may be iconized by a rope called subtraction. Placed on-top of the stack, the unbundled may be described as a negative number, a decimal or a fraction when counted in the bundle also: $9 = 5B-1 = 4B1 = 4\ 1/2\ B$ 2s.

Recounting between digit-units and tens leads to early algebra in BXB-tables, and to equations solved by recounting.

Recounting between physical units leads to per-numbers as 3$/5kg.

Once counted and recounted, total may add on-top after recounting has made the units like, or next-to as areas thus leading to integration, and to differentiation when reversed.

REFERENCES

Tarp, A. (2018). Mastering Many by counting, re-counting and double-counting before adding on-top and next-to. *Journal of Mathematics Education, 11*(1), 103-117.

Tarp, A. (2020). De-modeling numbers, operations and equations: From inside-inside to outside-inside understanding. *Ho Chi Minh City University of Education Journal of Science 17*(3), 453-466.

Tarp, A. (2021). Teaching Mathematics as Communication, Trigonometry Comes Before Geometry, and Probably Makes Every Other Boy an Excited Engineer. *Complexity, Informatics and Cybernetics: IMCIC 2021*. Retrieved at https://www.iiisci.org/journal/PDV/sci/pdfs/ZA653AQ21.pdf.

Tarp, A. (2022). *MateMatik-skandalen, MateMatisme kvæler barnets eget talsprog*, https://www.saxo.com/dk/matematik-skandalen_ebog_9788771962970.