

## Accounting for embodiment via gestural number sense

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Traditional approaches to number sense (e.g., Clements et al., 2019) insufficiently accommodate embodiment, including gestures, which can support learning when conceptually congruent (Segal et al., 2014). This study examined weekly video recordings of 66 4-6 year old students regularly interacting with the multi-touch number sense app Fingu for 3-5 weeks. Iterative qualitative analyses included microgenetic learning analysis, analytic memoing, and eclectic coding. Four main types of gestural number sense emerged from this context: gestural subitising, gestural estimating, gestural composing, and gestural counting, plus subtypes and combinations. These can be considered conceptually congruent, embodied versions of number sense, but can also support reconceptualizing number sense to account for embodiment.

### Acknowledgements

The author gratefully acknowledges contributors to the connected projects led by the author that generated this data. There are too many people to list here, but their varied and valued contributions are appropriately credited across published and in-progress dissemination.

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