



Turn Left, Turn Right: An Embodied Perspective on Children's Difficulties with Left/Right Spatial Orientations

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The expectation that Year 1 students can give and follow directions using language such as 'forwards', 'backwards', along with describing movement or directions involving turns left/right is present in the current Australian Curriculum: Mathematics (Australian Curriculum, Assessment and Reporting Authority [ACARA], n.d.). The presence of this learning expectation for 6/7-year-olds implies that the meaning of turning left and right is not innately developed and needs to be taught. Directional discrimination requires children to understand the meaning of *relative* directional words in reference to their own viewpoint (egocentric) as well as from another's viewpoint (allocentric). However, we acknowledge that research involving dynamic, not static tasks, to inform the teaching of left/right discrimination is scarce. Based on this knowledge, this investigation aimed to explore the open-ended question: *How do Year 1 children respond to, and give, verbal instructions to turn-left and turn-right?*

For this exploration of left/right awareness and turn one-to-one task-based interviews were conducted, this paper presents data related to 36 Year 1 children. The children completed two tasks related to left/right turning, 1) **you be the robot**, where children responded to spoken instructions to move their own body (egocentric), 2) **direct the robot**, where children were required to give verbal instructions to a toy robot (animated by the interviewer) to reach a target square on a grid (allocentric). Tasks were analysed to record whether each child was aware of their left/right as well as if they could correctly (yes/no) turn right—physically to follow directions in task one and using verbal left/right turn language to give directions in task two.

Results indicated that most (n=27 left, 28 right) were aware of their left/right, but only 8 children could also turn left/right for the egocentric task. Only 6 children obtained a complete correct (R and L) score for the allocentric task. The children found following left-right directions easier than giving left-right directions. However, there were a few children who, surprisingly, performed better in Task 2 (allocentric) than Task 1 (egocentric). Further investigation is needed as: the mastery of the viewer-centric terms of left, right and turn is problematic for both spatial/cognitive and cultural/linguistic reasons, and the tendency of children to preference embodied representations and 'landmark' cues may offer a starting point for instructional practices.

References

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For more information, please refer to the following paper presented at the 46th Annual Conference of MERGA in July 2024.
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