

# The Role of Compassion and Empathy in Critical Mathematical Thinking

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In this paper we consider and raise questions about the role of compassion and empathy when students engage with *Critical Mathematical Thinking* (CMT). CMT is emerging as a central goal in mathematics education as a consequence of the social and ecological challenges and crises (e.g., global warming, food insecurity) currently experienced by societies globally. CMT (see Gutstein, 1997) is the capacity to critically analyse the potential consequences and impacts of mathematics-based decision-making when responding to such challenges and crises. In particular, we ask students and teachers to consider consequences that have implications for diversity, equity and social justice in their roles as critical, responsible citizenship (Geiger et al., 2023). We have defined CMT through dimensions related to mathematical, critical, evaluation, and reasoning capabilities all of which depend upon dispositions.

As an example of this work, we asked teachers and students to consider the contribution of Airbnb providers to the national housing crisis. Most students engaged with the problem in a holistic manner by considering the impacts of homelessness or accommodation stress – attempting to identify the advantages, both financial and social, of providing more people with accommodation. One student, however, was only open to examining the situation from a transactional perspective – what were the advantages to the Airbnb owners if they were to lose an element of their income? They were adamant that there should not be any actions by government that impact on Airbnb owners' profits. Even when the teacher pointed out that housing was a need, in the same way as drinking water, the student did not change their view.

We now ask ourselves questions about how tasks could be designed in ways that promote empathy and compassion – aspects of sensitive and responsible citizenship that appeared to be missing in this instance. Are there resources that could be included that might evoke concern for those experiencing hardship or disadvantage. For example, what difference might there be if video excerpts were included that featured people experiencing housing precarity? These are questions we will explore in the next phase of this research.

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## References

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For more information, please refer to the following paper presented at the 47<sup>th</sup> Annual Conference of MERGA in July 2025.  
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