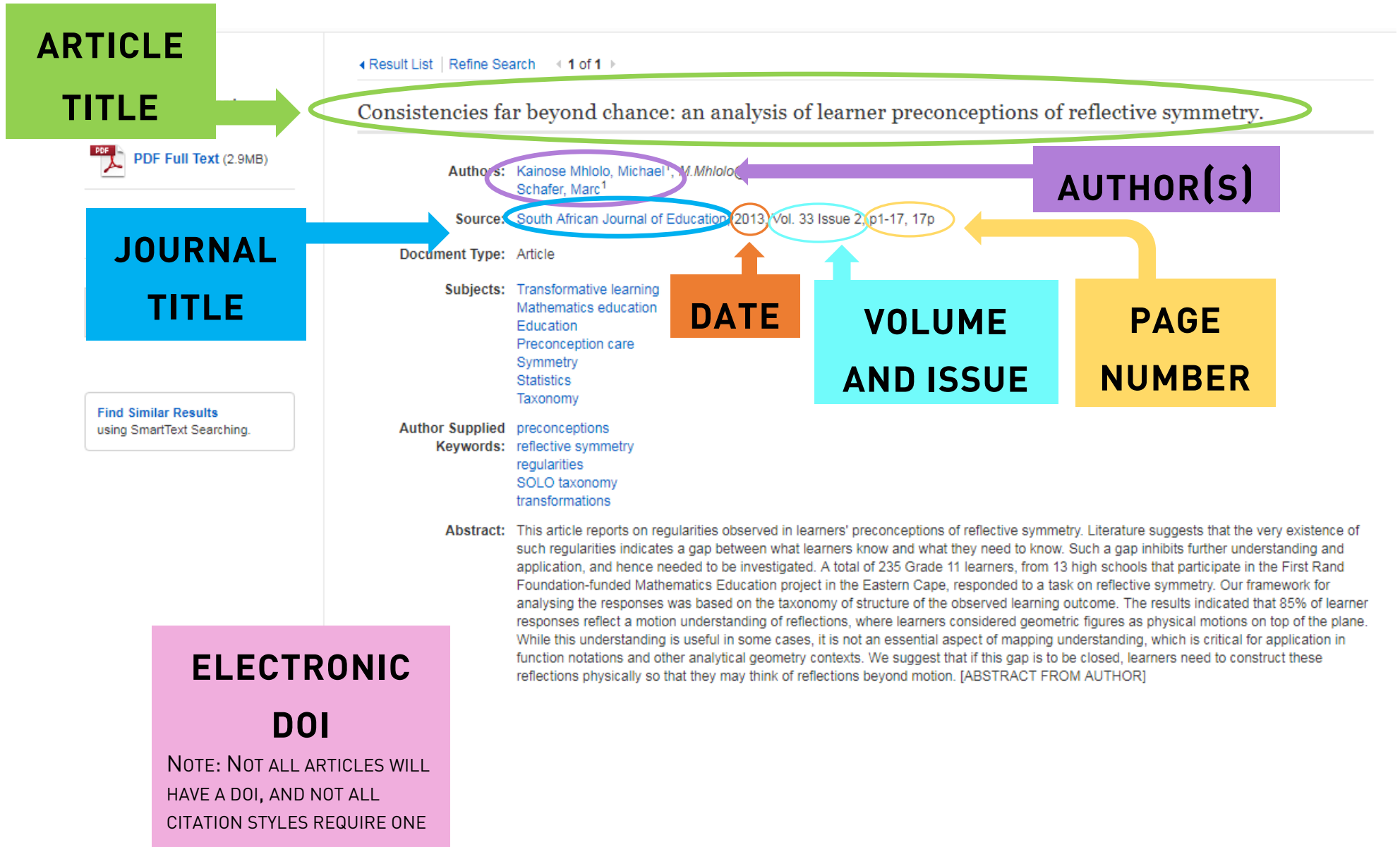


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Abstract | Full Text

This article reports on regularities observed in learners' preconceptions of reflective symmetry. Literature suggests the very existence of such regularities indicates a gap between what learners know and what they need to know. Such a gap inhibits further understanding and application, and hence needed to be investigated. A total of 235 Grade 11 learners from 13 high schools that participate in the First Rand Foundation-funded Mathematics Education project in the Eastern Cape responded to a task on reflective symmetry. Our framework for analysing the responses was based on the taxonomic structure of the observed learning outcome. The results indicated that 85% of learner responses reflect a motion-based understanding of reflections, where learners considered geometric figures as physical motions on top of the plane. While this understanding is useful in some cases, it is not an essential aspect of mapping understanding, which is critical for application in function notations and other analytical geometry contexts. We suggest that if this gap is to be closed, learners need to construct these reflections physically so that they may think of reflections beyond motion.

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