“How can we describe the relation between the factored form and the expanded form of these trinomials? – We don’t even know if our paper-and-pencil factorizations are right”: the case for computer algebra systems (CAS) with weaker algebra students.


Summary: A small comparative study was carried out with two classes of 10th grade students in need of remedial help in algebra – one class being provided with CAS technology and the other class not. Two sets of parallel tasks were designed with the main difference between the two being the use of the CAS tool. Both classes were taught by the same teacher over the course of one month. Results indicate that the CAS class improved much more than the non-CAS class with respect to both technique and theory. The CAS technology played three roles that were instrumental in increasing students’ motivation and confidence: generator of exact answers, verifier of students’ written work, and instigator of classroom discussion. These findings suggest that the algebra learning of weaker students can benefit greatly from the integration of CAS technology.

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