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**The ‘algebra as object’ analogy: a view from school.**

Smith, C. (ed.), Proceedings of the British Society for Research into Learning Mathematics (BSRLM). Vol.31, No. 3. Proceedings of the day conference, Oxford, UK, November 2011. London: British Society for Research into Learning Mathematics (BSRLM). 19-22 (2011).

Summary: Treating algebraic symbols as objects (e.g. ‘ $a$ ’ means ‘apple’) is a means of introducing elementary simplification of algebra, but causes problems further on. This current school-based research included an examination of texts still in use in the mathematics department, and interviews with mathematics teachers, year 7 pupils and then year 10 pupils asking them how they would explain, “ $3a + 2a = 5a$ ” to year 7 pupils. Results included the notion that the ‘algebra as object’ analogy can be found in textbooks in current usage, including those recently published. Teachers knew that they were not ‘supposed’ to use the analogy but not always clear why, nevertheless stating methods of teaching consistent with an ‘algebra as object’ approach. Year 7 pupils did not explicitly refer to ‘algebra as object’, although some of their responses could be so interpreted. In the main, year 10 pupils used ‘algebra as object’ to explain simplification of algebra, with some complicated attempts to get round the limitations. Further research would look to establish whether the appearance of ‘algebra as object’ in pupils’ thinking between year 7 and 10 is consistent and, if so, where it arises. Implications also are for on-going teacher training with alternatives to introducing such simplification.

*Classification:* H23 C33

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