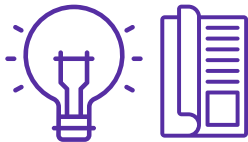


Programming

Matthew Hertz
Maria Jump



BEST KNOWN FOR

**Trace- Based
Programming
models.**



In Brief

Building on important studies like Du Boulay's 'Some Difficulties in Learning to Program', Hertz and Jump recognised struggles students were having with developing accurate mental models to describe complex computing concepts (variables, subroutine calls, dynamic memory usage etc). They looked to demonstrate that by accurately modelling what is happening in memory using a new approach to code tracing, they can improve student understanding of program function and therefore student outcomes.



Important Literature Links

[Hertz, M. and Jump, M. \(2013\). Trace-based teaching in early programming courses. Proceeding of the 44th ACM technical symposium on Computer science education - SIGCSE '13. doihttps://doi.org/10.1145/2445196.2445366.](https://doi.org/10.1145/2445196.2445366)

[Du Boulay, B. \(1986\). Some Difficulties of Learning to Program. Journal of Educational Computing Research, 2\(1\), pp.57-73. doihttps://doi.org/10.2190/3lfx-9mf-67t8-uvk9.](https://doi.org/10.2190/3lfx-9mf-67t8-uvk9)