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Learning to design and to understand recursive procedures. (Apprentissage de l'écriture et de l'interprétation des procédures récursives.)

Rech. Didact. Math. 10, No. 2.3, 287-326 (1990).

This paper examines the difficulties encountered by 14–15 year old pupils in learning to design and to understand program plans with recursive call during experimental teaching situations. The analysis of recursion and iteration in terms of conceptual field leads to distinguish three forms: tail recursion, full recursion and central recursion which is an object created for teaching. There are two important aspects, in the analysis of recursive procedure: self-reference (relational aspect) and nesting (procedural aspect). The teaching sessions are designed with the aim to help pupils to construct a relational model of recursion. The teaching process can be seen as a “detour” from pupils’ already existing model of iteration which is procedural. (orig.)

Classification: C33