

learn to reason in mathematics through the medium of a second language (in this case English). For both English monolingual and English bilingual children a knowledge of logical connectives in English appears to be a necessary condition for mathematical understanding. The ability to reason deductively, to link propositions in logical argument, is at the core of mathematical thinking. Dawe's research also indicates that elaborated speech codes have an important role to play in the learning of mathematics.

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HUFF, Roland. Teaching revision : A model of the drafting process, College English, vol 45, no 8, December 1983, pp 800-816.

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To college and university lecturers who have despaired of ever getting their students to write a coherent essay with some semblance of an individual style of thought and expression, I say 'Take heart, read Roland Huff's article.'

Huff suggests that the single most important way to help immature writers to develop their writing is to persuade them to stop trying to make a final draft of their first draft. So long as their primary concern is 'correctness' of spelling, grammar, word-choice and the like, students are unlikely to develop a personal style.

Instead of setting a single deadline, encourage your students to work through three stages of drafting:

First, a zero drafting to discover the topic in an open-ended way and reach some kind of personal commitment to it. Since a zero draft is not intended to be error-avoidant, the student need make none of the emotional investment in finality which tends to short-circuit one's willingness and ability to make substantial revisions.

Second, a problem-solving drafting to identify and resolve major conceptual, organisational and stylistic problems. Who is the audience? What is the writer's relationship to the audience? What is the writer's stance on the topic? Where is conceptual clarification needed? What kinds of examples could lend force to the argument or bring the topic to life? These are some of the many questions which need to be addressed at this stage of drafting. It may take several workings to arrive at a solution for all of them.

The final drafting of a piece is an attempt to arrive at the best possible rhetorical solution, rather than merely an adequate one.

Perhaps I should not have encouraged lecturers to take heart. What we and our students need to follow Huff's suggestions is not heart but time; time to ponder, time to give attention to what we are doing, time to discover where our intellectual commitments lie and time to pursue them seriously.

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