LOAD REDUCTION INSTRUCTION (LRI): BALANCING EXPLICIT INSTRUCTION AND INDEPENDENT LEARNING

By Scientia Professor Andrew J. Martin

Explicit instruction and independent learning are not mutually exclusive. The success of one is tied to the success of the other. Yet they are often pitted against each other, with practitioners feeling they must choose one or the other. But it is a false dichotomy. Researchers have been investigating how we can harness the best of both explicit instruction and independent learning.

"Load Reduction Instruction" (LRI; Martin, 2016, 2018; see also Martin & Evans, 2018) is an approach to teaching that seeks to get the right balance between explicit instruction and independent learning. LRI initially involves explicit instruction. Then, as students develop the required skill and knowledge, LRI involves less structured approaches such as guided inquiry-, discovery-, and problem-based learning.

The Five Principles of LRI

LRI comprises five principles at key points in the learning process:

- **1.** Reducing the difficulty of a task during initial learning
- **2.** Instructional support and scaffolding through the task
- **3.** Ample structured practice
- **4.** Appropriate provision of instructional feedforward, and
- **5.** Independent practice, supported autonomy, and guided discovery learning

Students are initially novices at many points in the learning process, and so it is important to minimise the cognitive burden on them in the early stages of learning (Mayer & Moreno, 2010; Sweller, 2012). As core skill and knowledge develop (i.e., as expertise develops), LRI then places the emphasis on guided inquiry-, discovery-, and problem-based learning.

Recent research has shown that in classrooms where teachers are using LRI, the students are more motivated, more engaged, and achieving more highly (Martin & Evans, 2018).

The LRI Principles in Practice

Following are some brief suggestions for each of the five LRI principles (full descriptions and further examples are described in Martin, 2016, 2018).

1. Reducing the difficulty of a task during initial learning

- Revising key ideas at the start of a lesson
- Breaking work into "bite-size" segments (known as "chunking")

2. Instructional support and scaffolding through the task

- Logical and linear sequencing of lessons and information delivery
- Ensuring there is enough instructional time for students to master a task
- Regularly checking for students' understanding during the lesson
- Providing "worked examples" that show students what a completed task looks like

3. Ample structured practice

- Having the students rehearse or repeat an important skill until it is mastered (known as "deliberate practice")

- Guiding students through the learning steps, such as prompting their responses through a task (known as "guided practice")

4. Appropriate provision of instructional feedforward (i.e., feedback that is improvement-oriented)

- Specific and concrete information on the correctness of an answer (known as "feedback")
- Using "feedforward" - this is feedback combined with specific suggestions for how to improve

5. Independent practice, supported autonomy, and guided discovery learning

- When skills and knowledge are automated and fluent (i.e., they are embedded in long-term memory), students attempt a similar problem or task independently (known as "independent practice")
- After independent practice has succeeded, students undertake a new task or apply their new learning to "real-world" or "ill-defined" tasks to further extend their learning

In conclusion, LRI minimises the cognitive load on students to help their motivation, learning, and achievement—especially in the early stages of learning when they are novices. Then, when students have built core knowledge and skill, LRI emphasises the importance of guided inquiry-, discovery-, and problem-based learning. In these ways, students benefit from the best of explicit instruction and discovery-oriented learning.

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