



# LEARNING AS A GENERATIVE ACTIVITY

Eight Learning Strategies that Promote Understanding

CAMBRIDGE UNIVERSITY PRESS

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## THEORY



What is summarization and how does it help learning?

### Family of strategies

Summarization is a family of strategies that can be broken down into two groups: verbal summaries and spatial summaries. This chapter focuses on verbal summaries.

Of the verbal summaries, the focus is on it being used during learning, with the content to hand. When applied after learning – with no access to the materials– it is framed under the testing effect, or retrieval practice

### Break down of skills

Summarization involves:

- deleting irrelevant information
- deleting redundant information
- replacing the details with a more general terminology or description
- constructing a *gist* – an overall narrative.

### Essential cognitive skills

Deeper, more long-lasting learning happens when students create meaning by:

- selecting information: choosing which bits of information are more important
- organising information: relating the chosen items into a coherent whole.
- integrating information: using own words and relating to their prior knowledge.

By doing this, students are thinking about the material to search out meaning – which in itself forges links between working and long-term memory. Being a difficult task, not all students can succeed without some scaffolding. Younger students find it very hard to identify the main ideas without guidance.

## EVIDENCE



What do studies tell us about summarization?

### Number of studies

There were 30 studies looked at, from 1978 to 2012. They all compared a summarising group with a passive reading (control) group. Most were based on later comprehension and recall, some only the latter. Twenty six studies showed a positive impact for summarising, with a median effect size of 0.5

### Summary v passive reading

Doctorow, Wittrock and Marks (1978) worked with low and high attainers. One composite group wrote a single sentence for each paragraph, while the other composite group simply read the paragraphs. Summarisers outperformed the control group. The lower attainers had an effect size of 1.58, while the higher attainers 0.99.

### Frequent v infrequent summaries

Spurlin and colleagues (1988) worked with a control group and two others. One summarised more frequently, the other less so. Frequent summarisers had an effect size of only 0.22 while the infrequent summarisers, 0.86. It was theorised that the effort required in this latter task accounted for the impact

### Direct instruction v none

King, Biggs and Lipsky (1984) looked at the possible impact of providing some students with explicit instruction on summarisation skills, comparing them to a group using their normal note-taking practices. The taught group were superior on two measures: 1.97 for recall and 1.22 for comprehension.

## BOUNDARY



What are the conditions for its most effective use?

### Content

The nature of what is being summarised can have a very strong influence on effectiveness of attempted summaries. Science concepts related to physics and chemistry contain ideas that are built on spatial relations. As a result, this type of content is far better summarised using mapping techniques.

### Frequency

Summarising less frequently is more effective than more frequent summaries. This is probably because is it harder to do and requires more effort. The exception to this is when frequent summaries are short, as in one-sentence summaries of each paragraph.

### Skills

Teaching your students how to summarise, with step-by-step instructions, pays dividends. Such students outperform those left to use their own techniques in both straight recall of facts and comprehension.

### Prior knowledge

Unsurprisingly, having prior knowledge of the content to be summarised makes an enormous difference.

### Age

Equally unsurprising, younger students find the identification of key ideas among a passage of text very difficult to achieve. This may not be altogether determined by the degree of prior knowledge they have.