Chunking

Information can be chunked in working memory to increase capacity.

1. Chunking is the organization of items into familiar or manageable units or chunks.

2. Chase and Simon (1973) showed that when people are given 5 seconds to view the arrangement of pieces in a chess game, chess experts remember nearly all the pieces while nonexperts remember on average only 9 of 32 pieces. However, when the chess pieces are randomly arranged on the board, chess experts and nonexperts do not differ in their memory for the pieces. The chess experts remember groupings or chunks of meaningful units; when the pieces lose meaningful groupings, the experts’ working memory capacity is similar to that of others.

3. Chase and Ericsson (1982) demonstrated that a male subject who was a runner started with an average memory span for digits (7 plus or minus 2 digits), but with practice and chunking, he could recall up to 80 digits presented to him randomly at a rate of 1 per second. He did this by converting the numbers into running times. Even after his training with numbers, his memory span for letters was average.

4. The practical implication is that when students are learning, they should look for patterns or ways to group information. For example, if a person is trying to remember a friend’s email address (CPM1995@email.com), the person will more likely remember the address if he or she sees the three letters as the friend’s initials and the numbers as the friend’s birth year (as opposed to trying to memorize seven unrelated characters). The greater a person’s experience or background knowledge within a domain, the greater his or her ease in chunking.