may be impaired. The conceptual domain of information depicted in the graphs may disrupt graph perception (Tversky & Schiano, 1989; Zacks & Tversky, 1999).

Graphical designers should take into account the conceptual and perceptual processes of learners when they try to understand graphical displays. As proposed by Carpenter and Shah’s (1998) model, graph comprehension was a multiple and integrative cycle of three major processes: pattern recognition that encode visual patterns, construction of meaning that translates the patterns into relations, and relating the meaning to the referents identified from the variable names, labels, and scales. The natural mapping between perceptual relations in visuospatial representations and conceptual relations could facilitate visual reasoning when graphs were used appropriately (Gattis & Halyoak, 1996).

References


