IMPACT OF STATISTICAL GRAPHS ON THE READING COMPREHENSION OF INTERACTION EFFECTS

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INTRODUCTION

Interaction effect is one of important aspects of statistical literacy. While examining an interaction effect, it is necessary to identify the relationship between variables, which requires scientific thinking (Zohar, 1995). Reading comprehension of interaction effects is the process of integrating information in the text and graph, especially by reading a graph appropriately (Carpenter & Shah, 1998). Consequently, **this study aimed to explore the impact of statistical graphs on comprehending the interaction effect.**

METHOD AND RESULTS

The Eyelink 2000 was used to collect data from 60 adults. Experimental materials were "text only" and "text with graph" descriptions of an interaction effect. Additionally, a researcher-made test of interaction effect was used. ANOVA and sequential analysis were used to deal with research data. Results showed that the reading comprehension of the text with graph group (M = 15.06, SD = 2.11) was significantly better than the text-only group (M = 12.55, SD = 2.67) [$F(1,59) = 10.46$, $p < .01$]. The reading sequence of text and graph describing an interaction effect has been shown in Fig 1.

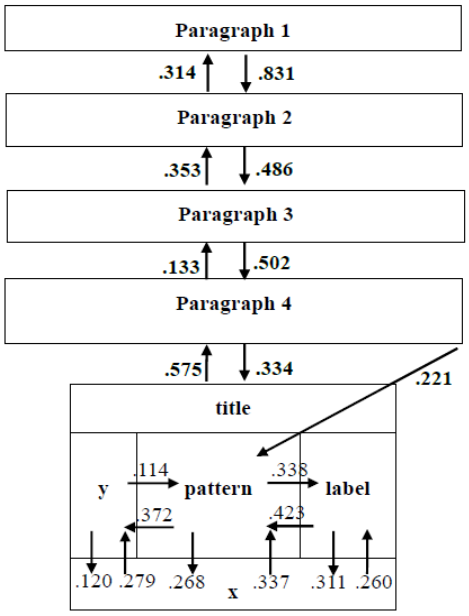

Fig 1 Reading sequence of the text and graph describing an interaction effect

It is suggested that a statistical graph functions as a spatial and semantic representation for readers. This helps them map surficial or propositional representations, fostering construction of mental models, which enhances them achieve reading comprehension efficiently. Additionally, the recognition of an axis and central pattern facilitated the confirmation and mapping of information in the graph unto propositional representations.

REFERENCES

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