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兩篇七年級「能量塔」文本之比較分析

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摘要

本文旨在分析比較 2 篇能量塔文本的語言特性及其差異。選取七年級 X、Y 版生態系單元與能量塔概念有關的內容為標的文本，以逐步文本分析系統分析比較 2 篇文本的基本語言、漢語及科學語言等特性之差異。研究發現，2 篇文本的詞彙密度及科學詞彙密度未達顯著差異，而科學詞彙內容則有不同。從漢語特性來看，X 版出現無訊息零代詞及不具分類意涵之含「的」的名詞組較 Y 版多，可能會對閱讀 X 版之讀者有較多閱讀理解之挑戰。從科學語言特性來看，Y 版以具體事件逐漸抽象化的歷程來構作科學概念，符合技術建構歷程，並使用較多元的銜接關係，相較之下，X 版則無技術建構的歷程，使用的銜接關係也較少。本文建議科學教科書的編寫應考量漢語特性及科學語言特性。

關鍵字：技術建構、科學文本、科學語言、銜接關係、漢語特性

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Evaluating Two 7th Grade Texts of “Pyramid of Energy Flow”

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Abstract

This study investigates the differences between two texts (X-version and Y-version) regarding pyramid of energy flow in 7th grade science textbooks, conducting a stepwise regression analysis of language base on systemic functional linguistics. The analysis required studying the number of events, lexical density, zero anaphora, nominal groups, technical construction, and cohesion, to clarify the differences between the two texts. The results of this study showed no differences between these two texts regarding the number of events and lexical density. The Y-version provided more cues for readers to retrace the zero anaphora and understand the taxonomy of nominal groups. For providing interpretations of scientific concepts, the Y-version was more cohesive compared to the X-version by using more language resources, such as conjunctions and adverbs. Therefore, evaluations of the texts should consider the features of Mandarin and the language of science.

Keywords: technicality construction, science text, language of science, cohesion, features of Mandarin