Shiraz University

A review of Arabic books of the second secondary school based on Kress and Van Leeuwen's social semiotic representation meta-function and Guo and Feng's ontogenical perspective

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Abstract

In textbooks and educational texts, images play an important role and provide significant opportunities for authors of second language educational texts such as Arabic. The effectiveness of images requires familiarity with different image patterns and how to use them in educational books in order to provide a better learning environment. Therefore, in the present research, a quantitative and qualitative investigation and analysis was made of the images of second secondary Arabic books (10th to 12th grade) based on the different dimensions of Kress and Van Leeuwen's social semiotic representational meta-function, including the dimension of process, personality, and environment. Moreover, how the ontogenical process changed in the represented concept of images in accordance with the cognitive and perceptional development and knowledge of the learners was probed by the ontogenical perspective of Guo and Feng. The results showed that, according to the mental growth process and the knowledge of the learners, there is no highly suitable model in choosing pictures in the 10th to 12th grades. Examining the three dimensions of representational meta-function—proces, character, and environment—showed there was a lack of representing developmental changes from narrative to conceptual, from individual to group or part-to-whole, from cartoon to photo, and from native environments to non-native environments in the images of the three textbooks under investigation. According to this research, in the future editions, by choosing appropriate images based on the developmental and perceptual process of the learners, these textbooks will have better efficiency and will contain purposeful images to facilitate learning and delivery of content.

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1. Introduction

After students' verbal communication with the teacher, textbooks are the most important source of communication with the language. In addition, the images and photos used in textbooks are part of the content, and placing them in the right position and maintaining their suitability with the text and content requires a lot of precision and knowledge so that they can be viewed and referred to by the learner for enhanced learning. In this regard, Hibbing and Erickson (2003) state that a picture is worth more than a thousand words. Therefore, considering that textbooks are the most important expression of education in schools, in the present study, discussion is made of the dimensions of representation of images (process dimension, personality dimension, and environment dimension) in second secondary Arabic textbooks based on Kress and Van Leeuwen's social semiotic representation meta-function (2006). Furthermore, the structure of the images of these books is analysed in terms of the change in representation and the suitability of these images for their perceptual ability and cognitive development based on Guo and Feng's (2015) ontogenical perspective.

1.2. Research Questions

The research questions are:
- What are the characteristics of Kress and Van Leeuwen's social semiotic representation in the images of secondary Arabic books in terms of process, personality and environment dimensions?
- To what extent are the representational structures in the pictures of secondary Arabic books consistent with and related to the knowledge transfer of learners and their cognitive and perceptual development based on Guo and Feng's developmental model?
- How is the process of changing representation in the structure of images used in secondary Arabic books evaluated in terms of process, character, and environment dimensions?

2. Literature Review

Kress and van Leeuwen's representational meta-function is related to image constituents such as persons, places and objects. This painting answers the important question, what do the images represent? The new idea of social semiotics to analyse images in terms of their representational meta-function is related to its emphasis on the syntax of images as a representational source. Kress and van Leeuwen have divided these patterns of visual syntax into narrative and conceptual patterns based on their function in creating meaningful connections between image components. Guo and Feng (2015), influenced by the representational meta-function of images by Kress and van Leeuwen, have investigated the effect of images in terms of the process of perceptual development. They state that educational images with relevant text should progress from the action of sharing and reconstruction in the early stages, to reporting and explaining in higher stages. Therefore, examining this growth process along with various types of image processes can be effective in forming the knowledge of learners and improving their educational quality. According to Christie (2017), this theory, which deals with the developmental changes of learners, can provide principles based on which teachers can have the opportunity to play a more effective role in academic progress and increase the quality of students' learning at different levels of education and have appropriate solutions. To provide homework during the academic year.

3. Methodology

The method used in this research is descriptive and analytical. The statistical population of this research includes three secondary Arabic books of the literature and humanities field published in 2023: the 10th grade book includes 8 lessons, the 11th grade book includes 7 lessons, and the 12th grade book includes 5 lessons. The analysed units of this research include images used in each lesson, with images related to Arabic sentences, teaching rules and exercises; the analysis was based on social semiotic representation meta-function by Kress and van Leeuwen (2006) and its adaptation to the developmental perspective of Guo and Feng (2015). To collect data from the checklist and to analyse them, two approaches of checking the frequency of words and content analysis were used. The mentioned books were analysed based on the components of cross-representation (Kress and van Leeuwen, 2006) presented by Guo and Feng (2015). This was done in three dimensions including process, personality, and environment in order to investigate the characteristics of the representation of images with the help of Kress and Van Leeuwen's theory of representation and to evaluate the process of transferring concepts with the help of Guo and Feng's developmental perspective. Second, in general, the answers to the research questions were analyzed.

4. Results & Discussion

After examining the images in terms of the process (narrative pattern and conceptual pattern) in the dimension of representation of both patterns or the narrative and conceptual process in the images of secondary Arabic books, it is observed; But in total and in all three grades, 10th, 11th and 12th, there are more images with a conceptual process in which they introduce objects, places, animals, and humans (without performing narration and action) than images with a narrative process in which action is performed and the movements of human elements are reflected. In this way, the pictures of the books of all three grades include 76 cases, equivalent to 32.06%, in terms of narrative process and 249 cases, equivalent to 67.93%, in terms of conceptual process. In this research, the personality dimension in the images was investigated in different dimensions. The characters were examined as groups or individuals, and cartoons or photos. The appearance of characters in groups in the tenth grade (52.05%) and twelfth grade (51.06%) is more than that of individuals. However, in terms of efficiency, individual images (83.87%) are used much more than group images (16.12%). In addition to group and individual characters, the characters in the pictures can be cartoons or photos. Therefore, the images used in the Arabic books of all three grades were analysed quantitatively and qualitatively from this point of view. In the Arabic books of all three levels, the characters of the pictures are presented in cartoon form or in some kind of imagination, and most of the characters of the pictures are in the form of real photos. In terms of the environment dimension, the location of the images was examined based on native and non-native location. Native situations include community, school, and family environment. Non-native situations include regional and global environments. Quantitative analysis of the images shows that in all three categories, there are more images that have native locations or environments than those that have non-native locations.

5. Conclusion

The results of the present research show that between the dimensions of the representation of the images of secondary Arabic books, such as the dimensions of the processes, the dimensions of the characters in terms of cartoon characters and real photos, and the dimension of the environment, there is no complete and proper agreement with the patterns provided by Guo and Feng (2015), and the images are not in accordance with the process of mental and perceptive development of students. Because the examination of the three

dimensions of the role of representation, i.e. the process dimension, the character dimension, and the environment dimension showed developmental changes from a narrative style to a concept, from an individual to a group or a part to a whole, from a cartoon to a photograph, and from native environments to non-native environments. Bumi is not present in the images of these three textbooks under research. According to this research, the authors of the mentioned books in the future editions can, by choosing appropriate images based on the developmental and perceptual process of the learners, make the images more effective and purposeful to facilitate learning and convey the content better for the learners.

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