
A qualitative and quantitative analysis of contents concerning of pluralism of processes and evo-devo in higher education textbooks of evolution and vertebrate zoology

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Abstract

This article reports the results of a comparative content analysis of three evolutionary biology textbooks and three vertebrate zoology textbooks, significantly adopted in the biology higher education syllabuses in several universities of Latin and Anglo-Saxon countries. Through a documental quali-quantitative analysis of the textbooks, performed by using content analysis methodology, we undertook an investigation of the approach and recontextualization of contents related to evolutionary developmental biology (evo-devo) and process pluralism in the selected books. Based on this investigation, we sought to answer the following question: to what extent and in what manner those contents, related to important advances that took place in evolutionary biology in the last two decades, are recontextualized in evolution textbooks and in the discussions on evolution present in vertebrate zoology textbooks? The findings of this study show that evolution textbooks are still at an initial phase of recontextualization of the contents related to process pluralism and, thus, to what has been called the extended synthesis in the field of evolutionary biology. However, they are in a more advanced stage of recontextualization than the analyzed vertebrate zoology textbooks, in which a substantially smaller diversity of evolutionary mechanisms was observed, with a large emphasis only on natural selection. These findings are not surprising, since the idea of an extended synthesis is not well established yet in evolutionary biology itself. With regard to the evo-devo contents, a more significant level of recontextualization was observed in the textbooks of both fields, showing that at least part of the content of the so-called extended synthesis already reached biology higher education.

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