



Teaching with Tolkien: environmental analysis of a fantasy world

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In this study, the use of a fantasy world as a tool for teaching Geosciences especially in teacher training at the University of Basel is presented. J.R.R. Tolkien's *The Lord of the Rings* is one of the founding texts of fantasy literature and the centrepiece of a number of writings about the geography, history and mythology of „Middle-earth“. The books have long become a cult phenomenon which has been transmitted to a new generation of followers by the massive success of the movie trilogy released between 2001 and 2003. The renewed interest in Tolkien's Middle-earth offers a unique opportunity to connect the Geosciences with literature studies and vice versa. Tolkien's Middle-earth is a distant and yet familiar enough world to allow for an analytical reflection of its geologic and ecologic coherence. The geographical analysis shows that the layout and description of Middle-earth roughly correlates with the paradigms of the Earth Systems Sciences. However, there are discrepancies between the spatial patterns of the various spheres which cannot be attributed just to artistic licence or ignorance, but point to significant issues connected with the moral and symbolic logic of Tolkien's work. For example, the absence of trees and woods in certain parts of „Middle-earth“ where they would be expected in view of the description of climate throws into relief Tolkien's preservationist agenda. This setting, i.e. both the correlation between our world and Middle-earth, as well as the discrepancies, allow for a wide range of teaching activities. First and foremost, the geologic setting, both looking at Middle Earth as a self-contained world, but also a comparison of landmarks with their movie counterparts, offer pupils and students the opportunity to apply their knowledge of geosciences to a new world. For example, a typical question to be discussed is whether New Zealand volcanoes are of a similar type than those one would expect in Mordor. Further subjects for studies include methods, such as the reconstruction of environmental conditions from literature, but also GIS-based analysis of climate, vegetation, and land use. The lack of detailed information about the environment of Middle Earth offers students a new freedom to apply their knowledge and formulate a scientific hypothesis outside the pressure of delivering a correct answer. In our experience, this stimulates discussion and a vigorous exploration of the pupils' existing knowledge. Furthermore, a first case of breaking up the traditional barriers between humanities and natural sciences can be achieved by studying Middle-earth.