Role-playing as a strategy to teach how to argue in Science. The vision of teachers in initial training

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The construction of arguments to defend different positions is a common practice in different contexts of our daily lives. When we speak of argumentation in the educational sphere, we refer to a social, rational and verbal activity (Chin and Osborne, 2010). The experience presented here shows the use of a ludic strategy, such role-playing, to improve the argumentation capacity in 66 Pre-Service Primary School Teachers (PSPSTs) of the University of Malaga. This activity focused on the current problem of plastics consumption, specifically the elimination of its use from 2021, with the objectives of to develop critical thinking through this controversy and make them reflect on its possible application to the classroom. Often, role-play, as a didactic resource, has a limited acceptance in the educational field (Grande and Abella, 2010), probably because the benefits provided are not really known, such as the development of argumentative capacity, comprehension and oral expression, motivation of students, or promote attitudes such as empathy or tolerance (España, Rueda and Blanco, 2013), among others. In the case of science education, it is ideal for establishing a debate in the classroom using a specific social controversy with a scientific background, such as the use of plastics. Overall, the PSPSTs considered the experience to be very positive, as they had a high level of involvement in the game. Also, they showed an excellent predisposition to the use of role-playing as a strategy to foster the development of argumentation capacity, expressing it with ideas such as "*it creates empathy*", "*it develops critical thinking*" or "*it encourages the ability to argue*". Concerning the academic potential of role-playing, the PSPSTs evaluated it better after the implementation in the classroom (8.6/10.0) against a rating of 8.3 out of 10.0 before it. Likewise, before the implementation, 54.1% of the PSPSTs showed interest, and 20.3% showed insecurity in defending their role; passing to values of 64.9% and 1.8%, respectively, after it. Therefore, this experience highlights the need to train PSPSTs in these types of strategies to allow to transfer them successfully to the primary classroom.

Keywords	*initial teacher education (pre-service), role-playing, plastics, scientific argumentation, social problems*

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