

Creativity and Science Teaching: developing a methodological framework for initial teacher training

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Abstract

Science education holds a critical position by developing knowledges, capacities, attitudes and values, that should be connected with science, technology and society (Cachapuz, 2023; Martins, 2020). Educational challenges faced this century and for the future, invite the mastery of specific and transversal skills such as creativity, critical thinking, communication and collaboration (P21, 2017). This abstract concerns to a PhD research project that aims to develop, validate and evaluate a pre-service teachers training program with a STEAM approach, developing creative and teaching skills for the initial training for primary school science teaching. This is a qualitative study based on the Educational Design Research (EDR), which is a collaborative and iterative research methodology to develop not only new theoretical contribution, but also practical solution to teaching and learning contexts (McKenney & Reeves, 2020). This is communication focus on presenting the methodological conception of the training proposal through cycles of context analysis, design prototypes, implementation and evaluation, in order to get an innovative proposal that best suit the investigative and practice needs (Reeves, 2006). The preliminary results reinforce the importance of the different cycles in the process. It was collected feedback from participants during all stages of implementation that helped to make important redesigns on proposal such as time spent on activities, support and mentoring, improvements in creative and teaching skills tools. For future work, we will present the results of each data collection instrument adopted in the implementation stage with reflection for initial teacher training.

Keywords: Educational Design Research (EDR), Creative thinking, Primary School Teacher, Pre-service teacher, Science Education