

## VISUALIZATION AND DISTANCE TEACHING IN COMPLEX ANALYSIS. DESIGN AND USE OF MATERIALS

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The Universidad Nacional de Educación a Distancia (UNED) is one of the biggest distance universities in the world, with more than 200,000 students. Distance teaching at UNED has traditionally been focused on a textbook students should study, and the support of the teachers either by telephone or e-mail and rarely a few classes. This is changing thanks to the development of ICT. New technological developments are bringing new opportunities for distance teaching. In particular, the use of dynamic geometric software (GeoGebra), graphical representation software (SciLab) and other tools allow the strong geometrical component Complex Analysis possesses to be exploited in order to enhance students' comprehension of the concepts. With this aim, the project 'Visualization and teaching complex variable functions: design and use of materials' has been created.

In this poster, some of the materials designed will be exposed together with a reflection about the kind of topics, representations and tasks they involve. Moreover, the team is composed by the teachers of five subjects with contents on Complex Analysis from three different degrees: Mathematics, Physics and Engineering. This variety of teachers permits us to study differences among them: How do different teachers interpret visualization in complex variable functions? Which problems do they focus on? How do they choose to create materials for students? In order to explore these questions and taking into account the lack of previous research in visualization on Complex Analysis on the one hand and our aim of designing new materials on the other, we have chosen Design Based Research methodology. The initial duration of the project is one academic year with two cycles of research. Each cycle is composed by four consecutive steps: 1. Exploration and design of materials. 2. Use of the materials. 3. Evaluation of the design and use. 4. Revision of materials. The comparison between the different ways in which different teachers create materials and the feedback and evaluation of the materials may shed new insights on the role that visualization plays in teaching and learning Complex Analysis.

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