

Preface

This book was motivated by the will of the authors to understand how open access repositories are being developed and maintained and to provide, disseminate and promote the development of digital educational resources. It is also our will to understand how these technological environments can enhance the development of teachers' new skills and new pedagogical and didactic approaches. Thus, the main objective of this brief is to analyse open access repositories quality criteria and features, and how these can improve teachers' Technological Pedagogical Content Knowledge (TPACK) development.

This book is organized in six major sections. Section one, *Open Access Repositories and Digital Educational Resources*, addresses an historical overview of open access repositories, presenting some recommendations for their development and maintenance, namely regarding digital educational resources (re) use. Given that this brief is research driven, in section two the authors present the objectives and the methodology used in the present study. Sections three, four and five analyse namely (1) the prevalence of European Science Education open access repositories and teachers' perceptions of those same repositories, (2) the most common European Science Education open access repositories features and their implications, and (3) the impact of open access repositories usage on teachers' TPACK development. The last section, *Results and discussion*, focuses on the analyses of a selected open access repository [*House of Sciences* (originally *Casa das Ciências*)], addressing its characteristics and features, the impact of social media features in digital educational resources (re) use, and the relationship between repository quality criteria and teachers' TPACK development. For this study, the authors collected, crossed and analysed data from different sources, namely the relevant literature in the field, information available in open access repository and their social networks, and information provided by repository stakeholders, adopting mostly a qualitative e-Research methodology.

This study allowed to stress that Science Education open access repositories development and availability represent an important tool to increase digital educational resources (re) use and the adoption of new pedagogical and didactic approaches. Based on the comprehensive analysis of the selected open access

repository and attempting to underline availability, maintenance and updating, and enhancement requirements for the importance of digital educational resources usage, the authors present a set of proposals to be taken into consideration in (future) Science Education open access repositories, having in mind a set of keywords that underlie the whole text: Digital Educational Resources, Open Access Repositories, Science Education, Social Media, TPACK and e-Research.

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Rita Tavares
António Moreira

Implications of Open Access Repositories Quality
Criteria and Features for Teachers' TPACK Development

Tavares, R.; Moreira, A.

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