

Sussex Research

The state of art regarding scientists, outreach and evolution: a systematic literature review design

S Ambrósio, B Ashby, A P Costa, C Guerra, A Santos, James Williams, I Yruela

Publication date

30-11-2020

Licence

This work is made available under the **Copyright not evaluated** licence and should only be used in accordance with that licence. For more information on the specific terms, consult the repository record for this item.

Document Version

Published version

Citation for this work (American Psychological Association 7th edition)

Ambrósio, S., Ashby, B., Costa, A. P., Guerra, C., Santos, A., Williams, J., & Yruela, I. (2020). *The state of art regarding scientists, outreach and evolution: a systematic literature review design* (Version 1). University of Sussex. <https://hdl.handle.net/10779/uos.23478563.v1>

Published in

ICERI2020 Proceedings

Link to external publisher version

<https://doi.org/10.21125/iceri.2020.1668>

Copyright and reuse:

This work was downloaded from Sussex Research Open (SRO). This document is made available in line with publisher policy and may differ from the published version. Please cite the published version where possible. Copyright and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners unless otherwise stated. For more information on this work, SRO or to report an issue, you can contact the repository administrators at sro@sussex.ac.uk. Discover more of the University's research at <https://sussex.figshare.com/>

Ambrósio, S.

CIDTFF, University of Aveiro , sambrosio@ua.pt

Ashby, B.

University of Bath, benashbyevo@gmail.com

Costa, A.P.

CIDTFF, University of Aveiro, apcosta@ua.pt

Guerra, C.

CIDTFF, University of Aveiro, cguerra@ua.pt

Santos, A.

Univ Portucalense, Portucalense Institute for Legal
Reserach , ana.monteiro.santos@hotmail.com

Williams, J.

School of Education and Social Work,
james.williams@sussex.ac.uk,

Yruela, I.

Estación Experimental de Aula Dei, National Spanish
Research Council, ii.yruela@csic.es

THE STATE OF ART REGARDING SCIENTISTS, OUTREACH AND EVOLUTION: A SYSTEMATIC LITERATURE REVIEW DESIGN



THE STATE OF ART REGARDING SCIENTISTS, OUTREACH AND EVOLUTION: A SYSTEMATIC LITERATURE REVIEW DESIGN

Ambrósio, S.

CIDTFF, University of Aveiro , sambrosio@ua.pt

Ashby, B.

University of Bath, benashbyevo@gmail.com

Costa, A.P.

CIDTFF, University of Aveiro, apcosta@ua.pt

Guerra, C.

CIDTFF, University of Aveiro, cguerra@ua.pt

Santos, A.

Univ Portucalense, Portucalense Institute for Legal
Reserach , ana.monteiro.santos@hotmail.com

Williams, J.

School of Education and Social Work,
james.williams@sussex.ac.uk,

Yruela, I.

Estación Experimental de Aula Dei, National Spanish
Research Council, ii.yruela@csic.es

01

Scientists play a crucial role in the outreach activities and in the shape of the science-society relation over time. Nevertheless, there are some barriers that are holding scientists back from participating more actively in outreach initiatives, namely in the Evolution field. Taking this into account, the COST Action “Building on scientific literacy in evolution towards scientifically responsible Europeans – EuroScitizen (CA17127) has dedicated one of its Working Groups to Scientists, which is focused on ensuring efficient researchers’ engagement in outreach and in evolution in particular. In order to achieve this goal, there is an ongoing systematic literature review in progress which aims to identify the ways in which researchers can be involved in outreach and to enable the development of a set of good practices that improve science and evolution literacy. The Review Protocol Design is presented and its role in enhance of the quality, replicability, reliability, and validity of these reviews is stressed.

THE STATE OF ART REGARDING SCIENTISTS, OUTREACH AND EVOLUTION: A SYSTEMATIC LITERATURE REVIEW DESIGN

KEYWORDS

Scientists

Outreach

Evolution

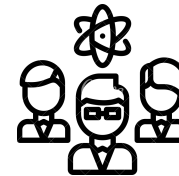
Systematic Literature Review

EuroScitizen

COST Action

02

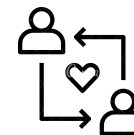
OUTREACH = SCIENTIFIC COMUNICATION + AUDIENCE OUTSIDE OF
ACADEMIA ENGAGEMENT



Scientists are at Outreach's heart, playing a crucial role
in the public acceptance of Science



Scientists' involvement in outreach seems to be expected by society
and it is one of the things most valued by the public .



Scientists' involvement in outreach activities contribute greatly to shape the science-
society relation

Scientists have a main role in the appropriate development of this relationship
Benefits for both scientists and society.

THE STATE OF ART REGARDING SCIENTISTS, OUTREACH AND EVOLUTION: A SYSTEMATIC LITERATURE REVIEW DESIGN

EUROSCITIZEN

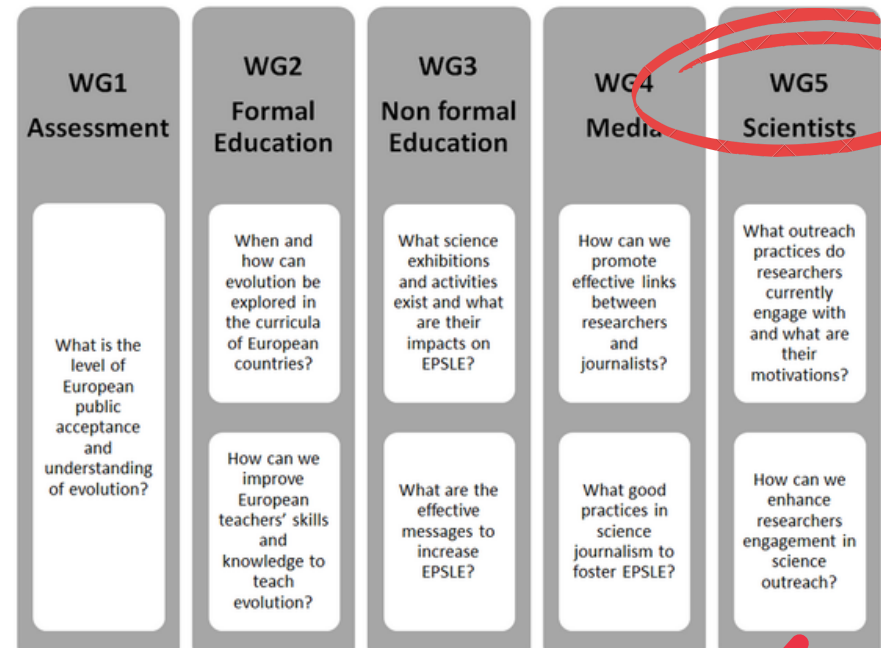
EuroScitizen (CA17127) is an EU funded COST Action, a research network which aims to identify targeted strategies that will raise levels of scientific literacy in Europe using evolution as a model.

www.euroscitizen.eu

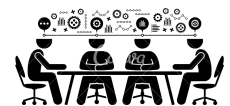
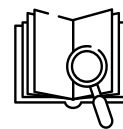
03

WHAT DO WE WANT TO KNOW?

How can we improve European public scientific literacy on evolution (EPSLE)?



HOW ARE WE GOING TO DO IT?



THE STATE OF ART REGARDING SCIENTISTS, OUTREACH AND EVOLUTION: A SYSTEMATIC LITERATURE REVIEW DESIGN

A SYSTEMATIC LITERATURE REVIEW PROTOCOL

04

STEPS OF THE REVIEW PROTOCOL

PLANING THE REVIEW

1 -Formulate the Problem
2 - Develop and Validate the
Review Protocol

1 -Identification of the need for
revision
2 - Preparation of the proposed
revision
3 - Elaboration of the research
protocol
4 - Identification of the research

CONDUCTING THE REVIEW

3 - Search the Literature
4 - Screen for Inclusion
5 - Assess Quality
6 - Extracting Data
7 - Analyzing and Synthesizing
Data

5 - Selection of documents
6 - Evaluation of the quality and
relevance of the documents
7 - Data processing
8 - Synthesis of data

REPORTING THE REVIEW

8 - Report Findings

9 - Obtaining evidence and
application

THE STATE OF ART REGARDING SCIENTISTS, OUTREACH AND EVOLUTION: A SYSTEMATIC LITERATURE REVIEW DESIGN

CONDUCTING THE REVIEW

05



- **Search the literature/Selection of Documents**

- Literature sources

- Keywords

- Sampling Strategy

- Additional restrictions

- **Screen for inclusion; Assess quality / evaluation of the quality and relevance of the documents**

- Criteria for inclusion/exclusion

- Screening procedure

- **Assess quality / evaluation of the quality and relevance of the documents**

- Quality assessment procedure

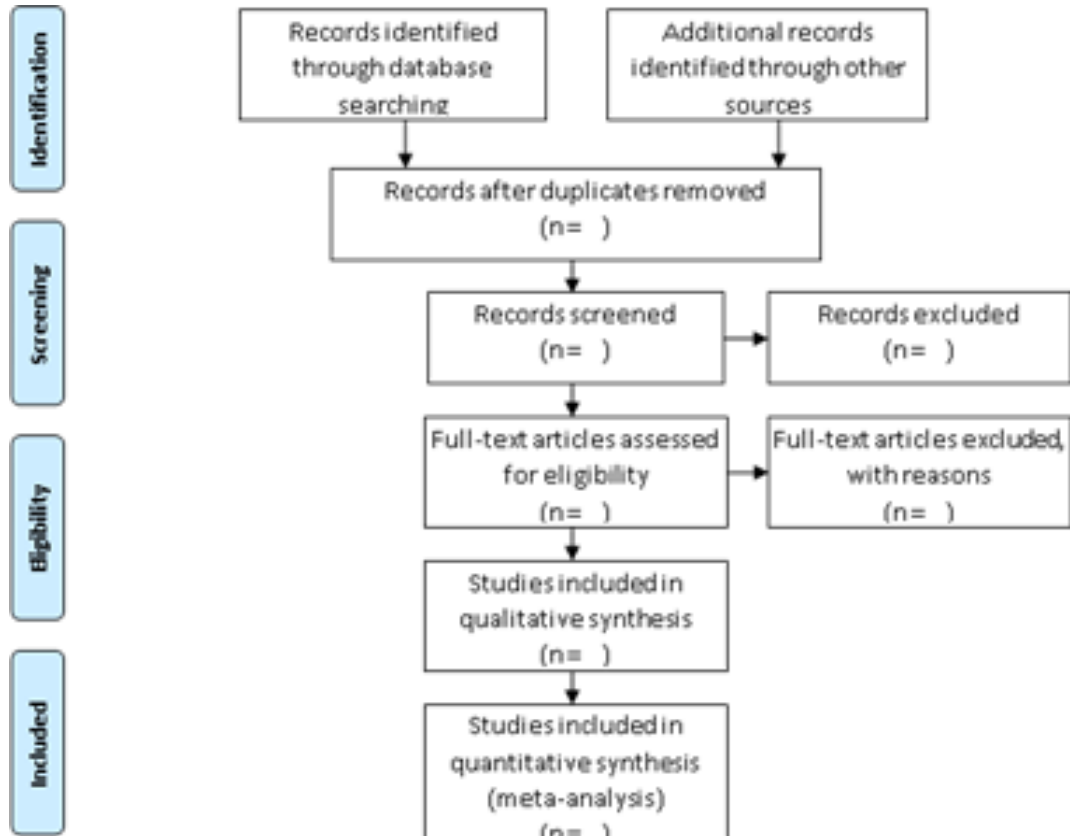
- **Extracting Data/ Data processing**

- Coding

THE STATE OF ART REGARDING SCIENTISTS, OUTREACH AND EVOLUTION: A SYSTEMATIC LITERATURE REVIEW DESIGN

FURTHER STEPS

06



THE STATE OF ART REGARDING SCIENTISTS, OUTREACH AND EVOLUTION: A SYSTEMATIC LITERATURE REVIEW DESIGN

SOME REFERENCES

07

- L. F. Fornari, I. Pinho, A. P. Costa, "Review of Literature with Support of webQDA Software". 14th Iberian Conference on Information Systems and Technologies (CISTI) DOI: 10.23919/CISTI.2019.8760950.
- D. Moher, A. Liberati, J. Tetzlaff, D.G. Altma, "The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement." PLoS Med, vol. 6, no. 7, 2009. DOI: 10.1371/journal.pmed1000097
- J.D. Williams, How to Read and Understand Educational Research. London: Sage, 2020
- Y. Xiao, M. Watson, "Guidance on Conducting a Systematic Literature Review" Journal of Planning Education and Research, vol. 39, no.1, pp. 93–112, 2019. DOI: 10.1177/0739456X17723971