



[original insight]

Diamond Open Access

Open Knowledge Base: Resources and Units of Knowledge

Open Collaboration*†

May 23, 2020

Abstract

This paper is about highlighting two categories of knowledge bases, one built as a repository of links, and the other, based on units of knowledge.

keywords: open science, knowledge base, database, resources, units of knowledge

The most updated version of this paper is available at

<https://osf.io/7vayt/download>

Introduction

1. The **item**, written as a *short sentence* or using *mathematical symbols*, is the *minimum unit of scientific knowledge* [1, 2].

*All authors with their affiliations appear at the end of this paper.

†Corresponding author: mplobo@uft.edu.br | Join the Open Collaboration

Fundamental definitions

2. **unit of knowledge** = the *minimum unit of scientific content* = short sentence (or mathematical symbols) stating one specific result
3. **knowledge base** = a digital platform (repository/database) where users can *search content* using specific *tags*
4. There are two *categories* of **knowledge bases**, one built from **resources** (as a repository of links), and the other built from **units of knowledge**.

Knowledge Base as Resources

5. **KBR** stands for *Knowledge Base* built from *Resources*.
6. By resources we mean links pointing to blogs, videos, papers etc.
7. KBR is essentially a repository/database of links with curated content, specially designed for high standard use in education and related areas.

Knowledge Base as Units of Knowledge

8. **KBUK** stands for *Knowledge Base* built from *Units of Knowledge*.
9. The outputs of a KBUK are short sentences expressing one scientific result assigned with precise scientific tags [3].

Keywords versus tags

10. keywords \neq tags
11. Keywords can accommodate synonyms.
12. tags = precise scientific jargons

13. Tags should **not** include synonyms.

Open Educational Resources Commons

14. One example of a KBR is OER Commons [4].

Open Mathematics Knowledge Base

15. Examples of a KBUK written in the form of a paper (in pdf) are [5,6].

Final Remarks

16. Both KBR and KBUK provide very important and useful content; however, for the sake of organizational purposes, they should be built in different environments, i.e., within different search protocols.
17. The results showed in the KBR should be separate from the results from KBUK.
18. The quality of the tags assigned to the results shown is the most important component for the success of a Knowledge Base.

Open Invitation

Review, add content, and **co-author** this paper [1, 7].

Join the **Open Collaboration**.

Send your contribution to mplobo@uft.edu.br.

Open Science

The **latex file** for this paper together with other *supplementary files* are available [8].

Ethical conduct of research

This original work was pre-registered under the OSF Preprints [9], please cite it accordingly [10]. This will ensure that researches are conducted with integrity and intellectual honesty at all times and by all means.

References

- [1] Lobo, Matheus P. “Microarticles.” *OSF Preprints*, 28 Oct. 2019. <https://doi.org/10.31219/osf.io/ejrct>
- [2] OJMP. Open Journal of Mathematics and Physics. <https://ojmp.org>
- [3] Lobo, Matheus P. “Scientific Tags.” *OSF Preprints*, 6 May 2020. <https://doi.org/10.31219/osf.io/tahx5>
- [4] OER Commons: Open Educational Resources. <https://www.oercommons.org/>
- [5] Lobo, Matheus P. “Open Mathematics Knowledge Base.” *OSF Preprints*, 13 May 2020. <https://doi.org/10.31219/osf.io/evq8a>
- [6] Lobo, Matheus P. “Mathematical Tags of Group Theory.” *OSF Preprints*, 10 May 2020. <https://doi.org/10.31219/osf.io/9xk68>
- [7] Lobo, Matheus P. “Simple Guidelines for Authors: Open Journal of Mathematics and Physics.” *OSF Preprints*, 15 Nov. 2019. <https://doi.org/10.31219/osf.io/fk836>
- [8] Lobo, Matheus P. “Open Journal of Mathematics and Physics (OJMP).” *OSF*, 21 Apr. 2020. <https://doi.org/10.17605/OSF.IO/6HZYP>
- [9] COS. *Open Science Framework*. <https://osf.io>

- [10] Lobo, Matheus P. “Open Knowledge Base from Resources and Units of Knowledge.” *OSF Preprints*, 17 May 2020. <https://doi.org/10.31219/osf.io/7vayt>

The Open Collaboration

Matheus Pereira Lobo (lead author, mplobo@uft.edu.br)^{1,2}

¹Federal University of Tocantins (Brazil); ²Universidade Aberta (UAb, Portugal)