

Current Updates in Bioinformatics

Review Report

Open Access

Article Title: Developing and Assessing an Instructional Definition of Bioinformatics

Reviewer: Alexandre Victor Fassio, Federal University of Minas Gerais, Brazil

Submission Date: October 03, 2017

Review Status: Revision Required

How to Cite this Report: Alexandre Victor Fassio. Review Report for: Developing and Assessing an Instructional Definition of Bioinformatics [Version 1, Awaiting Peer Review]. *Curr Updates Bioinform.* (2017) 1: 1.1

Review Report

In the present work, authors propose an instructional definition of Bioinformatics, i.e., a general and simpler definition of Bioinformatics to be integrated into an educational context. The authors also suggest that departing from this general definition, an educator can adapt it according to the level of its students, what is clearly very important. Authors also propose an assessment rubric, which would aid instructors to evaluate the students concerning their learning about Bioinformatics through their school career.

Following are my concerns:

1. In page 3, authors mentioned that the first two formal definitions created for Bioinformatics may be inadequate and outdated. However, both definitions are general and still suitable for defining this discipline. I suggest rewriting the sentence.
2. Since the focus of authors is to provide a simpler and general definition of Bioinformatics, in my opinion, the term “biological polymers” should be substituted by macromolecules.
3. Regarding the interdisciplinary nature (page 5): authors should also add Physics when they mention “other disciplines” related to Bioinformatics. See Molecular dynamics, for example, which has been widely employed nowadays.
4. Regarding the molecular-level analysis (page 5): authors should mention polypeptides and small-molecules, which are widely employed in virtual screening techniques.
5. General comment: in some parts of the article, the authors were too wordy. For instance, the sentence “In a lengthy and sometimes animated discussion this initial definition was refined and expanded” on page 6.
6. It seems to me that there is an error in the following sentence: “... score in order determine the reliability of the rubric”. Page 8, first paragraph.
7. Tappich and colleagues declare to have selected thirteen representative responses to determine the assessment rubric reliability. However, how did they determined what is representative? Was it a sub-

Current Updates in Bioinformatics

jective criterion? Authors should be clear here.

8. Authors collected various information from students, including demographic data. However, they did not discuss anything about such data. How was it important for the study? They should be clear and discuss if it was relevant or not for their study.
9. I suggest reformulating the sentence "Construct validity of an assessment relates to an instrument meaningfully measuring a construct of particular interest, ..." on page 8.
10. In order to improve the article and help readers to easily understand the methodology applied by the authors, I strongly suggest authors include a simple diagram explaining all steps until they obtained the final rubric.

I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.