Qeios

Peer Review

Review of: "Simplifying Academic Knowledge: Why and How"

Ľubomír Žáčok, PhD.[1]

1. Matej Bel University in Banská Bystrica, Slovakia

Michael Wood's essay *Simplifying Academic Knowledge: Why and How* presents a thoughtful and provocative argument for an academic agenda that prioritizes the simplification of knowledge without compromising its power or integrity. Wood convincingly argues that much of academic knowledge is unnecessarily complex—not only because of the subject matter itself but also due to historical path dependencies, inaccessible jargon, inefficient notations, and an absence of user-oriented design thinking. His central thesis is clear: knowledge should be made as simple as possible, and simplification ought to be treated as a legitimate scholarly goal.

One of the paper's strongest contributions lies in its conceptual clarity. Wood introduces a practical and intuitive framework that identifies three main routes toward simplification: conceptual re-engineering (revising the fundamental structure of knowledge), changing jargon and notation, and designing deliberate "black boxes" that allow users to rely on tools without understanding their internal mechanisms. This framework is both accessible and applicable across disciplines. Wood also successfully distinguishes between simplification and oversimplification, emphasizing that simplification should enhance usability without distorting meaning or diminishing analytical depth.

The essay is especially compelling when illustrating how simplification has historically transformed human capability. Wood revisits powerful examples, such as the replacement of Roman numerals with the decimal system, the shift from geocentric to heliocentric models, and the introduction of Feynman diagrams in quantum physics. These examples reinforce his claim that simplification is not only desirable but has often been essential to scientific progress.

The paper's strengths are further reinforced by concrete, well-developed examples from the author's own teaching and research. Wood proposes rethinking how statistics is taught, offering alternatives to p-values (e.g., "tentative probabilities"), redesigning mathematical notation using Modified Excel syntax,

 doi.org/10.32388/SHIB7W

and replacing the exponential function with more intuitive compound growth multipliers. These proposals are practical, pedagogically sound, and grounded in actual instructional challenges. They exemplify how thoughtful redesign can reduce cognitive barriers for students and non-specialists alike.

Another strong point is Wood's treatment of digital technologies and artificial intelligence. He acknowledges that modern tools, including AI-powered language models, can assist learners by translating complex ideas into more digestible forms. However, he rightly argues that these tools do not fundamentally simplify the *knowledge itself*. Instead, they serve as just-in-time tutors, masking complexity rather than reducing it. Wood's nuanced view resists both technological utopianism and reactionary skepticism, recognizing AI as a complement, not a replacement, for human-centered knowledge design.

Despite these strengths, the paper could benefit from greater empirical grounding. Wood suggests that simplification might reduce learning time by 25% or more, but this remains a speculative claim without experimental validation. Including data from pilot studies or comparative evaluations of simplified versus traditional teaching methods would help bolster his argument.

Additionally, the discussion is heavily rooted in STEM subjects—particularly mathematics, physics, and statistics. While these are natural domains for simplification, the paper would be enriched by examples from the humanities or social sciences, where knowledge may be less formulaic and more interpretative. Engaging with disciplines like history, philosophy, or law could reveal different, but equally valuable, approaches to simplification.

Wood also identifies institutional inertia—particularly in academia's reliance on tradition, peer review, and credentialing—as a key obstacle to simplification. However, this dimension remains somewhat underexplored. A deeper examination of how power structures, professional gatekeeping, and educational policies reinforce complexity would add sociological depth to the critique.

Overall, *Simplifying Academic Knowledge* is a stimulating and timely contribution that challenges the assumption that knowledge must be hard to be rigorous or valuable. Wood reframes simplification not as a dilution of standards, but as a path to deeper, broader, and more efficient understanding. His vision—one where students reach the frontiers of knowledge faster, and where even quantum mechanics might someday be accessible to schoolchildren—feels both idealistic and achievable. By championing the idea that complexity should be a design choice, not an unquestioned default, Wood invites researchers, educators, and institutions to rethink how knowledge is structured, shared, and used.

In short, this essay opens a necessary conversation. It deserves to be widely read, seriously debated, and —most importantly—put into practice.

Declarations

Potential competing interests: No potential competing interests to declare.