

Manuscript No.: IJAR-58252

Title: STEM Curriculum Alignment in Israeli Grade 10 Secondary Education: A Qualitative Document Analysis of Mathematics, Science, and Biotechnology Curricula.

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality	✓			
Clarity	✓			
Significance	✓			

Reviewer Name: Dr. Mithilesh kumar shukla

Reviewer's Comment for Publication:

This study conducts a qualitative document analysis of Israeli Grade 10 curricula in mathematics, biology, biotechnology, chemistry, and physics to evaluate their alignment with internationally recognized STEM education characteristics. Using a validated binary coding rubric focused on five STEM indicators—engineering design, quantitative and computational reasoning, real-world contexts, inquiry and modeling, and collaboration—the research codes 362 instructional items across the five subjects. Results show considerable variation: biotechnology and physics demonstrate the strongest and most comprehensive STEM alignment, especially in inquiry, design, and collaboration, while mathematics and biology show limited integration beyond quantitative reasoning and inquiry. Chemistry occupies a middle position with moderate alignment. Major gaps are identified in engineering design tasks and collaboration, particularly in mathematics and biology.

Recommendation: Accept after minor revision,

Detailed Reviewer's Report

STRENGTHS:

- 1- The study provides the first systematic, multi-subject STEM alignment analysis of Israeli Grade 10 curricula across five disciplines.
- 2- The paper introduces and validates a replicable binary coding rubric grounded in established STEM education indicators,
- 3- The study identifies subject-specific strengths and gaps,
- 4- It offers a hierarchical comparison of STEM alignment across subjects, revealing that biotechnology and physics have the strongest integration,
- 5- : The study codes a substantial number of instructional items (362 across five subjects), providing robust data for analysis.
- 6- The study emphasizes authentic inquiry, real-world problem solving, and design thinking, aligning with best practices in STEM education

WEAKNESSES:

- 1- The study examines only the official Grade 10 curriculum documents and does not analyze textbooks,
- 2- The analysis is restricted to Grade 10 and does not cover Grades 11 and 12,
- 3- The research does not link curriculum alignment findings with student learning outcomes,