ISSN(O): 2320-5407 | ISSN(P): 3107-4928

ISSN NO. 2320-5407

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Manuscript No.: IJAR-56367

Title: VIRTUAL LABORATORY ASSISTED INSTRUCTION ON GRADE 7 STUDENTSÂ' PERFORMANCE AND INTEREST IN SCIENCE.

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	√			

Detailed Reviewer's Report

GENERAL ASSESSMENT

This study addresses a timely and relevant topic in science education the use of virtual laboratories as an alternative instructional strategy in resource-limited settings. The research is well-contextualized within the Philippine educational landscape, where inadequate laboratory facilities are a persistent challenge. The mixed-methods approach strengthens the study by capturing both quantitative outcomes and qualitative insights. Overall, the manuscript is well-written and makes a meaningful contribution to the literature on technology-enhanced science instruction.

MAJOR ISSUES TO ADDRESS

1. Sample Size and Matching Procedure

The study reports using "34 matched pairs" of students (Page 4), but it is unclear whether this represents 34 students per group (total N=68) or 17 per group (total N=34). The tables show N=34 for each group in the pretest/posttest comparisons (Pages 5-6), suggesting a total sample of 68 students. However, the text on Page 4 states "34 matched pairs," which would be 68 students total. This is consistent, but the phrasing could be clarified. The authors should explicitly state the total sample size.

2. Statistical Reporting

- Table 1 (Page 5): The t-values (1.02 and 1.40) and p-values (0.310 and 0.167) are presented clearly, but degrees of freedom (df) are not reported. Standard practice requires reporting df for t-tests (e.g., t(66) = 1.02, p = .310).
- Table 2 (Page 6): The p-value for post-intervention comparison is reported as 0.000. While this indicates statistical significance, p-values should never be reported as exactly zero. Use "p < .001" instead.

3. Table Formatting Issue

Table 3 (Pages 7-8) is severely malformed and unreadable in its current state. The table spans multiple pages with improper cell merging and incomplete rows. This must be completely reformatted for clarity. Consider:

- Breaking this large table into smaller, focused tables
- Using a landscape orientation if necessary

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

- Ensuring all rows and columns are properly aligned
- The note at the bottom (lines 212-213) is cut off and incomplete

4. Missing Qualitative Data

The methodology section (Page 4) mentions interviews and classroom observations as part of the qualitative component, but no qualitative findings are presented in the results section. If interviews were conducted, representative quotes or thematic analysis should be included to support the quantitative findings on student interest.

5. Incomplete References

- Page 9: References are inconsistently formatted
- Several citations in the text are not found in the reference list (e.g., Kennepool, 2001; Kocijancic, 2004; Tatli & Ayas appears in text but URL is truncated)
- The Batomalaque (2002) reference is incomplete
- Some references appear to be secondary sources but are not clearly indicated as such

MINOR ISSUES

1. Typographical and Formatting Errors

- Page 1: Line numbering appears in the text (e.g., "1 VIRTUAL..." through "23 23 INTRODUCTION")—these line numbers should be removed
- Page 4: "105 Research Design" is repeated twice
- Page 4: "115 Locale of the Study" and "123 Subject Participants" are repeated similarly
- Page 6: "As shown in the table 2" should be "As shown in Table 2"
- Throughout: Inconsistent spacing around punctuation

2. Methodological Clarifications

- The matching procedure is described (using Grade 6 science grades), but the specific matching criteria (e.g., acceptable score range for matching) are not explained
- The simple random procedure for assigning sections to groups should be briefly described
- Information about the virtual laboratory platform used (name, features, accessibility) is missing

3. Table and Figure Issues

- Figure 1 (Page 3) is mentioned but not actually included in the document
- All tables lack consistent formatting and proper titles
- Table 2 would benefit from including effect sizes (Cohen's d) to indicate the magnitude of the observed difference

4. Writing and Clarity

- Page 2, lines 57-72: The Scope and Limitation section is well-written but could be more concisely stated
- Page 5, lines 147-171: The discussion of factors limiting VLAI effectiveness is thorough but somewhat repetitive
- Some sentences are overly long and could be broken down for readability

SUGGESTIONS FOR IMPROVEMENT

1. **Reformat Table 3 completely**—this is the most critical revision needed. Consider presenting the data in a more digestible format, perhaps as a summary table showing only the key changes or as multiple smaller tables organized by theme.
2. **Include qualitative findings**—add a section presenting thematic analysis from interviews and observations to enrich the discussion of student interest.

ISSN(O): 2320-5407 | ISSN(P): 3107-4928
International Journal of Advanced Research
Publisher's Name: Jana Publication and Research LLP
www.journalijar.com

REVIEWER'S REPORT

3. **Complete and standardize references**—ensure all in-text citations appear in the reference list and follow a consistent citation style (APA is recommended).
4. **Add effect sizes**—include Cohen's d for all significant comparisons to help readers understand the practical significance of findings.
5. **Clarify the matching process**—provide more detail about how students were matched and any students who could not be matched.
6. **Discuss the virtual laboratory platform**—briefly describe the software used, its features, and any technical requirements.
7. **Add recommendations for practice**—based on the findings, provide concrete suggestions for teachers implementing VLAI, particularly regarding computer literacy preparation and time allocation.

STRENGTHS OF THE STUDY

- Addresses a relevant and practical problem in Philippine science education
- Well-designed quasi-experimental study with matched groups
- Mixed-methods approach provides richer insights
- Honest discussion of limitations and factors affecting outcomes
- Important finding that VLAI significantly enhances student interest even when performance gains are not immediate
- Practical implications for resource-limited schools

VERDICT

This is a valuable contribution to the literature on virtual laboratories in science education, particularly within the Philippine context. The study is well-conceptualized, methodologically sound, and addresses an important practical problem. The findings regarding enhanced student interest, even in the absence of immediate performance gains, have important implications for practice and future research.
However, the manuscript requires minor revisions before publication. The most critical issues are: (1) complete reformatting of Table 3, which is currently unreadable; (2) inclusion of qualitative findings to support the quantitative results; and (3) correction of incomplete references. Once these issues are addressed, the paper will make a strong contribution to the field.
Recommended Action: Accept after minor revision