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REVIEWER'S REPORT

Manuscript No.: IJAR-55230

Title: Innovative Teaching Strategies in Biology: Assessing Flipped Mastery vs. Flipped Classroom Learning

Recommendation:
Accept as it is ……YES…….
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. Javaid Ahmad Khan

Detailed Reviewer'sReport

This paper deeplyexamined the efficacy of Flipped Mastery Approach (FMA) and Flipped Classroom Learning (FCL) in helping 11th grade students grasp biology subjects based on differences in their previous knowledge levels. Abstract is given properly, the researcher has mentioned sample size and methodology very well. Results are also discussed deeply and all the findings are associated with statistical data properly. So this paper is in good format and can be accepted as it is.

Abstract

In this paper the abstract summarizes paper's purpose, methods, results, and conclusions comprehensively, using clear, active voice, avoiding citations, and also included keywords. Sample size and tools used for data analyzing all these things are given so this can be a good abstract.

Introduction

The introduction part in this paper iseffectively making linkage to the topic. Introduction part should grab attention, provide background context to orient the reader, and should contain the outline or roadmap of the paper's structure, here all of these things are present. But some content in introduction part is lacking the citations.

Statement of Problem

The researcher has mentioned the research gap and statement of problem in clear and way as to determine the effectiveness of flipped learning and flipped mastery learning approaches in biology achievement among eleventh-grade students.

Objectives

The researcher has mentioned the research questions in a proper way as 1. How does the implementation of Flipped Mastery approach impact biology achievement among eleventh-grade students? 2. Which

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method is better in the transaction of learning content in 11th grade biology – Flipped Classroom Learning (FCL) or FlippedMastery Approach(FMA)? 3. To what extent does Flipped Mastery Approach enhance content retention in biology learning for eleventh-grade students? 4. Does the interaction of teaching methods (FMA and FCL) and student's previous knowledge levels significantly affect their achievement in biology, as measured by post-test scores?

Methodology

Researcher has thoroughly mentioned the methods and tools for conducting this study and analyzing data. A quasi-experimental design was employed in the present study.The researcher selected anexperimental - control group, Post-Test design for the current investigation.

A. Independent variable • Flipped Mastery Approach • Flipped Classroom Learning
B. B. Dependent Variable • Achievement in Biology
C. C. Intervening Variable • Previous knowledge Level The intervening variable was controlled by administering a pre – test based on the 10th class syllabus on photosynthesis and respiration in the plants. Based onthe pre-test scores, students in each group were divided into three subgroups: low,average and high level (Stream, Mountain and Sky respectively).

Results

The result section is given in detail in this manuscript. Main findings such as Group 0 (experimental group taught by flipped mastery approach) maintains a higher mean of 56.5 and a median of 59.5, a standard deviation (SD) of 9.78 and a standard error (SE) of 1.263.Group 1(the control group taught by flipped classroom learning) exhibited a mean score of 54.8, a median of 54, with a lower SD of 6.45 and an SE of 0.832.These figures indicate that Group 0 outperformed Group 1 overall in the pre-assessment. The ANOVA results underscore the considerable impact of both the instructional approaches (Flipped Mastery ApproachandFlipped Classroom Learning) and participants' previous knowledge levels on total post-achievement scores.The t- value is 8.81 with a p- value <.001, showing that the impact is significant, all these findings are given in detail with statistical figures. But there is lack of educational implication of this research. It is not clearly explained that what will be the implications, what are the further suggestions etc.

Discussion

The discussion section has been discussed very good and all the results were compared with the previous studies and findings, However, the researcher has not provided the limitations of this researchby which the validity of research papers decreases and becomes less effective.

Conclusion

Over all the research paper is good, all the steps followed by the researcher well and has tried to justice with his research by leaving some small mistakes aside. This article can be accepted as it is.