

Review of: "Effects of Teachers' Professional Development on Students' Academic Achievement"

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Potential competing interests: No potential competing interests to declare.

The study shows the gaps wide spread and the attempts made to fill these gaps present in earlier interventions which exist without serious evaluation. It may hence give directions to theories contextualization and evidence-based policy-making on teacher professional development. Some important ideas and realities are pinpointed but essential points are under-explored. The study should however be reinforced, and the works underpinned for they exclaim insights on the effects of the correlation that exist among teacher professional development and students' achievement. This study should though redress its flaws and the author should take time and work hard to deal with certain critical points and comments suggested succinctly below based on the following sections and themes the study has posed.

Abstract

The implications and recommendations of the study to teaching and learning need to be succinctly extrapolated and discussed exigently in the abstract.

Research area

There a need for clear details that focuses on the area of the research and aspects of mathematics teaching and learning.

Indicators

Indicators that shows students' academic achievement need to be specified. The factors that influence students' achievement also need to be specified and illustrated.

Theoretical foundation

The study had followed a theory of continuous improvement in which its functionality need to be tested and assessed. In conformity with this theory, it should explicitly show what was planned; what was done; how they were assessed; what, where, and when actions were taken. Furthermore, it should clearly mediate certain confounding analysis and results regarding the correlation between teachers' professional development and students' academic achievements. The aim and design of the study should thus be clarified considering such principles.

There is also a requirement for strong theoretical underpinning that may possibly; for example, deal with:

- the concept of professional development and the necessity for it.
- mechanisms and strategies of carrying out professional development programs.

- contextual experiences in relation to the success and failure of certain programs.
- factors that influence students' achievement in mathematics learning.
- deeper exploration on the gaps existing in the literature that need to be filled.

Hypothesis

The factors that influence mathematics teaching and learning should be hypothetically enumerated and the study need to make insistence on certain principles like showing as there is no correlation between teacher professional development and students' academic achievement or as there is correlation between teacher professional development and students' academic achievement.

Methods

The study should present evidence on the interplay between qualitative and quantitative approach choices. It should establish strong analysis that connect these two methodological approaches. It is also required to thoroughly justify methodological scope and instrument utilisation (e.g. rationalising the questionnaire they used, if so) and evidently tell readers why the author used data through employing quantitative approach that made the study mere survey or exploratory. There is therefore a need for discussion on the methodological approach supported by the literature. The study need to include discussions on the limitations of employing quantitative approach.

Instrumentation

The study should specify the kind of instrument(s) used to collect data; discuss the logic behind its usage, how it was prepared, what the content of the instrument(s) was, and what the basis for preparing the contents used to measure the pretest and post test scores were. Most essentially, it should elaborate the evidence that enabled the study to be dependable and generalizable.

Discussion of findings

The study need to discuss the bases or criteria that indicate how and what is meant when we say a student has 'improved academic outcomes'. It should describe the methodology made use of to elucidate how the study can ensure dependability and generalizability through; for example, discussing about the validity and reliability of the instrument(s) utilized. It should also relate the findings to the theoretical bases discussed. Each step listed in this study as a theoretical foundation should be followed, implemented, and assessed.

Conclusion

Based on the theoretical and contextual realities, further discussions on the implications of the study and concluding remarks is highly required.