

Review of: "Influence of Motivation on Pre-service Primary Teachers' Performance in Mathematics"

Pavneet Kaur Bharaj¹

¹ Indiana University

Potential competing interests: No potential competing interests to declare.

Given the global challenges students face in mathematics, it's essential to explore factors such as motivation. Your paper, titled 'Influence of Motivation on Pre-service Primary Teachers' Performance in Mathematics,' aims to address the limited research on the link between motivation and mathematics performance in pre-service teachers. The study, involving 70 primary pre-service teachers, uses a correlational survey design to examine how motivation affects their performance in mathematics. While the concept is intriguing, it's crucial to acknowledge that this research is correlational, prompting considerations about using the term "influence." The abstract could provide more details about the study's purpose, survey methodology, timing, and rationale for selecting primary pre-service teachers. Moreover, it's advisable to adhere to institutional review board guidelines and maintain anonymity for participating locations.

I've observed a few general points throughout the article. While the theme of motivation is engaging, the research questions lack novelty as they are somewhat general and apparent. There is potential for improvement in the way references are cited, and it would be advantageous to follow the journal's citation guidelines. Ensuring consistency in the use of terms like 'students' and 'pre-service teachers' is necessary. Additionally, it is recommended to incorporate a literature review focused on pre-service teachers majoring in mathematics or science, as they are the main subjects of this research. My specific feedback for each section is as follows:

The author effectively sets the stage for the paper by emphasizing the challenges in teaching and learning mathematics, particularly students' poor performance. However, the connection between the identified problem and students' poor performance needs clarification. The distinction between intrinsic, extrinsic, and demotivation is clear, and recent studies are integrated. Yet, a more explicit synthesis of the literature, emphasizing gaps or controversies, is recommended. It might be beneficial to separate the literature review from the introduction for clarity. While the introduction is informative, the problem statement requires more explanation and literature support, preferably from recent sources globally. Discuss the relevance of studies on motivation and performance in university and school settings to pre-service teachers. Clearly delineate why focusing on primary pre-service mathematics teachers is crucial. Lastly, consider restructuring the introduction for a more balanced article flow, dividing it into concise and comprehensive sections.

I appreciate how you've highlighted the challenges in teaching and learning mathematics, with a particular emphasis on students' poor performance. However, there's a need for more clarity in connecting the identified problem to students' poor performance. Your distinction between intrinsic, extrinsic, and demotivation is commendable. Yet, to improve the literature review, I suggest a more explicit synthesis, focusing on gaps or controversies. Some sections seem to flow into each

other; consider achieving a more balanced flow with concise and comprehensive sections to enhance overall readability. Also, when discussing motivation, ensure that related citations are provided to strengthen your arguments by specifically focusing on preservice teachers.

Although your introduction provides information, the problem statement needs a more detailed explanation supported by recent sources. It would be beneficial to connect studies on motivation and performance in university and school settings to pre-service teachers, strengthening the relevance of your study. The paper lacks a clear identification of the literature gap it aims to address, making further elaboration on the criticality of this gap and how the study fills it essential for clarity. To offer a more nuanced understanding of the challenges, specifying factors responsible for students' failure in mathematics would deepen comprehension of the issue's complexity.

I have reservations regarding the methodological aspects of this paper. The use of a correlational survey research design may not align seamlessly with the concept of "influence." In particular, the sections related to the questionnaire—covering its content, instrument description, number of items, motivation indicators, psychometric properties—need further clarification for a more thorough understanding. I'm particularly intrigued by the trial-testing of the instrument (pilot study) and would appreciate it if you could provide this information to enhance reader comprehension. Consider including a copy of the questionnaire in the paper's supplementary section for readers. After reading the paper, I am still unsure about the details regarding the administration of the questionnaire. As a reader, I am keen to understand the characteristics of the population, the purposive sampling method employed, and the data instruments used in the study. There are lingering questions about how it was selected, raising concerns about its appropriateness. Overall, the study's procedure, data analysis, and the basis for P-values need more clarification. It would be helpful for the authors to reflect on potential limitations of their design for the reader's reference and to guide future research. Additionally, ethical considerations, such as informed consent and confidentiality, must be explicitly included in the methods section.

A more thorough overview in the manuscript's results section is recommended, encompassing the socio-demographic characteristics of the respondents. The results section requires additional elaboration and should not solely center on the correlation between motivation and performance. It would be advantageous to dissect the findings into more specific segments, aligning them with the questionnaire for a more concentrated analysis.

The authors should elaborate on the meanings of all the conducted statistical analyses. In discussing the positive correlation between motivation and performance, it is crucial for the authors to delve into the implications and role of extrinsic motivation in mathematics, exploring its impact on academic achievement and potential implications for educational practices. If the authors find correlations to yield interesting results, they need to specify how the demographics of this particular group of preservice teachers may contribute to these findings. As a reader, I expected to see the limitations acknowledged, along with practical and theoretical recommendations based on the research findings, which were notably absent.