

Review Form 1.6

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| Journal Name: | Asian Journal of Probability and Statistics |
| Manuscript Number: | Ms_AJPAS_90123 |
| Title of the Manuscript: | Walking Mathematics Students Through the Maze of Chi-square Test of Independence and Homogeneity, Test Involving Several Proportions, and Goodness-of-fit Test |
| Type of the Article | Original Research Article |

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<https://www.journalajpas.com/index.php/AJPAS/editorial-policy>)

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PART 1: Review Comments

| | Reviewer's comment | Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here) |
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| <u>Compulsory</u> REVISION comments | <ol style="list-style-type: none"> 1. The topic "4. Discussion" of this study could be broader. For example, a reader might wonder what active learning looks like through the case studies. In my view, there is active learning implicit in the interaction. The author(s) could explore argumentative opportunities and make this explicit during their analysis. There are also groups that are not described (for example, G14 or G 14" does not appear), which may be due to space reasons. However, reference is made to 14 groups in "Participants and Setting". Therefore, the results could summarize aspects related to the remaining groups not mentioned. Are there regularities and similarities? This is useful to enrich the discussion. 2. The main opportunity for improvement lies in enriching the discussion of the results. The author(s) could develop a deeper analysis of their results, specifically in relation to active learning. For example, in "Literature review" it is stated that "The constructivist theory states that concepts follow the actions and new experiences build on an already existing knowledge". How does this look in the present study? Why did the created environment facilitate collaborative learning? What regularities were appreciated in the discussions? I think that these three questions can help refine the discussion and enrich the analysis. | |
| <u>Minor</u> REVISION comments | <ol style="list-style-type: none"> 1. It is necessary to enrich the references with more recent articles. The field of mathematics education is very prolific and there are many works that can be cited, to enrich the state of the art and also to contrast the results with those obtained by other authors during the discussion. 2. In the first sentence, the statement that the chi-square distribution has a maximum value at infinity must be corrected. This function is bounded over its entire domain of definition. 3. Substitute the following reference in numbered form and within square brackets: (Cooperstein & Kocevar-Weidinger, 2004). 4. Replace "Q 1", "Q 2", "Q3", and "Q 4" with "Question 1", "Question 2", and so on. This makes the text easier to read. 5. Capitalize "use theorem 2 that says" like so: "use Theorem 2". Theorem 2 should be presented in a more formal way, as is done with Theorem 1. This is important, since in the abstract of the article it is made explicit that the research is based on theorems and definitions. 6. Standardize the use of points in the figures (for example "Fig", "Fig."), as well as the reference to the tables, since capital and lowercase initial letters are used indistinctly. 7. Based on reading the article, it is not entirely clear from the conclusions what "working with examples" is. On the other hand, the conclusions address the issue of the student's emotional growth, which has not been fully addressed in the discussion and does not trivially emerge from the cases studied. These aspects need to be better specified. 8. In the abstract and in the implications to teaching and learning, reference is made to "theorems and their related proofs". The aspect of demonstrations is not explicitly addressed in the present study. Therefore, I recommend removing this allusion to proofs of theorems, or enriching the article with this aspect. | |
| <u>Optional/General</u> comments | <ol style="list-style-type: none"> 1. In the description of the notations used for the members of each group (for example, "G1 = A member from group 1; ...; and G14 = A member from group 14 respectively"), try to be more synthetic. I suggest describing it like this: For the purposes of this study, the following pseudonyms were used for the participants: L = Instructor, and $G_i =$ a member from group i ($1 \leq i \leq 14$). Also, in G11, ":" is used instead of "=". 2. Table 1 is similar to others that appear in statistics textbooks. A Ghanaian school textbook could be selected, and the reference (or source) placed in a footnote to the table. 3. Achieving greater precision in "The vignette below shows the lecturer assisting the students to apply the concept the chi-square concept" sentence, since the vignette does not appear immediately, but Table 1 only. The explanation, although it appears below, is framed within the following heading (3.0 Procedure and Results). | |

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PART 2:

| | Reviewer's comment | Author's comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i> |
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| Are there ethical issues in this manuscript? | <i>(If yes, Kindly please write down the ethical issues here in details)</i> | |

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|----------------------------------|------------------------------------|
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