Deconstructing a Scientific Research Article

SURVIVAL SKILLS FOR GRADUATE STUDENTS

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The goal of this guide is to provide some general questions and issues to assist students as they read the research literature. This is not an exhaustive list and you may need to examine other issues related to your article.

Research Problem (General Considerations)

- Does the author provide a summary of the larger problem under study and the specific problem under investigation? Are the problems significant in terms of the theory referenced? Is this a significant problem from a practical or applied perspective?

- Does the literature review provide the necessary framework for the reader? Can you see how the problem under study relates to the broader discipline through the literature review? Is the literature review current and using contemporary materials? Are there any biases represented? Is the review complete?

- In the references or bibliography, are the citations accurate, in an appropriate style, and complete?

Problem Statements

- Research Question: are the research questions explicitly stated and identified? List the research questions.

- Variables: list the variables used in the study. Does the author define the variables and do the definitions make sense to you?

- Hypotheses: are the hypotheses explicitly identified in the research? Are they stated as the null hypothesis? List hypotheses tested, if any.

- Causality and Variables: are causal relations among variables being tested in this study? Is so, identify independent, dependent, and (if they exist) intervening variables.

- Assumptions: identify assumptions that are stated explicitly by the author. Do you agree? What implicit assumptions exist? These might be determined by examining the way the problem is framed by the author or the theoretical context used. Do you agree with the implicit assumptions?

Methodology

- General: summarize the methodology used by the author. Are the methods used consistent with other research cited in the article? Could someone replicate the research, given the information presented?

- Bias: is there any bias in the design?

- Sampling: how was the data collected? Was it obtained from a sample of a population? If so, identify the population and describe how the sample was selected. Does the sample adequately represent the population?

- Descriptive Statistics: is the data reported clearly? Are the tables and figures clearly labeled and identified? Is it clear what, if any, manipulation was made to the data or figures used in the article?

- Inferential Statistics: identify inferential statistics used, if any. Were the appropriate tests conducted? If null hypotheses are tested, does the researcher indicate whether the hypotheses could be rejected and at what level of significance?

Results and Conclusions

- Results: what are the findings of the research?

- Conclusions: what are the conclusions of the study? To what populations are the findings generalized? Are the conclusions supported by the study as reported? What are the implications of the findings of the study?

- Limitations: does the author acknowledge limitations to the research? If so, what are the limitations? Does the author make suggestions for additional research?

Other Considerations

- Is the title appropriate for the article?

- Does the abstract accurately reflect the article's content?

- Overall, how well is the article written? Are there grammar, spelling, or editing mistakes?

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