Quality of Writing of Discussion and Drawing Conclusion in Relation to Interdisciplinary Research

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Abstract:

Interdisciplinary research is an approach of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts and theories from two or more disciplines to solve problems whose solutions are beyond the scope of a single discipline or area of research practice. It involves researchers, students and teachers and incorporating several academic schools of thought, professions or technologies along with their specific perspectives in the pursuit of a common task. The basic format for interdisciplinary research report constitutes Introduction, Methods, Result and Discussion. Cherry (2010), found that researchers who used the term Discussion would use the term Conclusion to mean the end product of their discussion and it considered a very long writing section then added a short separate conclusion section at the end. This section is one of the hardest to write, many research papers are rejected due to a faulty discussion or because the interpretation offered does not do justice to the results. Extra effort is needed to endorse the shape of interdisciplinary research from different disciplines to merge expertise from several knowledge domains and to overcome the problems of writing of discussion and drawing conclusion in relation to this research.

Keywords: *Drawing conclusion, Interdisciplinary research, Writing of discussion*

1. Introduction

Interdisciplinary research viewed as twentieth century terms, the concept has historical setting, most notably Greek philosophy. Julie Thompson Klein (1991), demonstrated that the roots of the concepts lie in a number of ideas that resonate through modern discourse the ideas of a unified science, general knowledge, synthesis and the integration of knowledge while Giles Gunn (1992), said that Greek historians and dramatists took elements from other realms of knowledge such as medicine or philosophy to further understand their own material. Interdisciplinary researches sometimes arise from a shared conviction that the traditional disciplines are unable or unwilling to address an important problem. An initial distinction should be made between interdisciplinary studies, which can be found spread across the academy today and the study of interdisciplinary research which involves a much smaller group of researchers. This kind of research is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and theories from two or more disciplines of dedicated knowledge to move on fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice. It is about forming somewhat novel by crossing borders and judgment across them. This kind of research crosses traditional borders between academic disciplines or schools of thought as novel wishes and professions have emerged. Interdisciplinary research may be initiated in order to assist the study of subjects which have some coherence but which cannot be adequately understood from a single disciplinary perspective. Originally, the term interdisciplinary is applied within education and training pedagogies to describe studies that use methods and insights of several established disciplines or traditional fields of study. Interdisciplinary involves researchers, students and teachers in the goals of linking and incorporating several academic schools of thought,

professions or technologies along with their specific perspectives in the pursuit of a common task. Interdisciplinary research results in new solutions to problems, much information is given back to the various disciplines involved. Perhaps the most common complaint regarding interdisciplinary research by supporters and detractors alike is the lack of synthesis that is, students are provided with multiple disciplinary perspectives but are not given effective guidance in resolving the conflicts and achieving a coherent view of the subject. At one more level of interdisciplinary research is made out as a therapy to the harmful effects of excessive specialization. On some views however, interdisciplinary research is entirely indebted to those who specialize in one field of study that is without specialists, interdisciplinarians would have no information and no leading experts to consult. Others have argued that the very idea of synthesis or integration of disciplines presupposes questionable politico-epistemic commitments. Critics of interdisciplinary research feel that the ambition is simply unrealistic given the knowledge and intellectual maturity of all but the exceptional undergraduate; some defenders concede the difficulty but insist that cultivating interdisciplinary as a habit of mind even at that level is both possible and essential to the education of informed and engaged citizens and leaders capable of analyzing, evaluating, and synthesizing information from multiple sources in order to render reasoned decisions.

2. Rational of the Study

The basic format for interdisciplinary research report constitutes Introduction, Methods, Result and Discussion. This format sometime called "IMRAD" may take slightly different shapes depending on the discipline. The most important part of the research report is the descriptions, analysis and interpretation of data. The final chapter of interdisciplinary research report brings the research together and provides an interpretation of the results. Once a researcher has designed the study and collects the data, it is time to examine this information and draw conclusions about what has been found. Using statistics, researcher can summarize the data, analyze the results and draw conclusions based on evidence. Davies and Devlin (2007), found in their study that interdisciplinary research approaches provided ways of focusing on problems based on writing discussion or drawing conclusion that were too complex or too expensive to be tackled by a single discipline. Shuttleworth (2008), found that drawing a valid discussion and conclusion was to ensure that the deductive and inductive processes were correctly used and that all steps of the scientific method were followed.

The last section of the report is usually called the Conclusion (s). However, researchers also use the title Discussion. Wagenen (1990), revealed that the discussion section was where the researchers interpreted the results to reach its major conclusions. This was also where the author's opinion entered the picture i.e. the discussion was where the argument was made. Cherry (2010), found that researchers who used the term Discussion would use the term Conclusion to mean the end product of their discussion and it considered a very long writing section then added a short separate conclusion section at the end. Alternatively, consider writing a 'Discussion and Conclusion' section. The term conclusion or discussion point to the same thing: a section where results are discussed and interpreted. Moore (2011), revealed that how to write a conclusion for a research paper was a prime error therefore, conclusion should return to the opening and examine the original purpose in the light of the data assembled in the research. Lakhani, Benzies and Hayden (2012), found that interdisciplinary research refers to the collaboration of researchers from various disciplines to solve a common problem. To represent the sound report, researcher faced various problems either to write introduction or conclusion.

Interdisciplinary research does not occur automatically by bringing together several disciplines in a research. The purpose of this section is to highlight the major statistical results and interpretation. Basically the discussion moving from specific to general (Hamediseresh, 2009). This section is one of the hardest to write, many research papers are rejected due to a faulty discussion or because the interpretation offered does not do justice to the results. Extra effort is needed to promote the formation of a cohesive research from different disciplines to combine expertise from several

knowledge domains and to overcome the problems of writing of discussion and drawing conclusion in relation to interdisciplinary research. Interdisciplinary researches contribute challenging perspectives, as it allows a problem to be studied from different angles. The motivation for conducting interdisciplinary research is very often interest in a problem to write discussion and drawing conclusion rather than writing introduction and methodology. As problems become increasingly complex and intertwined, the need to this study was an attempt to bring out the knowledge and skills of researchers for developing the quality of writing of discussion and drawing conclusion in relation to interdisciplinary research.

3. Statement of the Problem
The present study was stated as:
"Quality of writing of discussion and drawing conclusion in relation to interdisciplinary research"

4. Conceptual Framework
4.1 Discussion of Results
The discussion section of the interdisciplinary research takes a broad view of the research and puts it in a wider context. The discussion section moves from the narrow specific focus of the interdisciplinary research to a more general view (Marion, 2004). It clearly show how the results found lead to the conclusions being drawn and therefore, how these conclusions understood. This includes any limitations that might cause problems with any claims being made as well as any possible explanations for these results. This section might be called Summary of Findings.

4.2 Drawing Conclusions
Conclusion is the final section of the interdisciplinary research paper. It draws everything together in interdisciplinary research and trying it into initial research. Writing a conclusion involves summing up the paper and giving a very brief description of the results. The conclusion section is the logical outgrowth of the results section, whereas the focus of the discussion is interpretation of the results (Shuttleworth, 2009). A conclusion section refocuses the purpose of the research, revealing a synopsis of what was found and into the implantations of the findings. A conclusion may also include limitations of the study and future research needs. Anybody reading the conclusion has read the entire paper, so the conclusion merely acts as an aid to memory. It leads the implications of the findings, limitations of the study and future research needs.

5. Purposes of the Discussion
- To answer the research question.
- To show how the results support the answer.
- To show relationships among results.
- To show relationship of results to other studies.
- To draw conclusions.
- To explore the theoretical or practical implications of findings.

6. Structure of Discussion
- At the beginning, state the aim.
- Give a brief summary of the result.
- Give the main point and the strongest arguments before the others.
- Present the main conclusion again in the final paragraph based on findings.
- Avoid prove.
- Use show, demonstrate, indicate, support, suggest, imply and appear.
- Hedging terms such as may be, might be, could be, probably, possibly, may be used as needed, but avoid using too many hedges in one sentence.

- Use past tense for results.
- Use present tense for outcomes: the answer to the research question, facts, and current situations.

7. Procedure to Write Discussion
- Explain whether the data support hypothesis.
- Present the main trends, the relationships among trends and generalization of trends.
- Any conclusions must be stated clearly.
- Avoid merely restating the material.
- Relate findings to earlier work in the same area.
- Discuss any differing results and attempt to explain them.
- Explain agreements or disagreements between work and other published studies.
- Do not try to hide data that are differing the conclusions. Give explanations.
- Give evidence for each conclusion.
- Defend the conclusion but be respectful to opposing studies.
- State the limitations of design.
- State the important implications of the study.
- Verb and Tense must be used: Abstract >>> Past tense, Theory >>> Past tense, Methods and Materials >>> Past tense, Discussion >>> Alternates.

7.1 Precaution to write Discussion
- Emphasize the new and important aspects of the study.
- Compare and contrast the results with other relevant studies.
- State the limitation of study.
- If method is new, explain more and try to defend it.
- Be sure that all conclusions are supported by results.
- Make it clear that, are the major hypotheses in the field supported by research or contradicted?
- Although there may be some repetition of information in the results and discussion section, it should be kept to minimum.
- Point out any exception or any lack of correlation.

7.2 Procedure for Writing Discussion of Results
- Discussion part is not for review of literature.
- Don't write whole and long criticism on previous researches.
- Don't omit other previous good evidences to show the study is unique, don't magnify it!
- Avoid making statements on data and analysis.
- Keep the discussion up to the results, don't go beyond data.
- Don't explain the concept more than what is necessary.
- Don't be shy! Discuss the theoretical implications and practical applications of work.
- Don't hide unexpected results.
- Don't ignore or bury the major issue.
- Don't over generalize.
- Be direct; avoid qualifying phrases such as "it appears that…" or "our data suggest that…"
- Words like "supported", "indicated" and "suggested" are more acceptable ways to evaluate hypothesis.

8. Purposes of Drawing Conclusion
- To examine the results.
- To determine whether results solve the research question.
- To compare results within themselves and to other results (from literature).
- To explain and interpret results.

- To draw conclusions or derive generalizations.
- To make recommendations for applying the results or for further research.

8.1 Structure of Drawing Conclusions
- Review of objective(s).
- Review of method.
- Review of major findings (results).
- Explanation/interpretation of findings.
- Limitations.
- Implications.
- Recommendations.

8.2 Procedure to Write Drawing Conclusions
- Keep this section as short and concise as possible.
- Conclusions must be stated clearly in brief, Conclusions must be stated clearly in brief, one or two paragraphs may be enough.
- Do not simply restate the results. This is the place to interpret/discuss them.
- Point out exceptions, limitations and any lack of correlation.
- Define and clear up anything that may be unclear.
- Do not take the risk of covering up any deficiencies and limitations.
- If interpretations and results agree or contrast with other researchers has done, refer the literature.
- Don't be shy; discuss the theoretical implications of work as well as any possible practical applications.
- Don't add any new details, graphics or results.
- Summarize evidence for each conclusion.

8.3 Precaution for Writing Drawing Conclusions
- Each conclusion must be in brief.
- The focus must be given on importance, validity of results, limitations of the study.
- Each conclusion must be well supported by information in the research.
- The main conclusion must be written first.
- Avoid too vague word or sentences.

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