

The Effects of Music on Physical Activity and Academic Performance Lab Report Analysis

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Introduction

This lab report analysis describes the similarities and differences among three reports. The analysis approach will compare and contrast each section of all lab reports separately. There will be a thorough examination of each section, the organization of information, and whether any information was appropriately used. The subject of research was music and its effect on the human body. The following lab reports will be referenced throughout the analysis by their assigned numbers.

Lab #1: *The effects of different music genres on physical performance* by Z. Belford, C. Neher, T. Pernsteiner, J. Stoffregen, and Z. Tariq was written at the University of Wisconsin in May of 2013. This lab report focuses on how different genres of music can affect the physiology of a person including heart rate, electrodermal arousal, and maximum grip strength. Lab #2: *The impact of music on the academic performance of undergraduate students* by P. Rajab and M. Pitman was written in the Spring of 2019. This lab report emphasizes on how music can affect a student's academic performance such as recollection and encoding new information. Lab #3: *Music and Memory: Effects of Listening to Music While Studying in College Students* was written by Lara Dodge, a student in the Honors College of the University of Wisconsin-Stout, alongside professor M. Mensink, Ph.D. Lab #3 has similar concepts tested in Lab #1 and Lab #2; the authors experiment with music genres and how it affects the cognitive behavior of college students. A standard lab format will be broken down below into sections with headings that explain how each report approached the same topic.

Abstract

The abstract is a brief summary of the report. The author typically presents the objective of the experiment, provides short details about the procedures, and any key findings. In Lab #1,

the authors chose to write their key words before the abstract. Also, the authors began the abstract by asserting the hypothesis and providing the results of the investigation for a clear clarification of the experiment. However, no procedures about data collection were defined in the abstract but were later mentioned in the method section. This is a major impact in the organization of their information. If readers don't have any information about the procedures in the beginning of the lab report, how are they supposed to follow along with the experiment? The audience doesn't know how the data was derived.

Lab #2 doesn't have any abstract written. The readers don't have a general understanding of the objective or information about what they are about to read. This can be overwhelming for readers because the report doesn't provide selective details about the experiment. It doesn't allow the reader to decide whether it's worth their time to read the lengthy report. Lab #3 has an abstract, but no hypothesis is given. Authors Dodge and Mensink only explain a type of method used and its outcome. Unlike Lab #1 and #2, Lab #3 gives a brief description of the procedure which can allow readers to understand the setup of the experiment. Overall, Lab #1 and #3 had the best abstracts written, but the lack of an abstract in Lab #2 prevents the reader from deciding if the report will interest them.

Introduction

The introduction of a lab report establishes the purpose for doing the experiment. Its main focus is to bring the reader's attention on the exact subject of the report. The introduction sets the tone and path for the paper. Lab #1's introduction is about a page long, very comprehensive. The authors relate back to the research they did and talk about what the study aims to prove. All five authors explain each physiological component, including what it is and how it will be tested in the experiment. This was necessary due to readers having no prior knowledge of the subject.

In Lab #2, the introduction is one paragraph long that expresses the research. Authors Rajab and Pitman only explained past research that focused on their subject. The lack of originality and constant repetition of citations in the beginning of an abstract-less report continues to derail the readers attraction to the report.

Lab #3's introduction is an excruciating five pages long. Dodge and Mensink heavily describe detailed methods and procedures in their introduction, which is not the appropriate location for this information. It was not a suitable placement because there is already a separate section in the lab report where this information is to be written. Also, the information in the introduction gives away the whole experiment. There is no element of surprise left to spark the readers interest to further read the report. Overall, Lab #1 had the best introduction.

Methods & Procedures

The method section of the lab report provides a clear and precise description of how an experiment was done, and the rationale for why specific experimental procedures were chosen. The reader should be able to read your procedure section and imitate the test/experiment exactly.

The authors in Lab #1 specifically explain the subjects of the experiment. They provided the number of students who participated and their age ranges. In addition, the authors thoroughly explicate the procedure that took place. The authors were so descriptive that anyone can reproduce the same experiment. Lab #2 doesn't indicate the number of subjects used nor their ages. Rajab and Pitman explain the experiment but don't provide specific details about their procedure. The assessment wasn't formally explained in writing but is visually illustrated through the figures. This is a disadvantage to the readers because it forces them to flip back and forth to the figures to understand what Rajab and Pitman are talking about.

In Lab #3, the authors provide the same information as Lab #1. Their explanation of the procedure was clear and concise, this allows readers to follow along without uncertainty and replicate the experiment without hesitation. Overall, Lab's #1 and #3 had the best method section.

Results & Figures

In this section, the author is to report the test's outcome(s). Here, the author is supposed to tell the readers what the test measured, including any calculations or equations.

Lab #1 concluded there is still a discrepancy between whether music affects physical performance. All five authors of Lab #1 provide valid results, including clear explanations of the figures they formulated using their research. The eight figures each have their own description below it, allowing readers to understand what they are looking at.

Lab #2 concluded that students performed worse on their assessment whilst listening to their choice of music. The figures in Lab #2 do not have any details written about them. The absence of an explanation for the graphics doesn't help readers digest the information. Without prior knowledge, readers won't understand the visuals. Any graphics used in a lab report should be detailed enough such that an explanation wouldn't be necessary.

Lab #3 concludes that participants assigned to read a test in silence produced more correct answers than those in the music condition group. In addition, Lab #3 also provides figures with proper labeling and keys for readers to understand the graphs, similar to Lab #1. Although Lab #3 doesn't have any descriptions about their figures, with informative labeling and notation, it was clear to know what the figure was about. Overall, Lab's #1 and #3 had the best results and figures.

Discussion

In the conclusion, the author is to comment on the outcomes of the test. They might also speculate about the implications of the results. Lab #1's conclusion is about two pages long. All authors thoroughly explain the outcomes of the experiment. In addition, the authors try to describe any problems that could've affected their results. This is appropriate for the conclusion because it makes the reader know the students who did the experiment are aware of their mistake.

In Lab #2, the authors discussion section is quite short. Rajab and Pitman say the outcome of the experiment with very little support. This shows their incompetence to explain their understanding of the results. Lab #3 repeats the hypothesis and followed by details about the outcome of the experiment. This makes the most structural sense because it reminds the reader what the authors thought would happen. Similarly, to Lab #1, Lab #3 provides a variety of outside factors that may have swayed the results of the study. Also, Dodge and Mensink provide suggestions that would reduce the amount of outlier influences.

Overall, Lab's #1 and 3 had the best conclusions.

References

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