

Lab report analysis

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Memorandum TO: Emma Mackenzie, Writing Instructor; Montana Tech FROM: Sarah Hambidge, Montana Tech Student DATE: 6 November 2012 SUBJECT: Lab Report Analysis This memo proposes the observations and claims I collected from reviewing three different lab reports. Three fields of study are composed within this memo that includes Electrical Engineering, Environmental Engineering, and Petroleum Engineering. “ Electrical Filters,” (Electrical), written by Joe Schmoe, is a lab report made by a student at a university.

The College Board produced an environmental lab report named, “ Monitoring Air Quality,” (Air), for the purpose of student education as a lab template. Monitoring Air Quality was written by Dr. Angela C. Morrow who graduated from the University of Northern Colorado. Within the Energy Engineering field, I found, “ NETL Extreme Drilling Lab Studies high temperature drilling Phenomena. ” (NETL). This lab was created by the U. S. Department of Energy and was found in the work of the U. S. Government. This lab report was written by K.

David Lyons, Simone Honeygan, and Thomas Mroz. All three lab reports’ features have been compared and contrasted using analytical techniques in this memo. Observation of Whole Document All three documents are close in terms of length of paper. They are in the range between 6 and 9 pages long. The NETL Drilling High Pressure High Temperature Drilling Phenomena and Electrical Filters lab reports have 4 or 5 figures to represent the purpose of the lab report. The Air Quality lab only has one figure, a picture of a tree.

College Board’s Monitoring Air Quality figures were labeled underneath the pictures in regular font. The petroleum lab report used bold lettering

underneath the figures. The electrical report's figures were labeled with italics underneath the picture as well. * Paragraph styles All three labs differ strongly when it comes to the style of how the paragraphs were written. Drilling lab reports within Petroleum Engineering are most elaborate and long. The petroleum lab report has 3 paragraphs in the Abstract section while the other two reports have one short paragraph.

The Petroleum lab includes specific numerical details such as different depths, fluid pressures, and temperatures. The other reports did not include quantities inside the opening paragraph that is why Drilling labs are more elaborate and precise when it comes to representing information. As a reader is reading the NETL Drilling Lab, they could be more confused than reading the other two labs. The quantities are not explained how they are derived very well, so this could result in a comprehension problem for a basic reader.

I think this would make a reader with basic comprehension levels frustrated.

* Headings According to the example lab report(Doyoyo, 2002), paragraph titles should follow this format in order of title page, Abstract, Experimental Procedure, Results, Discussion, Conclusion, Appendices, and References. The lab report composed by the College Board follows this format most concisely. The College Boards paragraphs are titled Abstract, Objectives, Introduction, Materials, Procedure, Data/Observations, Analysis, and Additional Resources.

The procedure in this report is quite long because it has 3 sub headings within it that precede three different subjects. The analysis goes quite in depth as well and has 2 different parts in it. The electrical lab report follows a similar paragraph order; Objective, Background, Experiment, Results,

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Conclusion, and References. The background paragraph is 2 pages long; this is longer than any of the other documents. I believe in order to completely comprehend this document, you would have to know a great deal of background and have experience in this field.

The petroleum drilling lab report also follows a different format; Abstract, Introduction, Acknowledgments, and References. The NETL Drilling lab stands out from the rest of the labs too because between the introduction and acknowledgments, there are 4 paragraphs that explain descriptions, efforts, and future plans. This lab is farthest from following the standard lab report format. The NETL Drilling Lab was written by the government so they may follow a stricter lab format than they teach in schools. They might make up their own order of headings and paragraphs because they are on top of the chain. Font choice The NETL lab Report uses ten point font in Times New Roman. The Electrical Engineering lab Report uses Times New Roman as well but its double spaced and typed in twelve point font. The environmental lab uses Calibri with twelve point font and multiple spaces between every paragraph. The NETL lab is the most professional looking lab because it looks formal and fits more information within a page than the other labs. A reader could get the most information out of the NETL lab because it is constructed elaborately but also concisely. Overall tone The NETL lab has by far, most formal tone of voice. The lab created by the College Board is built for mainly educational purposes; therefore it uses a smaller vocabulary for easier understanding. The Electrical lab report was made by students so it's not that complex. The NETL lab is professional because it is a work of the government. This lab uses many big words, acronyms, references within

text, and many numerical conversions. The lab written by students has the least informal tone, most likely because they are least educated.

Reading the Electrical Filters Lab could leave a reader lost in some places, and readers may want to read a different lab on Electrical Filters written by a doctor or someone with a professional degree. * Repetition The College Board lab report uses repetition the most because it was created by doctors and doctors are very precise with representing information. It often repeats, “ Please see AP’s licensing for AP Questions and Materials. ” It also repeats, “ Clean Air Act,” “ NAAQS,” “ gypsum,” and “ air quality laws. ” Within the procedure the paragraphs are repetitive as well.

The Electrical lab is the least repetitive but it did repeat input and output signal values. The petroleum lab repeats drilling terms and the process of deep drilling. I think the repetition in all of the labs was necessary because a basic reader would need to be reminded of the information to smoothly flow through reading the documents. Sections The sections within the 3 lab reports differ in body. Some are more like Markel’s sample (Markel, 2010) than others. * Abstract The petroleum lab and environmental reflect the major focus of the lab well.

The abstract concisely communicates the purpose of the lab, the approach, the results, and the significances of the findings. The electrical lab doesn’t have an abstract but sometimes instructors do not require an abstract section. The environmental lab does a better job at writing the abstract because it’s shorter and more direct to the point, therefore easier to understand. * Introduction The petroleum lab does the worst at the

introduction. Markel (Markel, 2010, ch10), says the purpose of the lab is clearly stated. The petroleum lab is sort of confusing.

It says, " The purpose of this paper and industry projects [1-5] deep wells are defined as wells drilled for oil and gas having true vertical depth (TVD) greater than 15, 000 feet (4572 meters.)" The electrical report is more to the point, for example, " The objective of this lab is to build and test a first order, low-pass filter with resistors and capacitors. " The Environmental lab's purpose statement is, " At the end of this lab, you will be able to describe and discuss several air pollutants and methods for detecting them. The environmental lab is a lab template so it is written in a future tense format rather than past tense like the other labs. Conclusion In reading this memo, I hope you understand my findings an key points about the three lab reports I analyzed. Electrical Filters, by Joe Schomoe, was poorly written compared to the other lab reports. It did properly use its figures and the abstract section was written correctly. This document was hard to read because the background was very long and in depth. This document also was least appealing to the eye because the lack of professionalism.

College Board's Monitoring Air Quality overall did well as serving the major purpose as a lab template for students. However this lab needs more figures and pictures because it only has one figure. The College Board also followed Markel's lab format the closest. The repetition used by this lab made the whole document flow more as reading. The NETL Extreme Drilling Laboratory Studies High Pressure High Temperature Drilling Phenomena, is the most professional and formal written document compared to the other two labs.

It did not follow the normal lab report format, but it contained many helpful figures and tables. This lab can be confusing because it is so complex, but most information and data can be obtained from reading this lab report.

References * Doyoyo, September 19, 2002, 13. 014J/1. 052J “ Helpful instructions on how to write a mechanics lab report. ” * Markel, 2010 Chapters 6, 7, 9, 10, 18, Appendix B related to APA documentation * Unit 3 Topics Checklist * (Electrical)