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2 Technical Writing Assignment: PART-A

DNA IV

1 The topic of "error" as it relates to forensic science has been of significance since the Daubert decision in 1993. ^[1] In 2009, the National Academy of Sciences' (NAS) National Research Council report, "Strengthening Forensic Science in the United States: A Path Forward" has been published. After years, NAS report emphasized scientific and technical challenges are the main concern. The statement expressed interest about some disciplines lacked scientific accuracy and a vital need for "more and better research" and gave several approvals to advance the state of forensic science. As per report recommendation, three states research is needed to address issues of accuracy, reliability, and validity in the forensic science disciplines. Reliability is discussed frequently in this study and scientifically, the term reliability is used to express the degree of inconsistency in observations between different viewers and includes how well the method can be frequent. Reliability creates how good a technique can be repeated, but it does not mean that the method will produce optimal decisions. The authors note that the use of "reliability" in the Daubert case seems to be mistreated, and that "dependability" is what the court planned. Dependability, in a scientific manner includes reliability and validity. Only reliability not able to form validity. Validity is very simply defined technique. A method that gives accurate conclusions more frequently than what is measured random chance, will be considered effective. This concept is why method validation studies are necessary for novel techniques and applications in science. Validity of a method is an important aspect of establishing suitability. To show the validity of

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a method, a known or projected error rate can be used. Methods with big error rates will be measured to have low validity, and low error rates will have higher validity. ^[1]

Practitioner error is mainly caused by human and different from scientific error. Scientific error contains instrumental, statistical, and method error. Statistical and method error are main donors for the determination of error rate. Many misinterpretations remain in understanding error. It is essential to the proper execution of error rates that these misunderstandings are understood and avoided. ^[1]

Method error is due to essential limitations of a given method that is not relating to instrument error. Usually, it is due to overlay of measurements or the frequency of an experiential feature in the large population. These limitations are not errors, but they affect the sensitivity, resolving power, probative value, and ultimately impact the validity of the method. Method error approximations are normally the most usual of all errors. Error of a method cannot be minimized, since it created from inherent limitations of the method itself, but well approaches can be established. Generally, in the determination of acceptability, error rates are determined primarily from statistical and method error. Well researched methods with proper method design and appropriate statistical models can help to deliver valid and reliable scientific methods. ^[1]

As error is a basic part in the determination of validity, that effects acceptability by Daubert criteria, the idea is often misunderstood. Accepting the sources of error and avoiding misunderstandings in error are important to correct use of error rates in admissibility conclusions. ^[1]



Reference:

- ¹ Christensen, A. M.; Crowder, C. M.; Ousley, S. D.; Houck, M. M. Error and its meaning in forensic science. *Journal of Forensic Sciences*. 2014, 59 (1), 123-126. [Accessed on: Jan 28, 2019]. Available from: <https://pdfs.semanticscholar.org/781e/55a32cb43d8000311dd79f79eacf9adf16ee.pdf>

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<500 words, proper grammar, spelling, verb tense, BTF checklist and rough draft complete

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Intext referencing used consistently in proper format, all references at the end are in proper format, all references match intext and reference list. Format and references are done following CSE style. All sections that require an intext reference are done correctly.

SUMMARY

Complete summary of key points and main ideas from the article, shows a complete understanding of the article and not missing any components, follows a logical sequence and not repetitive, a very clear distinction between a summary and review. Written so it is clear concise and accurate - not confusing or not using words that do not make sense

REVIEW

Picked a key point or idea from the article to focus the review on, not just repeating what was covered in the summary, uses other literature or references to back up their ideas, follows a logical sequence and flow with main point(s) easily identifiable and not covering too many points.