

Why UCSD Should Correct the Deeply Flawed Audit of the Preuss School

January 15, 2008

Dr. Marye Anne Fox,
Chancellor, University of California San Diego
Dr. Cecil Lytle,
Chair, Preuss School Governing Board

Dear Dr. Fox and Dr. Lytle:

As researchers committed to advancing the science of learning and educating, we have had extensive interactions with Dr. Doris Alvarez. Her experience, dedication, and leadership have been of extraordinary value to us, and have helped bring together scientists and educators towards the goal of transforming the educational practices in our nation. In order to assess the appropriateness of continuing our scientific collaboration with Dr. Alvarez we engaged in a thorough review of the Preuss School Audit Report.

It appeared to us that critical parts of this audit may be technically flawed and that the information and the conclusions highlighted in the report may not be supported by the data. For example, it remains possible that the errors in the Preuss transcripts may have occurred at very small rates, not significantly different from other schools, and that the bulk of these errors may have been the result of unintentional random mistakes. In addition to the quantitative issues, we also have reservations regarding the testimonial data.

We are concerned that the UCSD Administration, the Preuss Board of Directors, and the press may not have been sufficiently aware of the flaws of

this audit, and that this may result in unjustified damage to the reputation of Dr. Alvarez, the Preuss School, and UCSD. We decided to make this document available to the public since the conclusions that appear in the audit and were echoed in the press may have been premature and unjustified.

We respectfully request a reopening of the audit, in order to evaluate and rectify potential errors contained in the document. The outcome of the audit holds large implications, thus it is the responsibility of the Preuss Governing Board and appropriate University Administrators to ensure the quality of the contents. In order to justify our request we offer the following comments.

1 Statistical Analysis

An audit such as this should have two critical goals: (1) To assess the degree of accuracy of the transcripts at the Preuss School, and (2) To evaluate to what extent the inaccuracies could be simply due to random mistakes. We found that neither question was clearly addressed by the data analysis in the report. These are standard questions in statistical inference for which well established methods exist and are common practice. Such methods require the use of a randomly selected sample of data to estimate error rates, confidence intervals about error rates, and to test statistical significance against chance factors.

It is not evident that any of these commonplace methods were used in the audit. Instead the executive summary of the audit highlights what an untrained eye may see as outrageous error rates: 75.8 % of the transcripts reviewed had grade inaccuracies, 71.7 % of which had a positive impact on the student grades. These figures were, in turn, reported in the local and national press with a seemingly devastating effect on the reputation of the Preuss School and its principal.

These numbers, as it turns out, are based on a biased, non-random sample of the transcripts. It is theoretically possible, and easily testable, that the actual error rates in the Preuss transcripts may be very small, and that the bulk of these errors may be random and unintentional. We request that an expert, independent statistician be given access to the raw data used in the audit, in order to perform the aforementioned analyses.

Shall it turn out that the errors are large, efforts should be made to ascertain when in the history of the Preuss School such large error rates started to occur, and how this relates to potential causal factors. For example, is it related to the hiring of particular administrative personnel, like the Principal, or the Registrar? Is it related to the adoption of new software for tracking academic records?

2 Testimonial Evidence

The audit headlines the bold conclusion that Dr. Alvarez likely had knowledge of and/or directed inappropriate grade changes, despite the fact that she strongly denies these charges. It took us considerable re-reading of the audit to realize that this conclusion was based on testimony from the registrar that had been terminated by Dr. Alvarez, prior to the investigation, for inappropriately changing her own children's grades. Another critical aspect of the investigation focused on the allegation that Dr. Doris Alvarez may have inappropriately influenced the teachers to lower their grading standards. The investigation in this case is based on teacher interviews. We have become aware of troubling reports from faculty at Preuss that at times the questions in these interviews were leading and could have been used to incriminate Dr. Alvarez regardless of the answer to the questions. There is overwhelming evidence from behavioral science that subtle changes in the way interviews are conducted can lead to dramatically erroneous conclusions. This is why properly conducted interviews are routinely video and/or audio recorded and reanalyzed by experts to minimize the potential for bias. It was not evident from the report that such measures were undertaken as a part of the audit. We request that the testimonial evidence, including the videotapes of the interviews, be examined by a legal scholar to assess whether it affords the conclusions drawn in the audit.

3 Peer Review

The more salient aspects of the audit portray Dr. Alvarez inappropriately pressuring the teachers to lower their academic standards. However, careful

reading of the audit raises serious doubts about such a picture. For example, whereas some teachers reported that at times Dr. Alvarez had asked them to accept some late homework, potentially lowering their standards, another teacher reports that the principal counseled that her grading policy was perhaps too lenient.

We wonder whether such questioning and counseling may be part of what is expected from a good Principal. Indeed we can attest to it being part of the job of a good department chair at UCSD. We were surprised and concerned that the audit made no effort to obtain the opinion on this matter from other principals. Comparing Preuss practices with other comparative schools seems critical to obtain a fair assessment of the situation.

4 Conclusions

The UCSD Preuss Charter School Grades Investigation prepared by the Audit and Management Advisory Services is technically flawed and surprisingly biased in the way it highlights some data while obscuring other critically important data. The technical flaws refer to the fact that: (1) Proper statistical techniques were not used thus resulting in estimates of error rates that may be grossly biased. (2) Efforts were not made to characterize how the error rates changed throughout the history of the Preuss School, and how these changes may relate to obvious causal factors. (3) Bold conclusions about the intentions of Dr. Alvarez are drawn in a manner that does not appear to be backed by substantive testimonial evidence. (4) There is no indication that efforts were made to compare the principal's actions with standard practices of principals.

For these stated reasons, we request a reopening and further investigation of this audit. We recommend that: (1) An expert statistician should analyze the transcripts to provide standard estimates of error rates, results on standard tests of statistical significance, and standard analyses to relate the changes in the error rates to obvious causing factors, like the hiring of a new administrator or the adoption of new software for tracking academic records. (2) A legal scholar should analyze whether the testimonial evidence was properly collected and whether it provides sufficient evidence to back the conclusions in the report. (3) The actions of Dr. Doris Alvarez should be peer reviewed by other principal and school administrators to

assess the degree to which they fall within or outside her role as principal. We greatly appreciate your time spent reviewing our comments. We hope that our recommendations are useful to your future efforts in analyzing this situation.

Sincerely,

Terrence Sejnowski, Professor, UCSD.
Aaron Cicourel, Research Professor, UCSD.
Gary Cottrell, Professor, UCSD.
Andrea Chiba, Associate Professor, UCSD.
Javier Movellan, Research Professor, UCSD.