

## TEACHING VARIANCE AND DEGREE OF FREEDOM THROUGH COMPUTER-ASSISTED INSTRUCTION

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### ABSTRACT

The principle objective of the current study is to teach variance and degree of freedom by means of computer-assisted instruction. Variance is regarded as one of the most important topics to learn, degree of freedom is a concept considered as one of the most difficult concepts to teach and learn. The preliminary results on 15 faculty members showed that they had limited knowledge related to these concepts. Based on this need analysis, we developed a video tutorial to teach these concepts using Flash and Camtasia Studio software. We also considered visual design and instruction principles when developing the tutorial. The tutorial is made up of three parts: population variance, degree of freedom and sample variance. The effectiveness of our tutorial was tested on these 15 faculty members. The findings revealed substantial improvement in their knowledge about these two concepts. They were very satisfied with the tutorial and gave us valuable insight into what can be done to promote the instructional value of our tutorial. We strongly believe that the video tutorial we developed has a great potential to help learners of statistics to grasp these concepts.

**Key Words:** Variance, degree of freedom, statistics learning, computer-assisted instruction.