

The Theory and Application of Statistical Detection of Cheating on Tests

James A. Wollack

University of Wisconsin

Abstract

Cheating on tests is not new. In fact, around the globe, nearly every major sector of the testing industry has encountered at least one significant security breach. The technological advances over the last few decades have dramatically changed the scope of cheating with respect to unprecedented capabilities to discretely capture and share test content before, during, and following test administrations. As such, testing programs are investing more heavily in security measures, including implementing a host of strategies for preventing, deterring, impeding, detecting, and investigating potential test fraud. This particular workshop focuses exclusively on the statistical detection of cheating on tests. We will trace the roots of statistical detection of cheating from one examinee surreptitiously copying answers from another examinee for personal gain, to the current problem of organized, big-business cheating rings. We will examine the variety of statistical methods available to help programs combat test collusion, item preknowledge, and test tampering. In discussing the methods, participants will learn about the derivation and mechanics of the methods, research findings on their statistical properties in different contexts, practical issues associated with their use in operational settings, and areas for future research expansion.