## D65 Ruminations on Competencies, Taxonomies, and Rubrics for Forensic Science Education

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After attending this presentation, attendees will: (1) understand the distinctions among competencies, taxonomies, and rubrics; and (2) how they apply to forensic science in general and forensic science education in particular.

This presentation will impact the forensic science community by improving the educational rigor in forensic science education programs.

The problems inherent in the education and training of forensic science practitioners have been obvious since the advent of forensic science as a profession. The solutions advanced; however, have too often been dictated by considerations of convenience, cost, and control. Three key problems exist: the scientific basis underlying each discipline; the different cognitive decisions required of classification, individuation, individualization, and reconstruction; and the relative roles of academic credentials versus practitioner skills. Addressing these problems needs to begin with the student – what can he do when he meets the teacher, what can he do when he leaves the teacher, and is what he learned what he needs to do the job? This paper will address the use in forensic science education of three educational solutions – competencies, taxonomies, and rubrics – and how they relate to the key problems.

Competencies are the latest arrival on the scene – that combination of knowledge, skills, and abilities in a particular career field, which, when acquired, allows a person to perform a task or function at a specifically defined level of proficiency. It seems straightforward enough that a professional degree program should be designed to provide such a product until one considers two problems: forensic science examinations require logical thinking, creative thinking, and judgment, all difficult to teach and assess; and delineating competencies for forensic science practitioners leads to similar delineations for educators. That is, experience as practitioners and advanced degrees are both required, not one or the other.

Taxonomies were the earliest of the three approaches proposed to professionalize education. The best known of the taxonomies was developed by Bloom; however, it has two deficiencies when it comes to forensic science education. One, it does not distinguish between the two types of applications – technician and professional. Two, it does not include levels for attitude, work ethic, and integrity which are key elements of a desirable forensic scientist. A revision to Bloom's Taxonomy is presented that includes these.

Rubrics were proposed somewhat after taxonomies in an effort to correlate the assessments in a course to the material being taught and to standardize the grading process itself. However, as learned in proficiency testing, when judgment and creativity are involved the concept of assessment may be simple but the execution is complex.

Like many other facets of forensic science, the education and training of a professional practitioner is a complex adaptive system. The three approaches discussed interact among themselves and each will adapt as the field changes. Each of the three approaches has value standing alone but they have even more value in their combination. Competencies describe the desired end product while taxonomies provide the environment within which they are to be achieved and rubrics provide a road map linking the two and insuring that they are achieved. But, their real value lies in their ability for guiding communication for change among the agencies dictating the tasks, the professional associations setting standards for those tasks, and the educational community preparing students to meet those standards.

**Forensic Science Education, Judgment Assessment, Standardization**

 ** Presenting Author*