A124 Wikis in Criminalistics: An Example of Constructive Alignment and Collaborative Knowledge Building

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After attending this presentation, attendees will understand the concept of constructive alignment and will recognize at least one tool for collaborative knowledge building.

This presentation will impact the forensic science community by creating awareness about the optimization of the process of teaching/training-learning forensic science at all levels and all fields, through the use of pedagogical and didactical models.

For some time, forensic sciences have been experiencing a paradigm shift in which ideas and protocols used for many years are thought to be obsolete and logically incorrect. Worldwide, individuals and organizations active with forensic sciences are discussing the optimal approach to the different phases of the forensic process with "a sound scientific foundation and justifiable protocols..[1] As a consequence, knowledge is being created, modified, and applied at a rapid rate. As proposed in the model of personal and social knowledge-building by Stahl (2000), the initial ideas of an individual about a problem ought to be crystallized in words and made public in order to engage in the cycle of "social" knowledge-building.[2] Through feedback, argumentation and negotiation, the formalization of the created collaborative knowledge is possible and can be followed by its integration into an individual's comprehension.

These processes or phases in the above mentioned model are recognizable in actual situations within the forensic sciences. Collaborative Knowledge Building (CKB) becomes ideal in many learning situations within a forensic science educational program. Integrating CKB into the curriculum provides the student/trainee with a realistic environment of multidisciplinary teamwork far from the individualism taught in the lower levels of formal education. Active learning takes place when using CKB while engaging in the dynamism of social networking. The involvement of the student/trainee in such an activity can begin while learning the same principles that are under fire. Stimulating the forensic science student/trainee to learn and defend these principles with sound argumentation against the scrutiny of peers seems not only a good idea but a necessity.

Just like with other approaches to active learning, the essence of the constructive alignment theory, the instructor/trainer doesn't have the central role in knowledge transfer, but takes diverse roles as organizer, planner, coach, and facilitator of the learning process.[3] In addition, the instructor/trainer can turn to different CKB technologies such as the use of wikis, discussion boards, and webblogs to integrate in the course design. These tools offer other advantages for both teaching/training-learning situations and developing new knowledge, among others the ubiquity, asynchronicity, and the possibility for anonymity while using the tool. In addition, under quality control, they can become reference material for professionals in the field.

Criminalistics is a course given within the first year of a two-year master's program in forensic science at the University of Amsterdam. The students come from different bachelor's programs in the area of biology, chemistry, physics, mathematics, and computer science. To unify the group is almost an impossible mission. Fortunately, for the basic principles in forensic science, only the general scientific critical thinking level is needed; the content knowledge can be built with time. However, doing this with such a variety of students becomes a difficult task when it is desired that the student's motivation remains high during the activities. Wikis are said to be useful in expanding community involvement and interest, because wikis grow and evolve as a direct result of people adding material to the site.[4] For that reason, a wiki was chosen to be part of the criminalistics course. The content of the wiki was infrared spectroscopy and its applications to forensic science for identification and comparison of different samples (adhesive tapes, explosives, fibers, documents, drugs, and car paint). Each team had to work on one sample type and review a second type. This activity was designed to align the course to the learning outcome, "Indicate the steps necessary to select a type of analysis method to address a specific research question." The assessment of the activity was divided into two parts, the wiki itself (CKB) and a quiz (content). The students found the activity useful in learning about the subject and considered the team work beneficial. On the other hand, there was correlation between the results from the quiz and the results from the part of the final exam that assessed the above mentioned learning objective.

References:

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Constructivism, Education, Training

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