Why is genetics so difficult for students to learn?

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July 15, 2008

This Sunday morning at the International Congress of Genetics, Tony Griffiths gave an interesting presentation with the above title. He identified 12 possible reasons why students have problems learning genetics. His main argument: students should learn concepts and principles and apply them creatively in novel situations (the research mode). Instead, too many details are often crammed into seminars and textbooks. In other words, students often stay at the lowest level of Bloom's taxonomy, the remembering of knowledge. The highest level, the creation of new knowledge, is seldom reached, although these skills are of course critical for a successful researcher.

Andrew Moore from EMBO talked about the teaching of genetics in the classroom. He was concerned that a survey found that molecular evolution (or molecular phylogeny) was taught in not more than 30% of European classrooms. He gave some examples of how principles of genetics can be integrated into high school teaching.

Wolfgang Nellen explained his successful Science Bridge project of teaching genetics in the classroom, using biology students as teachers. Interestingly, they have not only taught high school students, but also journalists and – priests (German language link here). Politicians were the only group of people that weren't interested in his offer of a basic science course.