

Improving students' metacognitive ability in professional course learning

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Abstract: In nowadays, the cultivation of students' innovative ability has become the critical requirements in the higher education. However, the innovative consciousness and ability could not be achieved directly. It should be conducted through various, multi-level approaches step by step. The corresponding adjustment and revolution of the teaching and learning model is necessary, which is only the road but not the end. The real purpose for changing the teaching and learning model is to improve students' learning initiative and metacognitive ability. Metacognition is a conscious awareness of one's thoughts—thinking about thinking. During the process of teaching the Molecular Biology as well as the downstream courses, we start from cultivating the awareness and ability of independent learning, striving to create an open learning environments. By focusing on the characteristics of innovative learning, namely "autonomy", "exploration" and "reorganization", we carry out the training and cultivation of students' metacognitive skills from three aspects: scientific cognition process, knowledge transfer skill and project based learning. We support students in metacognitive growth by providing and applying the 2W2H method, helping them to process and retain information through self-recognition and reflection. Developing the metacognitive skills help students to achieve awareness of what they are thinking, and more important, to accurately evaluate the depth of their understanding and the effectiveness of their learning. By improving the metacognitive ability, students benefit not only from deeper learning of course content but also from becoming more self-motivated and self-regulated learners.



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