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How to improve the Scholarly Level of Postgraduate in Learning Biochemistry

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Abstract **– The biochemistry course as a practical course is useful in attracting science postgraduate of high caliber. Therefore, classroom teaching reform must be strengthened to improve students' academic level. These could be improved by effective teaching approaches, stimulating scientific interest, meaningful learning in learning biochemistry.**

Keywords **–Scholarly Level, Postgraduate, Biochemistry, Evidence-supported, Experimental class.**

I. INTRODUCTION

The postgraduate, especially in life science, need comprehensive ability, innovation ability and the preliminary scientific thought. They also need use educational materials on their own and working at their own time. The biochemistry course as a practical course linked with the actual social, has been useful in attracting science graduates of high calibre, in providing them with a sound laboratory-based training and stimulating their interest in following a career in life science[1]. As classroom teaching is the main form of teaching organization and activity way, and is also the main base on the classroom teaching mode reform. So, on the basis of our own situation of biotechnology teaching, we go a little deeper into the objective of biotechnology teaching[2].

I. *Evidence-Based Approaches To Teaching And Learning*

What students learn must be connected to what they already know and what they are going to learn? Evidence-supported approach is that of meaningful learning. Meaningful learning acknowledges that students construct knowledge, but it also recognizes that this knowledge construction must be build on a firm foundation, and must lead somewhere meaningful (to the student). That is, what the student learns must be connected to what the student already knows [3]. Facts and skills that are not cognitively connected to other ideas are difficult to retrieve, and are unlikely to be used in new situations (this idea is also referred to as the zone of proximal development) [4]. Equally important, this new knowledge must be used in a meaningful way (e.g., in an authentic task) or at least must be perceived as being of use for some future purpose. Otherwise the student may choose not to learn meaningfully, but rather to memorize in a rote or shallow fashion [5].

What is important to measure?

The assessment instruments we use should match our goals for student learning. We have to decide what aspects of learning are important? Are we content with students who know facts and algorithms? As you might imagine, it is far easier to develop reliable and valid questions to assess whether students “know” something, or can perform a calculation [6]. However, if we are to improve how and what our students learn, we have to think seriously about the nature of the assessments we use in a course. For example, would we want students to take what they know and use it in new situations?

II. Gathering and Exploring Evidence

Carl Wieman has argued that the best way to improve science teaching and make it accessible to a more diverse student body is to apply the practices of scientific research to science teaching[2]. Central to this idea is the use of evidence instead of anecdote as the foundation for developing effective teaching approaches. Therefore, if scholarly teaching is to mirror the process of science, questions that we ask about student learning and changes we make in our teaching practice must be based on prior work investigating how people learn and what teaching innovations have been previously successful in our discipline. Maryellen Weimer gives an extensive critical description of the types of data that can be generated and examined related to teaching. This inventory makes clear that a diversity of evidence produced using a number of different theoretical approaches can help inform and improve teaching[7].

III. Improve Students Interest in Biochemistry Experiments

Biochemistry is quite comprehensive and includes numerous concepts, biochemical reactions, metabolism pathways and multilinkages [8]. Students tend to be confused and bored by a huge amount of theories. As the basic curriculum of life science, biochemical theories are difficult to understand. Students usually do not pay sufficient attention to biochemistry, and they are not interested in the principle introduced at the beginning of the experimental class. Consequently, we teachers attempt to explain the theory in less than half an hour because most of the theories have been described in detail in the lecture classes. For example, in the separation and purification of gamma globulin experiment, we can directly introduce the application of two types of methods, desalting and gel filtration. The physiological function of gamma globulin in humans should be noted because the combination of theory and clinical application can increase enthusiasm for studying. Second, before each experimental session, students are required to review the experimental content and relevant technical issues [9]. In the experiment called paper chromatography of transaminase, students are required to obtain as much information about transaminase from textbooks and Internet as possible before class. In this manner, they can analyze the relationship between serum transaminase activity and liver dysfunction-related disease to easily combine theoretical knowledge and its clinical application. Finally, at the end of the experiment, teachers should provide an objective evaluation of the experimental results of each group and further urge the students to write the experimental report carefully. These three approaches, that is, mobilizing study enthusiasm, reviewing before class, and reporting after class, absolutely ensure teaching quality[10].

IV. Conclusion

The postgraduate, especially in life science, by using the evidence-supported and practices teaching approach, can help them to improve the scholarly Level.

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