

Analysis on the optimization path of the construction of excellent courses of molecular biology in Colleges and Universities

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Abstract: molecular biology studies the structure of biological macromolecules, expounds the essence of life phenomenon, and is an important discipline in the development of life science. The construction of excellent courses of this discipline is not only the demand of the development and progress of China's higher education, but also the inevitable requirement of the development of the field of natural science. However, in terms of the construction of quality courses at this stage, there are still many deficiencies in the construction results and operation mode of quality courses of molecular biology in most colleges and universities. Based on this, this paper explores the optimization path of the construction of excellent courses of molecular biology in Colleges and universities, aiming to promote the construction process of excellent courses of molecular biology, and provide valuable references for teachers of the course.

Key words: colleges and universities; Molecular biology; Quality courses; Optimize path

Molecular biology in Colleges and universities is a comprehensive discipline, which mainly studies the structure and function of genes. With the deepening of research, it also combines with the actual needs to carry out research on related technologies. Its research results have been widely used in the fields of life science and clinical medicine, which has greatly promoted the progress of society. Driven by the rapid development of new technologies and new needs, college molecular biology is also facing many challenges. Teachers need to actively explore the construction of quality courses to meet the personalized needs of students' comprehensive development, and cultivate more high-quality research talents for our country. After years of efforts, the construction of molecular biology in Colleges and universities has made some progress, and the teaching methods and teaching conditions have changed, but there is still much room for improvement. Therefore, it is of great practical significance to explore the optimization path of the construction of excellent courses of molecular biology in Colleges and universities, which is an important driving force to promote the progress of the discipline.

1 Analysis of the current situation of the construction of excellent courses of molecular biology in Colleges and Universities

1. Teaching philosophy and teaching content need to be updated

Under the influence of traditional teaching concepts and ideas, the teaching work of molecular biology in Colleges and universities still focuses on imparting knowledge and improving students' academic achievements, ignoring the importance of cultivating students' thinking of molecular biology research and promoting their personalized development. In actual teaching, limited by many factors, such as classroom time, teachers' ideas, etc., many teachers only teach some knowledge of molecular biology, and rarely explore the research progress of molecular biology and frontier technology theory, which limits students' thinking and career to a certain extent. Over time, the teaching content of molecular biology in Colleges and universities will be outdated, which will affect teachers' research enthusiasm and students' learning enthusiasm, and adversely affect the construction of quality courses.

2. Teaching conditions need to be improved

The construction of excellent courses in Colleges and universities needs to be based on the network platform, and has high requirements for the construction of the network platform, which determines the effect of teacher-student interaction, students' autonomous learning and the sharing of teaching resources. Its importance is no less than classroom education. From the construction of quality courses at this stage, we can summarize the existing problems and deficiencies. For example, the quality of network platform construction is uneven, and the phenomenon of frequent network speed jams affects the fluency of classroom teaching, and brings bad use experience and learning experience to students. For another example, the maintenance of the network platform is not perfect, and the corresponding teaching courseware and learning materials are not updated in time. At the same time, the production quality of teaching resources is also different, which affects the effect of students' autonomous learning, and it is difficult to give full play to the application efficiency of excellent course resources.

3. The promotion of quality courses needs to be strengthened

The construction of quality courses involves a wide range, which requires a series of policy support to stimulate teachers' research enthusiasm and enable them to carry out in-depth academic exchanges. However, in the construction of excellent courses in molecular biology, some colleges and universities have achieved the expected scale after years of network platform construction, but the excellent courses attached to the network are still very limited, and the number of excellent courses is relatively small. In terms of publicity and promotion, some colleges and universities also have the problems of low enthusiasm and insufficient efforts, resulting in many excellent courses can only be carried out within the scope of the University, and do not understand the construction of excellent courses of molecular

biology in other colleges and universities. Therefore, at this stage, colleges and universities need to strengthen the promotion of excellent courses of molecular biology, mobilize teachers' research enthusiasm, and make their research results recognized, so as to avoid the waste of educational resources.

2 Suggestions on the construction of excellent courses of molecular biology in Colleges and Universities

1. Arrange more reasonable teaching content to carry out design

The teaching content of the excellent course needs to be designed according to the teaching objectives and teaching conditions. It needs to cover a large number of professional knowledge and involve cutting-edge knowledge. It needs to establish the development and teaching in the field of molecular biology, take into account the basic and advanced nature, and cultivate students' scientific research spirit and consciousness in teaching. In addition, while conducting theoretical teaching, teachers also need to highlight the comprehensiveness of the subject, strengthen the training and improvement of students' professional skills with practical operation, fully combine theory and practice, rebuild the teaching content of molecular biology, and take ability training as the new teaching goal.

2. More efficient teaching methods and means

The teaching work needs to closely focus on the learning situation, so as to adopt a reasonable teaching method to teach the teaching content of biomolecule course, and maximize the efficiency of classroom teaching. This requires teachers to actively prepare lessons in practical work, work hard on teaching methods and means, and give full play to the advantages of information technology and multimedia equipment. For example, when teaching theoretical knowledge, teachers can use multimedia and Internet resources to design micro lecture videos or display highly abstract molecular biology knowledge, so as to integrate image and specific content into theoretical teaching, help students quickly understand and absorb knowledge points, and achieve the purpose of improving teaching efficiency. In addition, according to the construction needs of quality courses, further improve the teaching evaluation mechanism, combine the website construction with the actual operation needs, improve the network evaluation management system, create reasonable and fair incentives, and promote the construction process of quality courses. In terms of assessment, colleges and universities need to combine theory with practice, provide students with opportunities for interaction, communication and feedback, and make the relationship between the construction of excellent courses of molecular biology and students closer, so as to truly play the exemplary role of excellent courses.

3 Strategies for the construction of excellent courses of molecular biology in Colleges and Universities

1. The construction of teaching staff is the core of curriculum construction

The construction of excellent courses in molecular biology is not an overnight task. Teachers need to take it as a whole, and dig deep into their professional knowledge to enrich the teaching content of molecular biology. In this regard, colleges and universities need to pay attention to the construction of teachers' team, provide opportunities for teachers to work together, and explore strategies to improve teaching quality in mutual communication and learning. For example, colleges and universities can set up a special research group for excellent courses to carry out the construction of excellent courses based on discussion and teaching practice. In the course of lesson preparation, the problems encountered by each molecular biology teacher in the teaching were gathered in the mode of collective lesson preparation, and the strategies and methods to effectively solve these problems were discussed together. In addition, colleges and universities can also work with teaching experts to research and explore teaching design schemes for the construction of excellent courses, which can promote the construction of excellent courses on the one hand, and provide new ideas for the teaching team on the other hand, so as to improve the construction quality of excellent courses. In short, in the process of constructing excellent courses, colleges and universities need to pay attention to the actual needs of the teaching staff, actively provide opportunities for teachers of molecular biology courses to communicate and improve themselves, and lay a good foundation for the construction of excellent courses.

2. Select characteristic teaching contents and emphasize the cultivation of knowledge application ability

The teaching content is the soul of the excellent course, which needs to take into account the basic and cutting-edge, and fully reflect the characteristics of the course, so as to achieve the purpose of improving students' knowledge and ability. Therefore, teachers of molecular biology course need to screen the teaching content to select the best from the best. In actual teaching, teachers can cooperate with teachers of other biology courses, such as biochemistry, genetics and microbiology, to discuss strategies for optimizing teaching content with first-class teachers, and improve the relevance and simplification of knowledge points. At the same time, closely combine the development of the field of molecular biology, delete the old teaching content, timely add cutting-edge knowledge, and increase the combination of molecular biology, medical field and gene field.

In terms of cultivating students' application ability, molecular biology teachers need to start from improving their own ability, do a good job in scientific research, apply some new theories and methods to teaching, and shorten the distance between teaching and the development of molecular biology. For example, participate in provincial or national scientific research projects, carry out technical research

and development combined with their own professional knowledge, and apply for relevant patents; You can also apply your scientific research achievements to teaching by publishing papers. All these can help students understand relevant knowledge in depth and point out the direction for their study. In addition, teachers can also encourage college students to apply for innovation and entrepreneurship projects in molecular biology, and through these practical contents, mobilize the enthusiasm of students' participation, and lay a foundation for cultivating their scientific thinking and practical operation ability. In teaching, teachers use these innovative and entrepreneurial purposes to encourage students to learn subject knowledge in a down-to-earth manner and stimulate students' enthusiasm in the biological laboratory. In the laboratory environment, teachers can also design more comprehensive and practical projects for students to challenge the difficulty of the subject, encourage them to focus more on the major and promote the improvement of their comprehensive ability.

3. Reform teaching methods and optimize teaching means

(1) Renew teaching concepts and optimize teaching methods

In the process of teaching, teachers need to change their teaching concepts, do a good job of teaching guidance in the classroom, put students at the center of the classroom, give full play to students' subjective initiative, and build student-centered quality courses. For example, teachers can divide the content of a chapter into several modules according to the teaching needs of the new course. In general, the teaching content of the first module is relatively simple. Teachers can give full play to students' autonomy, guide them to learn the content by themselves, and carry out in-depth learning in the form of joint discussion between teachers and students in the classroom. With the deepening of knowledge points, teachers can divide students into several groups, encourage them to study together within the group, and discuss and report on the inquiry content of the new module. Through this teaching form, molecular biology teachers can provide students with more opportunities for autonomous learning, which can not only activate the classroom atmosphere, but also give full play to students' autonomy, cultivate their independent thinking ability, and achieve the teaching goal of quality courses. In addition, teachers of molecular biology should also actively apply information-based teaching technology to present the key and difficult contents of the course in visual and specific video content. Therefore, in the process of reforming teaching methods, teachers should change their teaching concepts to meet the needs of constructing excellent courses in molecular biology.

(2) Strengthen teaching reform and create online and offline hybrid "golden class"

In the process of constructing excellent courses, molecular biology teachers can explore the construction of diversified excellent courses with the help of a research group. For example, in the actual teaching, the research group where the author works explores the integration of the Internet and the traditional teaching mode, and constructs a hybrid teaching method combining online and offline, which not only gives full play to the advantages of the traditional teaching mode, but also fully integrates the scattered time of students, so as to maximize the benefits of teaching and learning. Through practice, the author found that students' enthusiasm and enthusiasm for active discussion have been improved, and they can summarize their knowledge points according to their actual needs. In addition, teachers also use the convenience and advancement of information technology to timely sort out students' learning effect and classroom teaching effect, which provides a reference for identifying students' weak points in learning. Compared with traditional excellent courses, the construction of hybrid "golden course" enriches the form of excellent courses and is a major breakthrough in the field of teaching.

epilogue

In a word, the construction of excellent courses needs the long-term adherence of molecular biology teachers, the accumulation of teaching experience, and the maximum application of high-quality teaching content and advanced teaching concepts to teaching, so as to promote the construction process of excellent courses. In this regard, teachers of this course can start with selecting teaching content and reforming teaching methods, highlight the key content of molecular biology course, adapt to the needs of talent training in Colleges and universities in the new era, integrate practical content, and pay attention to the cultivation of students' practical application ability. In addition, colleges and universities themselves also need to do a good job in the construction of teachers' team, closely focus on the needs of the construction of quality courses, promote the improvement of teachers' personal ability, and lay a good foundation for the realization of teaching objectives such as knowledge transfer, ability training and value building.

References:

- [1] Jiachao Gu,Shanheng Dong,Liwei Sun Research on the construction of excellent courses under the background of double high school construction [j] China education technology equipment, 2021 (24): 28-29+32
- [2] Ting Li,Tianchi Duan,Jia Sun,Xingbin Yang,Guitian Gao Exploration and practice of "Internet + Course Ideological and political" mode in food molecular biology teaching [j]Shaanxi Education (Higher Education), 2022 (07): 10-12
- [3] Wei Gu Resource development and platform construction of high quality courses [j]Office automation, 2022,27 (08): 38-40+25
- [4] Yanxia Yin,Dong Yang,Benqiong Xiang,Sen Li,Xiaohui Jia,Li Tong,Jing Luo Construction and teaching practice of high quality resources for Biochemistry and molecular biology experimental courses [j]College Biology Teaching Research (electronic version), 2022,12 (02): 38-43
- [5] Xi Shen,Jing Yi,Hua Zhang,Yuan Song,Yun Xiang Construction and practice of molecular biology experiment MOOC [j]College Biology Teaching

Analysis of teaching optimization strategy of modern electrical control system installation and debugging course based on Ideological and Political Education

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Abstract: with the deepening of education reform, the teaching of modern electrical control system installation and debugging course in higher vocational colleges should be further optimized. Teachers should actively introduce new educational concepts and teaching methods, so as to better arouse students' interest, strengthen their understanding and application of the knowledge learned, and improve the effect of education. As a popular educational concept, curriculum ideological and political education can greatly enrich the teaching content, broaden the path of education, and promote the comprehensive development of students. In view of this, this paper will analyze the teaching of modern electrical control system installation and debugging course based on Ideological and political education, and put forward optimization strategies for your reference.

Key words: curriculum ideological and political education; Installation and commissioning of modern electrical control system; Course teaching; Optimization strategy

1 Overview and analysis of curriculum ideological and Political Education

As an advanced educational concept, the course of Ideological and political education can provide a very strong guiding role for the development of higher education, enable students to master the course knowledge and form a strong ideological and political quality and moral quality, which has a great help for their long-term development. In addition, the course of Ideological and political education can help teachers break through the previous teaching mode, broaden the path of education, enrich the value of teaching and education, and further improve the students' knowledge system.

When introducing the course of Ideological and political education into the teaching of modern electrical control system installation and commissioning, we should pay attention to the in-depth exploration of the course content and find the ideological and political elements

Research (electronic version), 2022,12 (01): 37-42

[6] Qianwei Li, Chunmao Chen Exploration of flipped classroom teaching mode of "molecular biology" in Colleges and universities [j]Education and teaching forum, 2022 (32): 88-91

[7] Yang Liu, Boping Li, Yangdi Ou, Ruihong Zhang Construction of excellent chemistry courses: Construction and practice of comprehensive chemistry experiment courses [j]Chemistry Education (Chinese and English), 2021,42 (18): 74-78

[8] Weiwei Wu On the construction mode of teaching materials under the transformation of quality course construction [j]Journal of Hubei open vocational college, 2021,34 (08): 144-145

[9] Chenming Zhu Analysis on the construction of excellent online courses in Colleges and universities [j]Journal of Heilongjiang Teacher Development Institute, 2020,39 (12): 49-51

[10] Fang Yuan, Kaihui Zhao, Bingbing Shi Exploration on the curriculum construction of molecular biology in Colleges and Universities -- Taking Tibet University of agriculture and animal husbandry as an example [j]Education and teaching forum, 2020 (40): 228-229

[11] Xi Niu Research on the teaching of molecular biology experiment course from the perspective of educational ecology [j]Henan agriculture, 2020 (24): 15-17

[12] Xiaoyu Liu, jin Yuan, Cheng Sun Exploration on the application of modular interactive teaching in the teaching of molecular biology course in Colleges and universities [j]Anhui Agricultural Science, 2020,48 (11): 277-279

[13] Xiaoyan Lu Research on the construction of teaching team of excellent courses in Colleges and universities [d]Henan University, 2020

[14] Yanxing Zhou, Jiangbin Li, Hua Zhang, Yuchao Li, Ailing Liang, Qiujing He, Gan Hou Research on the safety management of University molecular biology laboratory [j]Guangdong chemical industry, 2020,47 (01): 172+189

[15] Yaying Dai Research on resource sharing strategy of excellent courses in Colleges and universities from the perspective of students' needs [d]Nanjing University of Aeronautics and Astronautics, 2020

Project (capital) support: first class online open courses of Baotou Normal University in 2020