Research on the Influence of the Teaching Mode of Public Elective Courses on Food Nutrition and Safety Based on "Internet +" on Students' Learning Styles

Zhun Guo[a], Yuzhen Zhao[b, *], and Yang Zhao[c]

Xijing University Xi'an, China

[a]guozhun1987@163.com; [b]zyz19870226@163.com; [c]zhaoyang@xijing.edu.cn

Abstract: Taking the public elective course "Food Nutrition and Safety" course offered by Xijing University as an example, the "Internet +" method of mobile teaching App is used to carry out classroom teaching practice and to study the influence of this method on the learning mode of public elective students. The research shows that the classroom teaching based on the "Internet +" of mobile teaching apps can influence the learning styles of all majors and improve their learning ability from the four aspects of learning time allocation, learning tool use, thinking habits and self-control. It can effectively enhance the classroom learning atmosphere, stimulate students' interest in learning food nutrition and safety knowledge, and promote the effect of food nutrition and safety knowledge teaching for different professional students.

1. Introduction

With the continuous development of the Internet, the equal and open information sharing space created by the Internet has fundamentally changed the concept of knowledge [1]. Therefore, "Internet + education" will become the main form of education and teaching in the future. In the teaching of college elective courses, more and more colleges and universities have introduced the online resources of "MOOC" as a replacement course for public elective courses. "MOOC" is a large-scale open online course [2], which is a product of "Internet + education". The biggest feature of "MOOC" is that students can complete the study online, regardless of time and space [3], which means that students do not have to go to a fixed classroom at a fixed time. This brings convenience to students, and it also inevitably has many drawbacks in teaching. First of all, after completing the "MOOC" course, many students just click on the player to choose a chapter at random, and finish the course time and perfunctory things. Secondly, students lack the atmosphere of traditional classroom cheerfulness and mutual infection when they study. The most important thing is that when studying in the "MOOC", there are no teachers around the students to restrict student behavior, relying on student self-control, which makes many students use this time to play mobile games, online shopping, browsing short video apps and social networking sites. Etc., and did not really invest in learning. This makes the "MOOC" as a public elective course in colleges and universities does not achieve the actual effect, often in the form, the impact on the students' learning ability is even more difficult to talk about. Therefore, it is imperative to explore how to apply the "Internet + teaching" model to college public elective courses more efficiently and practically to enhance students' learning ability.
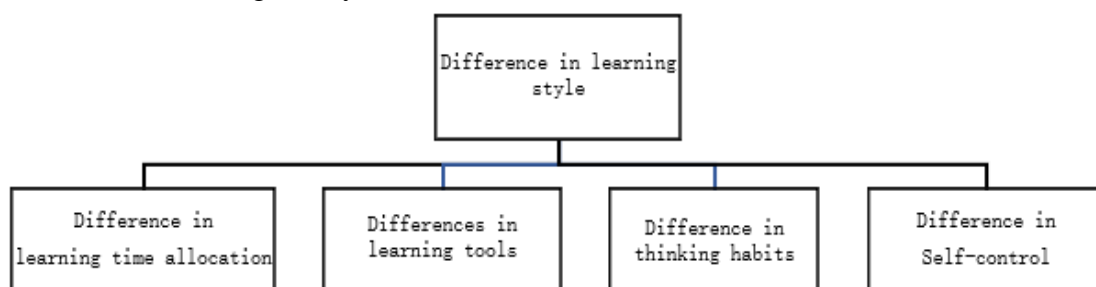

Figure 1. Difference classification of learning methods

The students in the public electives come from all majors in the school. The students with different professional backgrounds have different learning abilities, which are mainly reflected in the differences in their learning styles. As shown in Figure 1, the author believes that the differences in learning style mainly include the differences in the allocation of learning time, the differences in the use of learning tools, the differences in thinking habits and the differences in self-control. The way students learn depends on the efficiency of their public electives. Therefore, it is very important for public elective teachers to adopt a better way to change the way students learn and promote the teaching of public electives. This paper aims to use the "Internet +" approach of mobile teaching apps to conduct classroom teaching, and to study the impact of this approach on the learning style of public elective students.

2. The Effect of the "Internet +" Approach of Mobile Teaching Apps on Student Learning Styles

2.1 Influence on the Allocation of Students' Learning Time in Public Elective Courses

When students are studying in the public elective course, they will construct a psychological learning plan according to the difficulty of the course, that is, assign different learning time to different knowledge points. In the traditional classroom teaching, it is difficult for teachers to participate in the construction of the student's psychological learning plan. The allocation of this time depends almost entirely on the individual's estimation of the difficulty level of the knowledge points. Ariel et al. [4] found that the impact of the task reward structure on learning time allocation exceeded the difficulty of the project. If in the teaching process, the teacher gives the student the appropriate task reward according to the difficulty of the knowledge point, then it can directly affect the construction of the student's psychological learning plan. Compared with traditional classroom teaching, the "Internet+" mode teaching with mobile teaching apps makes it easier to count the difficulty of knowledge points and reward students with tasks.

After the end of the teaching in one chapter, the author publishes the knowledge points of this chapter in the form of exercises through the mobile teaching app, and statistics on the students' knowledge of the knowledge points in this chapter. After collecting the teaching feedback for 2 semesters, in the third semester, according to the previous students' grasp of the difficulty level of each knowledge point, each sub-question will be given different scores. After the end of the chapter teaching, through the mobile teaching app Test and count student scores. In the fourth semester, before the start of class learning, the author pushes the difficult knowledge points of this chapter through the mobile teaching app. After the class teaching is finished, the chapter is tested and counted by the mobile teaching app. Each score of the student will be part of the student's usual grade. The specific test content is set as follows:

According to the difficulty level of the knowledge points, the author gives different scores in the form of exercises in the chapters of the food nutrition and safety course. The Food Nutrition and Safety Public Elective Course is divided into five chapters, for a total of 16 hours. According to the number of chapters, the author has set up a total of 5 knowledge point tests. Each test sets a number of exercises according to the knowledge points. The knowledge points of different difficulty levels are divided into four levels A, B, C, and D according to the difficulty level (A is the easiest. D is the hardest), giving different scores. Each test scores 20 points, a total of 100 points, accounting for 60% of the usual results, the remaining 40% for attendance. The usual grades account for 70% of the total score, and the remaining 30% is the final exam. The author influences the construction of the student's psychological learning plan by assigning test scores to the usual grades of task rewards.

Table 1 Statistics of scores of different difficulty points

chapter	3th semester public election					4th semester public election				
	A（8point)	B（6point)	C(3point)	D（3point)	Total score	A（8point)	B（6point)	C(3point)	D（3point)	总分
1	6.700	4.675	1.250	0.700	13.325	7.200	4.825	1.725	1.100	14.850
2	6.900	4.625	1.775	1.425	14.725	7.200	5.225	1.825	1.125	15.375
3	7.100	5.250	1.725	1.475	15.550	7.300	5.500	1.875	1.525	16.200
4	7.200	5.800	1.825	1.500	16.325	7.325	5.525	2.250	1.875	16.975
5	7.225	5.975	1.800	1.525	16.525	7.425	5.800	2.500	2.250	17.975
Total score					76.450					81.375

As shown in Table 1, in the elective courses of the third and fourth semester, the average score of students in the more difficult points of knowledge is significantly improved. Explain the impact of the task rewards (taking the test scores into the usual grades). The students have a significant improvement in the mastery of the difficult points of each chapter. And it can be seen from the comparison of the average scores of the students that the average score of the students in each chapter test has been significantly improved, indicating the impact of the task reward. (According to the test scores into the usual scores) The students' overall mastery of the knowledge points of each chapter has been significantly improved.

2.2 Impact on the Ability of Students to Learn from Public Elective Courses

There is usually no fixed textbook for public electives. When students are learning, they usually use the learning resources provided by teachers and the relevant learning resources of students' search tools. The difference in students' ability to use learning tools may affect students' learning [5] . The effect is that if the teacher can provide a large amount of learning resources and consciously guide the students to learn the use of learning tools in the classroom teaching process, then the difference in the way students learn can be reduced as much as possible. In the process of teaching mobile APP in the classroom, teachers can push relevant network resources related to the teaching content of the public elective course through the App. On the one hand, it provides students with a large amount of learning resources, and on the other hand guides students to actively use modern learning tools. Taking the "Food Nutrition and Safety" public elective course as an example, the author pushes the standard website of various food additives to students through the mobile teaching app. On the one hand, it can guide students to pay attention to the use of food additives, thus establishing a correct diet concept. On the other hand, the push URL provides students with a large amount of learning and development resources, and consciously guides students to use the website to search for other knowledge related to food nutrition. In the teaching of each chapter of the public elective course throughout the semester, the author will occasionally want students to push relevant learning resources, including various anecdotes related to knowledge points, which not only narrows the students who are not very good at using online learning tools, but also makes good use of the network. The differences between the learning tools students also greatly promote the enthusiasm of students to learn public elections.

2.3 Influence on Students' Thinking Habits in Public Elective Courses

Different students have different habits of thinking, perceptual thinking recognizes the phenomenon of things, and rational thinking recognizes the essence of things [6]. Since the basic attribute of perceptual thinking is the phenomenon of understanding things, the process of cognition of phenomena can be attributed to the process of perceptual thinking [7]. For the study of Food Nutrition and Safety, students of perceptual thinking are more accustomed to explaining through examples, and the humanistic feelings contained therein can help them master the knowledge points. Students who pay more attention to rational thinking are more inclined to explain the principle of knowledge points. The strict logic can attract these students. Students with strong perceptual thinking should strengthen their cultivation of rational thinking. In teaching, pay more attention to the cultivation of their logical thinking. Students with strong rational thinking should pay attention to the development of perceptual thinking and pay more attention to their emotional experience in teaching. The "Internet +" education model is a good way to balance students' perceptual thinking

and rational thinking. It is a good combination of the two through the mobile teaching app. For example, when explaining tetrodotoxin, we quickly and conveniently push the cute picture of puffer fish to students through the mobile teaching app. At the same time, we push pictures of tetrodotoxin poisoning people and related news reports. The emotional difference experience can quickly grasp the perceptual thinking. The stronger students' attention, the teacher gradually goes deep into the principle of toxin action, analyzes the strongest part of tetrodotoxin in the puffer fish body, from the phenomenon to the essence, and enhances the students' rational thinking ability. At the same time, the author used the mobile teaching app to randomly name, and the students of science and engineering majors took the stage to imitate the symptoms and reactions of their puffer fish poisoning, which not only increased their emotional experience, but also cultivated their perceptual thinking ability, and also greatly Adjusted the classroom learning atmosphere and fully mobilized the students' subjective initiative in learning.

2.4 Influence on Students' Self-Control Ability in Public Elective Courses

Self-control needs to consume resources [8], while for individuals, resources are limited. Due to the limited capacity of individual cognitive resources, when the irrelevant target occupies a large amount of cognitive resources, the current learning plan execution cannot be carried out smoothly [9]. When individual resources are exhausted, there may be a lack of self-control. At this time, you can recover with proper rest. If students control themselves for a long time, they will not only accelerate the loss of self-resources [10], it is more difficult to control themselves, teachers will correct their behavior, students will be more likely to lose their temper, and students' learning efficiency will be reduced. During the teaching, some students need to take a short break in the classroom teaching because of lack of self-control. That is to say, this part of the students can not maintain a high concentration of attention in the 50-minute classroom teaching. At this time, we can move through the Internet. Teaching App, timely send some interesting pictures or cartoons related to knowledge points through the app, consciously guide students to relax, reduce student resource consumption, gradually restore their self-control, and at the same time, deepen students' knowledge through images while relaxing Point of understanding and memory.

3. Conclusion

Based on the "Internet +" mobile app "Food Nutrition and Safety", the elective course classroom teaching has improved the learning ability of all majors from four aspects: the allocation of learning time, the ability to use learning tools, thinking habits and self-control. It effectively enhances the classroom learning atmosphere, effectively stimulates students' interest in learning food nutrition and safety knowledge, and promotes the effect of food nutrition and safety knowledge teaching for different professional students. With the continuous improvement of the Internet and AI technology, it is believed that traditional classroom teaching will usher in more in-depth changes. Therefore, for the public elective courses such as "Food Nutrition and Safety", we must constantly update the teaching concept, innovative teaching methods, and actively explore new teaching models based on the Internet and AI technology.

References

[1] Chen Li, Lu Xing Zhen QH. (2019) Conceptualizing knowledge inin "Internet + education Internet education": the nature of knowledge: and knowledge evolution [J] *Distance Education in China* 07:10-18

[2] Huang Hong, Wei Chen, Zou CW. (2016) Construction of Three-dimensional "Micro Course-MOOC-Flipped Classroom" Teaching Model——Taking "Environmental Assessment" Course for Example [J] *Modern Educational Technology* 26(10):86-92.

[3] Zhang ZY. (2014) The MOOCs and Chinese higher education [J] *Journal of Hebei Normal University (Educational Science Edition)* 16(02):116-121

[4] Ariel Robert, Dunlosky John, Bailey Heather. (2009) Agenda-based regulation of study-time allocation: when agendas override item-based monitoring. [J] *Journal of Experiment* . 138(3)

[5] Du Hua, Yang XH. (2018) Evaluation index research on mobile learning tools: The case of museum app evaluation[J]Distance Education in China 08:63-69.

[6] Lv ZQ. (2006) Interactive Teaching Mode of Perceptual and Rational Thinking and Construction of Excellent Courses *[J] Modern Education Management* 09:83-84.

[7] Liu HX. (2018) Value, Problem and Interest: The Role Orientation of Teacher "Guide" [J] *Theory and Practice of Education* 38(29):42-44

[8] He Lin, Shi ZB. (2015) Intervention studies based on the strength model of self-control:A review [J] *Chinese Mental Health Journal* 29(05):366-371

[9] Xie RB, Lu Lu, Li WJ. (2016) The Study-Time Allocation of Agenda-Based Regulation [J] *Studies of Psychology and Behavior* 14(02):283-288.

[10] Lin Fan. (2016) Causes,Harms,and Correction of College Students' Addiction to New Media [J]*Heilongjiang Researches on Higher Education* 04:98-101