Research and Practice of Optimizing Classroom Teaching Methods

Hai-Long ZHANG and Ye-Ye ZHANG
Changchun University of Technology, Changchun, Jilin, China
zhanghailong@ccut.edu.cn

Keywords: Classroom teaching; Teaching method; Teaching effect.

Abstract. Classroom teaching is the main channel for students to acquire knowledge. How to play the role of classroom teaching for 50 minutes? In the classroom teaching, with the design of teaching content and the adjustment of teaching methods at different time intervals, the students' excitement and main energy are concentrated on the key points and difficulties of the course teaching content, so as to give full play to the classroom teaching. The author proposes to divide the classroom teaching into "5 ways and 7 ways" to maximize the effectiveness of classroom teaching.

The Main Problems in Current Classroom Teaching

According to the survey and in-depth teaching and comprehensive papers on classroom teaching, we can find that the following main problems exist in classroom teaching: (1) teaching methods are single, outdated, students are not interested, the classroom atmosphere is dull, there is no vitality; (2) teachers Excessive use of content explanation, content expansion and extension is not enough; (3) teaching methods lag behind the needs of science and technology and social development; (4) insufficient integration with educators in the process of teaching; (5) the art of classroom teaching and There are not many methods to study; (6) the content of the textbook is empty, not forward-looking and so on.

Cognition of Teaching Effect and Time Value in Classroom Teaching

In view of some problems in the classroom, the author explores and studies the timeliness of classroom teaching, and finds that there are four basic contents for the time value law of classroom teaching: First, the ability of students to receive knowledge training is proportional to the value of time; The value of time has a curvilinear trend with the development of things; the third is that the value of time always fluctuates around the physiological and psychological characteristics of people. Fourth, with the advancement of classroom teaching time, after a certain point, the acceptance and absorption of knowledge by students is in line with the law of “declining marginal utility” in economics.

In order to better play the maximum value of 50 minutes in teaching, the research and teaching practice found that in the 50-minute classroom teaching process, the time value showed a fluctuating state with the changes of students' physiological psychology. Within 50 minutes, the student's physiological and psychological state is divided into five time zones, which are periodic variations of the trough-wave crest-valley-peak-valley, but each undulating cycle has different characteristics and each student has different times in their troughs and peaks.

Countermeasures against the Periodic Variation of the Trough-peak

\(^{\text{“Marginality” is a key term in economics and often refers to the meaning of “additional”. Marginal utility refers to the added utility of adding a new unit of merchandise. The law of diminishing marginal utility refers to the law that the marginal utility of an item tends to decrease as the consumption of an item increases. Here, education is a special form of consumption for students, and the increase in the acceptance of knowledge is an increase in consumption.}}\)
Import Time: 5 Minutes

(1) The first 3 minutes, the character enters the time zone. The meaning of this three-minute is like a prelude to a movement. The teacher must have the director's effort to promote the excitement of the students from the inter-class activities to the classroom learning, guiding the students to focus on the classroom teaching content, and Shorten this time zone to extend the excitement time zone. In the actual teaching, there are often two misunderstandings: Firstly, the rush to enter the question, the students' emotions are still in the middle of turmoil, that is, rushing to the topic, this is tantamount to a person who sleeps when he is blind. Not good will cause chaos in the whole class; secondly, it will not be a long time. LuoLuoluo, no margins, not only cannot close the heart, but dispelled thinking. Therefore, when the character enters the time zone, the author has taken along with the students to recall the main content and related knowledge points taught in the previous course, including the key points and difficulties, to play the memory initiative of the students, and to smoothly realize the transformation of the role into the time zone.

(2) After 2 minutes, the perception is getting better. In the past 2 minutes, the students have responded from the passive acceptance to the need to actively acquire knowledge, and seized the students' demand for knowledge during this period. The author took the main content, key points and difficult points taught in this class to the students. Students adjust their energy in the following different time zones to smoothly realize the conversion of troughs and peaks, avoid the focus and difficulty of content appearing in the trough, and give full play to the initiative of students' self-regulation, and realize the role of student guidance through 2 minutes.

Excitement Time: 20 Minutes

The first golden time zone. In this time zone, the excitement of students has shifted to the content of the classroom, and the physiological psychology has entered the highest peak. Teachers must take the opportunity to introduce the students' thinking into the best realm and maximize the excitement time. The density and intensity of teaching should be To reach the maximum, the key points and difficulties are solved as much as possible, making it the golden time zone for the spring of flowering and the early morning of sunrise. Each teacher must combine the characteristics of the courses he or she teaches, and at this time, the key points and difficulties of the course will be taught to the students in a refined way, so that students can absorb as much information as possible in the time zone where knowledge is most accessible. The flow of knowledge to meet the student's ability to accept the fastest growth over time.

Adjustment Period: 5 Minutes

Psychological transition time zone. Half of the teaching time has passed, and the student's excitement process has begun to turn into a suppression process, and a fatigue trough will appear. Fatigue is a normal physiological and psychological phenomenon, which is a normal function of physical energy consumption and recovery. Fatigue after 25 minutes of classroom teaching is a kind of moderate fatigue. This kind of moderate fatigue is inevitable and necessary. Teachers must make adjustments to help students get through the fatigue valley. There are often three misunderstandings in actual teaching: one is Zhang and there is no relaxation. The frequency and rhythm of teaching are always in a high-intensity state. No matter whether the students are tired or not, even if they are drowsy, they only “pour” and the results are often counterproductive. According to the principle of psychology, when people pay attention to certain objects, the corresponding area of the cerebral cortex produces a dominant excitatory center, while other areas are in different degrees of inhibition; the dominant excitatory center is not fixed, but with the inside of the brain. Or changes in external conditions and constantly change and transfer. This reveals that our teachers, the state of excitement and inhibition of the cerebral cortex, are actually two states of work and rest. They are alternating and transforming each other. They should be relaxed and have a good mood. Therefore, in the middle of a lesson, the student's excitement center should be moderately transferred to get rest,
eliminate fatigue, and then induce a second excitement. This is the reason why I divide 50 minutes into the first 5 minutes, the middle 20, 5, 15 points, and the last 5 minutes. Second, forced excitement. When the students are tired, there will inevitably be various manifestations. The teacher may let him stand up and listen to the class, or swear by the brain to repel the meal, not only can not eliminate fatigue, but will increase its psychological resentment. It's like being annoyed when people are asleep. This adjustment of 5 minutes is like a song passing through the door. It is also like a person on a trip. You can arrange a minute of humor, or a minute of joke, or a minute of light music, or a minute of class, also Can change the teaching methods, such as exercises, student speech and other methods. Through such adjustments, the students' attention is brought to the main learning, so that students can re-enter the state of excitement from both physical and psychological aspects. At this time, the author uses the way of telling the case to adjust and help students to complete the transition from the transition time zone to the second upper peak. Through the case teaching to adjust the student's first 25 minutes of tension, activate the cerebral cortex in the first 25 minutes of inhibition, let the excitement of the first 25 minutes to rest, and also use the case narrative to activate the serious classroom atmosphere of the first 25 minutes. To adjust the classroom atmosphere to a process that is actively accepted by a student, to self-think when describing the case, and to combine the previous knowledge in the case for self-analysis and application. This 5-minute transition period makes the nervous thinking process Relieved, a new power for the "engine" to achieve a smooth transition to the next golden time zone.

Regression Period: 15 Minutes

The second gold time zone. After a five-minute adjustment transition, the student's physiology and psychology showed a second peak state, so it was called the return time zone. Teachers should take the initiative to push the teaching to a new climax. If the first gold time zone is based on the new course teaching and the students' thinking ability is the main one, then the second gold time zone should focus on consolidating new lessons and ability training. Of course, it should not be too restrictive. In this time zone, the author adopts a comprehensive approach that combines knowledge points with case analysis to ensure the use of knowledge in the classroom.

Ultimate Time: 5 Minutes

(1) The first 3 minutes, summarizing the response time zone. At this time, the students tend to be fatigued, and their attention gradually disperses and ends. Teachers should increase the amount of information, speed up speech, strengthen emotions, sum up new lessons, and successfully complete tasks. The ultimate best place should be: the completion of the teaching plan, and the students will have an endless aftertaste. In this time zone, I generally summarize and summarize the first three minutes, summarizing the main contents, key points and difficulties in this section, so that students have a general grasp of the content of this section, and form the knowledge structure and system of this lesson. And echo with the last 2 minutes before the start, improve the teaching effect of the classroom.

(2) After 2 minutes, think about the problem time zone. Put forward thinking questions for the knowledge points in this section, leave room for students to think, and continuously improve the level of their own "fishing", find and grasp the law of teaching.

Conclusion

Through the different treatments of these five periods, combined with one recall, two guides, three elaborates, four adjustments, five comprehensive, six summary, seven thinking ways to complete the teaching and learning of a course, this "5 time period 7 kinds The method conforms to the physiological characteristics and psychological laws of the students, and constitutes the time "field" of classroom teaching, which can fully reflect the value of 50 minutes, so that the classroom teaching effect is at its best.
Each course has its own characteristics of the subject and course. Specific to the corresponding subject or course, the teacher should constantly explore the teaching methods suitable for the characteristics of the course and the course content itself on the basis of adequate preparation. In the classroom teaching, students should fully consume the time and economic investment in the classroom education process, and try to improve the input-output ratio of students and teachers themselves. Improving the teaching effect and efficiency of the classroom is the key link to improve the quality of personnel training. Only by optimizing the necessary links in the classroom can we effectively improve the quality of personnel training and the level of teaching.

**Acknowledgement**

The research results of the “Thirteenth Five-Year Plan” of the Education Science of Jilin Province in the “Thirteenth Five-Year Plan” in 2016, “Study and Practice of Teaching Methods of Color Composition” (Project No.: GH16149)

**References**

