

Analysis on Failure in Class Control Measures of Engineering Education

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Keywords: College Classroom Teaching Management, The Enthusiasm of Students' Participation, Assess and Evaluation in High Education

Abstract: In this article the authors present the unsatisfactory position of student performance in current college classroom teaching and propose the issue on effects of classroom teaching management. By analyzing the main factors lead to the failure of classroom control measures, the authors sought the reasons for the low efficiency of college classroom teaching. The authors mainly dissected the problem from the perspective of students and their learning behavior, also educational administration and its effect. They summarized the reasons into the lack of participation of college students in class, further analyses found that the unenthusiastic classroom behavior of college students arose from the dogmatism of educational administration model. The authors also analyzed the impact of educational administration regulations on classroom teaching control and the enthusiasm of students' participation in the classroom, and finally implicated an educational administration reform.

1. Background

Recently, China has implemented the "Overall Plan for Deepening Reform of Education Evaluation in the New Era" issued by the CPC Central Committee and the State Council, and further to implement the "Proposal for the Undergraduate Education Teaching Audit and Evaluation of General Colleges and Universities (2021-2025)" which aim at making overall arrangements and institutional arrangements in the new development stage of the "14th Five-Year Plan", China's Ministry of Education has set off a new round of education and teaching evaluation movement in recent years, which has achieved significant promotions in improving teaching quality. In the second category of the "Undergraduate Education Teaching Audit and Evaluation Index System (Trial)" promulgated by the Ministry of Education on January 21, 2021, an assessment item of Classroom Teaching has been added. However, the specific content of the assessment still focuses on the evaluation of students' learning outcomes and textbook construction. There is still no assessment indicator for classroom teaching quality. Education colleagues urgently need to construct an actual classroom quality analysis model based on classroom teaching content, student foundation, and teaching objectives, and to grasp the construction of college classroom teaching quality to promote the overall improvement of teaching quality [1].

After three years of evaluation, the education quality of undergraduate colleges and universities has improved significantly. However, there are problems still leave in the college students' classroom performance, the current situation of classroom control is worse. Although colleges and universities have been focusing on teaching reform and improving teaching methods in recent years, there are still continuous criticisms in terms of classroom teaching quality, especially the learning efficiency of students. The teaching reform is advancing, but it still cannot eradicate the phenomenon that has always existed, that is, students do not listen to the class and do their own things. Perhaps the influence of information technology on young people is relatively large. More and more college classrooms have seen students playing with mobile phones, playing games, and watching videos during class, and even frequently skipping classes, rarely or not participating in classroom interactions at all. There are comprehensive summary articles on the Internet that give a comprehensive picture of the real situation of college classrooms today. According to survey statistics published in web [3], it reveals data as follow:

1) Mobile phone usage: In the classroom, 80% of students check their mobile phones on average every 10 minutes, among which 60% are for social media, browsing web pages, or playing games. 55% of students admit that using mobile phones in class affects their learning.

2) Absenteeism: Data from a university shows that more than 20% of students have a record of skipping classes during the semester, among which more than 80% are due to personal reasons (such as laziness, other affairs, etc.).

3) Classroom participation: In a semester of classes, only 30% of students have actively answered questions or participated in classroom discussions. 70% of students say they are afraid of answering incorrectly or being laughed at by classmates and dare not participate in classroom interactions. 90% of teachers believe that the low classroom participation of students affects the quality of teaching and students' learning outcomes.

4) Response to teaching content: 40% of students say that if the classroom content is boring, they are more likely to play with their mobile phones. Among the students who skip classes, 35% say they do not like the current course content, and 25% think the course content is irrelevant to their interests or career plans.

5) Teacher cognition: 65% of teachers notice that distracted students are often uninterested in the course content or feel the content is too simple. 40% of teachers believe that students playing with mobile phones in class is the biggest teaching challenge they face.

6) Student feedback: 75% of students say that if the course content is lively and interesting, they will focus more on the classroom and reduce the use of mobile phones. 60% of students believe that the teacher's teaching methods and content have a great influence on their learning attitude.

From these statistics, we can see the real situation of college students' classroom learning effects. In most cases, due to the precise specifications of academic management and the strict requirements of student management, students appear to be studying hard in the classroom in terms of classroom order performance, but the actual effect is worrying. For example, teachers go through the content in the schedule and then ask students questions based on the original content, but no students can answer, causing the teacher to be psychologically collapsed.

Another common phenomenon is that teachers teach their classes, and students do their own things. This leads to classroom disorder, with students talking, playing games, doing homework for other courses, sleeping, and so on. Teachers cannot control the teaching scene, which further intensify teachers' helplessness in just teaching their own classes. This phenomenon naturally attracts the attention of the management stratum, and thus governing classroom teaching order has become the theme of improving teaching quality. This phenomenon directly leads to student aversion to learning and teacher escape from teaching, and then it becomes a Tough problem to be solved in teaching.

The application of internet technology has produced a lot of learning media, which has squeezed

the students' expectation of learning effects on classroom teaching. If the classroom teaching is not well arranged and managed, or even worse, there is a problem with classroom management, it will often stimulate students' negative emotions towards learning effects. Surveys have found that classroom management problems will also have a negative impact on the quality of teaching [2].

2. Main Measures for Classroom Teaching Control

Based on many years of teaching experience, we conclude the quality of classroom teaching mainly depends on the organization of teaching content and the control of teaching order. For the aspect of teaching content, different disciplines, different majors, and different courses each have their characteristics, which are difficult to discuss uniformly. However, the exploration of teaching order control has gradually heated up in recent years, and the number of papers on this topic has continued to increase. Many education experts have pointed out methods and measures for classroom management.

Classroom control and management were originally the themes of primary, secondary schools and kindergartens. After the expansion of colleges and universities in China in this century, many secondary and technical schools were merged and upgraded into colleges or universities, and classroom management measures from secondary and technical schools were used in colleges and universities. In recent years, as the original university classrooms have also appeared classroom order control problems, these original secondary and technical school classroom management measures have become popular methods in college teaching management.

Generally, measures to strengthen classroom management can be divided into the following categories: roll call or statistics, intermittent arrangements, use of response phrases, implementation of reward and punishment rules, carrying out accompanying activities or operations, silence, etc. [4].

1) Roll call or statistics. Gather students' attention through regular or irregular roll calls, and collect students' attention by counting homework, understanding or other student states.

2) Intermittent arrangements. Re-stimulate students' attention by regular or irregular breaks or interspersed activities such as re-establishing sitting posture.

3) Use of response phrases. Teachers require students to use uniform phrases to respond to classroom content or classroom effects and state, mobilizing students' enthusiasm.

4) Implementation of reward and punishment rules. Teachers formulate reward and punishment rules for classroom order, and implement rules when conditions for rewards or punishments are met, enhancing the seriousness of classroom order management.

5) Carrying out accompanying activities or operations. Attract students' attention to teachers, projects, or course content through accompanying activities.

6) Silence keeping. Teachers stop making a sound, and only some listeners will wait for the teacher's next words, thus driving the whole classroom students to wait for the teacher to continue the lecture, thereby regulating the classroom order.

There are many other methods of intervening in students' attention in classroom management that are also in use. Yueh-Min Huang made business simulation games (BSGs) linked to skills development, and the flipped classroom is acknowledged as a successful approach for encouraging student-centered learning [8]. Sihan Fan analyzed specific application cases of AI technology in teaching [9], Zhao Wu proposed construction of professional practical teaching system through the whole process of undergraduate talent cultivation [10]. We here only summarize a few common ones. Their use conditions are different, which may be related to the characteristics of the course and the teacher's style, and will not be detailed.

3. Attribution on Ineffective of classroom teaching control measures

In the past decade or so, there have been reports in the official media, newspapers and magazines that college students do not like to attend classes and that college students skip classes, and these phenomena occur under the measures taken by schools to promote the quality of classroom teaching. In university classrooms, there have been cases where classroom teaching order interventions are ineffective. Obviously, the reason why the measures of classroom teaching management are ineffective or even ineffective are concentrated in the classroom behavior of students. Moreover, students' boredom in the classroom is in stark contrast to their enthusiasm for exploring on the Internet, which reflects the problems that exist in the teaching management process, that is, the academic affairs department overly pursues the formal teaching order and ignores the students' participation behavior.

Experts have a lot of research and hold data on student participation in the classroom, and in general [7]. Survey results show that the proportion of students with positive classroom participation behaviors is not high, and about half of the students have a high level of critical thinking. Students' participation in the classroom is not entirely determined by the students' own factors, but also the satisfaction of adaptive needs; and the improvement of the quality of students' classroom participation not only depends on the students' own initiative, but also needs external education guidance [5].

The experts also suggested management measures to improve classroom participation⁵. Primarily in a student-centered perspective, it is effective way to improve the quality of the classroom by motivating and guiding classroom participation behaviors, it is cultivating and improving students' critical thinking. The second is the perspective of diverse services. Advocating diversified services, focusing on cultivating students' thinking skills and establishing friendly teacher-student relationships and so on [6]. Some experts believe that the knowledge content arranged by teachers is lagging behind the development of the times, so it is recommended to update the teaching content in a timely manner. From these measures and suggestions, we can conclude that we must rethink whether the teaching management is student-centered in classroom teaching and whether the management idea is positioned as a service concept.

However, we notice a problem, that is, the teaching management pays too much attention to the so-called five or six major pieces of classroom teaching, which are regarded as class teaching requirements and lesson preparation proof files for check, results in teachers over-relying on teaching resources, PPT and other text teaching resources. The teaching process is carried out in strict accordance with the procedures written in the teaching plan, and the teaching progress management is detailed to the time, to pinch the minute and second. These measures ignore the mobilization of students' enthusiasm for participation and the search for their interaction opportunities. Some management measures even exclude students' attention from lessons, though admitted students into the classroom on the agenda.

4. Analysis on difficulty in the classroom teaching control

College classroom teaching quality is the key to college teaching quality and must be given enough attention and emphasis. In order to standardize the teaching behaviors, the academic affairs department of universities has made clear specifications for teachers to write syllabus, lesson plans, PowerPoint presentations, experimental reports, assessment forms, etc. Teachers follow the teaching norms to teach. This set of norms is actually a decomposition of the goals of the cultivation for students to acquire knowledge, skills, and credits in specific courses, and they have become the executive goals of classroom teaching.

In the historical development of teaching methods, it has always been a model in which the training goal guides the teaching method and the teaching process. With the update of science and technology

and the development and progress of society, in order to meet the needs of society, the teaching objectives have gradually changed. In this process of development, it is inevitable that goals will be set too high, change too quickly, or deviate from the teaching foundation.

In the development of education and teaching in China, there have been two times that the teaching goal is ahead of the spontaneously cultivation target and makes it difficult to adapt to the students' situation. One is at the beginning of this century, the popularization of online course teaching make students learn through modern media, resulting in lack of the previous learning in procedure of knowledge accumulation, the teacher has to overwork to repair its process in order to promote the realization of the teaching goal. Correspondingly, the teaching goal is also difficult to be achieved, that made the education community begin to pay attention to the procedures of teaching. Another time is that in recent years, computer science and intelligent science have been applied to various industries, and new engineering education has emerged, which has also changed the process and plan of teaching and student's learning in colleges and universities. Multimedia courseware such as animations is dazzling. Piles of documents of teaching regulations also make the goals for students unattainable which is set by the instructional design, for that it's hard to get so much done with limited time and energy. The most primary reason lies in the fact that the documents of those teaching procedures were designated by few experts lacking teaching experience, and they did not carefully examine the details of the teaching and learning process.

In the current teaching implementation process, a 64-hour course should be divided into 32 lesson plans, each lesson plan has introduction, text lesson, interaction, questions and other standard blocks, especially must each lesson plan have classroom teaching objectives clearly written, that is, a course should have nearly 32 pieces of classroom teaching objectives to plan. Although interaction with students have also been reserved, in actual operation, this kind of program arrangement is rigid and passive, for that it burst the students' rains and cannot have the effect of interaction, and the enthusiasm of students' participation is not high, which ultimately weakens the effective of students learning in classes, and the students' participation in the course is not ideal.

We think about whether the management of training programs and classroom lesson plans can be appropriately relaxed, and teachers should find new objectives in classroom teaching, it can be dynamically found in the teaching process to guide the teaching process automatically. Because in the actual teaching process, there are many on-site scenarios or problems that are not predicted beforehand, and there are also many teachers who fail to understand in advance that the background of the learning situation will be revealed in the teaching process, and other situations may occur which can result in the failures of the lesson plan execution. In these cases, teaching becomes an improvisation, an artistic act, an innovative activity, rather than a rigid program. In fact, most teaching activities have such attributes.

5. Conclusion

We believe that the application of excessive goal management in classroom teaching leads to the disconnection between teaching behavior and students' learning process, resulting in students' low enthusiasm or even inability to participate in classroom teaching. This is the main reason why it is difficult to manage the behaviors of students in teaching spots in colleges and universities, and the main reason that teaching control measures are ineffective.

We studied the facts, made conclusion that to solve the problem of classroom teaching efficiency in colleges and universities, the key is to carry out teaching management based on students' classroom participation. Further emphasis should be placed on finding ways to reform the rules and regulations of teaching management and change the mode of teaching implementation, so that students can participate, are willing to participate, and do participate. Thus we can truly implement student-

centered classroom teaching.

This paper only analyses the reasons in behalf of teaching management for the poor efficiency of teaching, and there should be reasons at other links, and the relevant research should have good prospects. Limited by time and energy, those what are not mentioned in this paper, need to be discussed and guided by experts!

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