

Limitations and Improvements in Cultivating Critical Thinking in Schools of the Chinese Education System

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Abstract. With the demand for new talents in the 21st century, the students trained by examination-based education can no longer meet the abilities needed for future work, and education reform has become a hot topic in today's society. How to train and cultivate the skills needed in the 21st century in daily teaching has become a difficult problem. This paper focuses on the cultivation of critical thinking ability, analyzes the inadequacy and limitation of the existing critical thinking cultivation, and finds that the limitation mainly exists in the teacher's insufficient ability and does not pay attention to the cultivation of critical thinking ability, the students themselves do not have consciousness and the influence of exam-oriented education in these three aspects. Based on the limitations of critical thinking training, this paper gives suggestions on curriculum reform, changes in teachers' teaching methods, and changes in students' consciousness. Based on these existing shortcomings, this paper offers three different suggestions in terms of curriculum, teacher instruction, and changes in student mindset.

Keywords: Critical Thinking; Limitations; Teacher.

1. Introduction

The definition of the concept of critical thinking, from the early ancient Greek scholar Socrates, put forward inquisitive questioning and then in 1910, John Dewey first gave the definition of critical thinking, the research on critical thinking is constantly deepening, and the importance of critical thinking has gradually increased [1]. Critical thinking can be defined as the evaluation of thinking through certain criteria, and then improving thinking, is reasonable, reflective thinking, both thinking skills and thinking tendencies. Critical thinking, as an advanced way of thinking, allows individuals to find the essence of things in existing knowledge and experience, and to find reasonable solutions through reasoning, which requires people to have good logical thinking skills and logical knowledge [2]. The research of critical thinking began in 2006, after three stages of research excess, blossoming, and the emergence of results, the current critical thinking ability in China mainly includes research under the orientation of disciplines and core literacy, as well as research on theoretical knowledge [3].

In the twenty-first century, "soft power" is regarded as an indispensable core competency of a person, which is crucial in both study and work. Many countries have recognized the importance of soft power for future development and have reformed education to some extent. Finland, for example, has proposed that students in the 21st century need to develop "transversal competencies" that integrate values, knowledge, and attitudes, and has adopted curriculum reforms to cultivate these competencies [4]. In China, how to cultivate talents of the new era to meet the needs of the future society, and how to complement human capabilities with modern technology to achieve better results has become a matter of great concern, education reform has become a hot topic in the limelight. Educators are continuing to study how to incorporate the skills needed in the 21st century into the original education system, transforming China's education system from a purely test-based education to a quality education that incorporates the development of soft power. China's research on critical thinking has been fruitful in the past two decades, and there has been a certain degree of progress in both curriculum reform and education system reform, and more attention has been paid to incorporating soft power training into the usual curriculum system. However, in actual education and teaching,

there are big limitations and deficiencies. For example, teachers' own lack of ability or lack of attention to the cultivation of critical ability makes the cultivation of critical thinking have sufficient theoretical knowledge but the effectiveness of the practice is relatively lacking in this problem. This paper will analyze the limitations of critical thinking training and put forward reasonable and feasible solutions.

2. Current Situations

With the gradual development of science and technology and the need for future talents, China has gradually entered a phase of education reform after realizing that the existing education system cannot meet the demands of today's development and the needs of students' future work. Starting from the blossoming period of critical thinking research in 2012, researchers have focused on the curriculum reform of basic education for the cultivation of critical thinking by formulating new curriculum standards, changing teaching methods, and combining online and offline [3]. By the 2017 critical thinking research results of the emergence of the period, the newly formulated curriculum system focuses this ability cultivation to the core literacy training, and in the usual teaching more to encourage students to think deeply, more use of critical thinking to solve problems [3].

Although the research results on critical thinking education in the past decade have been fruitful, in the process of cultivating critical thinking, there often exists the awareness of cultivating this ability, but the lack of real practice and application, and there are still many problems that need to be solved in the present education system. In this paper, the problems encountered in the process of cultivating critical thinking in China's education system will be described from the aspects of teachers' teaching, students' behavior, and the influence of test-oriented education.

2.1. Teachers' Neglect Ability Training

In the process of cultivating critical thinking, in addition to a complete and reasonable curriculum arrangement, the correct teaching methods and positive guidance of teachers are an indispensable part of the cultivation of critical thinking. However, many teachers are often aware of the importance of cultivating critical thinking in teaching, but they fail to reflect it in teaching as well as in learning tasks such as examinations. The problem arises mainly in the following two places.

2.1.1. Neglect or reduce the cultivation of critical thinking

First, teachers neglect or reduce the cultivation of critical thinking in the usual classroom.

In normal teaching activities, for example, in the teaching of new knowledge, students can spread their minds through classroom questions and answers and group discussions, and explore the context of knowledge independently.

There are two main problems that teachers face in classroom Q&A: few and limited questions and a lack of proper feedback and guidance. Richard Paul's theory mentions that questions are divided into judgmental and factual questions [5]. In the usual teaching of teachers, they tend to focus on factual questions that state the correct answer and neglect critical questions that develop thinking. Students have fewer opportunities to think about questions in class, and teachers do not give reasonable explanations for students' answers when they give different answers, but just ignore the students' answers to give the correct answers. Students in this process, do not know their thinking errors and loopholes but are "forced" to accept foreign ideas. Because of the lack of guidance, over time, students will gradually not pay attention to their ideas, "It's not right anyway, why don't you just stop thinking" and directly wait for the teacher to give the answer, losing the ability to critique and innovate things and knowledge.

Secondly, students will not express their opinions for fear of being wrong. From the student's perspective, what comes from the teacher's mouth must be correct, and regard what is written in the textbook as the truth, without the consciousness of critical thinking [5]. This phenomenon is closely related to the teacher's feedback on students' answers. Some teachers will criticize and suppress

students for giving wrong answers or ideas that do not match the content of the textbook in their normal teaching. Students lose self-confidence in this process and do not express their views or are afraid to share their views in future classes for fear of being reprimanded by the teacher.

When teaching new knowledge, teachers like to use group discussions to allow students to first exchange their ideas and share them. This learning mode of discussion before teaching allows students to establish their own thinking mode first and then add the teacher's ideas. However, such a teaching mode has many problems in practical application.

Even if the course syllabus arranges group discussion as course content, in actual teaching, many teachers will ignore this part because of the lack of time, thinking that the discussion is useless, and other reasons. However, this is often an important moment in the classroom that can exercise students' thinking and disperse their own thinking, so reducing group discussion is very detrimental to the cultivation of critical thinking.

Very often, even if the group discussion is arranged, students do not make good use of the time given to discuss the problems assigned by the teacher but use this time to chat and rest. At this time, the teacher often can not give all the groups reasonable guidance and supervision because there are too many groups, so the process of group discussion the vast majority of the time is not reasonably utilized, resulting in the students having the opportunity to think but no good results of the situation. Over time the process of sharing ideas in group discussions has been ignored by teachers.

2.1.2. The lack of teachers' own abilities leads

In the process of critical thinking development, it is very important to involve students more and construct a student-centered teaching model. This requires teachers to have the ability to guide students instead of directly imparting knowledge and to change the subject-oriented teaching model into a human-centered teaching model [6]. This requires a higher level of competence from the teachers themselves than traditional teaching. In weekday teaching, if the teacher himself does not have the ability to think critically, only focusing on the single point of view given in the books, the cultivation of this ability of the students will certainly not achieve good results. For example, in the classroom, when a student mentions a point of view that the teacher has not envisioned, because the teacher has not envisioned other possibilities for this point of view in advance, he or she will not be able to analyze and explain the student's ideas in a good way, and the discussion of critical thinking will not be generated as a result, which is certainly a great pity. So the lack of teacher competence is also a limitation in the process of critical thinking development.

2.2. Students Themselves Do Not Attach Importance to

In many classrooms and curricula nowadays, there are many opportunities for students to think for themselves and put forward their ideas. However, many students do not emphasize the importance of thinking and do not think when the teacher asks a question, but wait for the teacher to give the answer. Or they go straight to the textbook to find the right answer and memorize it without thinking. In subjects such as history and politics, there is even a pattern of learning by rote without studying the events clearly. Such a mode of learning ignores the process of thinking, and critical thinking is even less likely to occur. The tendency of self-centered thinking is even more limited to the students' impartial thinking, students do not take the initiative to think about the views of others and themselves in order to avoid the objections of others and only accept the standard answers written in the textbooks, which is very unfavorable to the cultivation of critical thinking skills [5]. Therefore, student's lack of attention to the development of this ability is the second limitation.

2.3. Impact

2.3.1. Impact of exam-oriented education

China's education system has been deeply influenced by exam-oriented education, which emphasizes the pursuit of correct answers, the application of authoritative knowledge to exams, the ability to

transfer knowledge, and the neglect of the cultivation of critical thinking [7]. Teachers often do not have time to guide students to think independently and explore ideas in their normal teaching because of overloaded teaching tasks and the need to ensure that all the content that will appear in the exam is transmitted to students. Therefore, even if there is a teaching goal to cultivate students' critical thinking, it is gradually ignored in the later stages of teaching. However, under the influence of the general environment of China's college entrance examination, it is difficult to change the examination-based education system, so this constraint is long-term and difficult to change.

2.3.2. Impact on students' future development

Education in the 21st century emphasizes the development of diversified abilities. To cope with the development of science and technology and the needs of future work, the Innovation Initiative has categorized education to develop 21st-century skills into five areas. The "Innovation Initiative" divides the education that mainly cultivates 21st-century skills into five areas, and critical thinking and adaptive and creative abilities are divided into the third area [8]. Nowadays, exam-oriented education in China's general environment often fails to cultivate students' critical thinking and other important skills, which will have many effects on their future work path.

First of all, with the development of the artificial intelligence era, technologies such as ChatGPT will appear more and more in future education. If students do not think and criticize the knowledge and confidence pushed by AI, but just accept all the information, students will gradually lose the ability to think and infer and argue that they possess as human beings [9]. In the era of artificial intelligence, machines can replace humans to do pure memorization work, and what humans need to do is cultivate innovative thinking and be critical of things. Instead of accepting all external knowledge and information, they should synthesize their own viewpoints by integrating different viewpoints and making innovations. The future of the work of "professional matching" thinking has been backward to the current employment awareness and the future needs of workplace talent [10]. Today's employment requires people to have more adaptability and the ability to learn new knowledge and ideas. Test-based education often ignores this and only teaches students the knowledge in textbooks, but does not teach students the learning ability needed in the future. In the future, Chinese students often find that what they have learned in the classroom over the past ten years cannot be applied to their work, and their ability to learn new knowledge is weak and limited. Therefore, they often struggle in the workplace and face the risk of being eliminated. This is why some Chinese people feel that education is not useful for their future work. Because the knowledge learned in textbooks can not be used in future work, and their ability is more limited, in the work of more difficulties and not get a good salary return, over time people have the idea that education is not useful. Therefore, to cope with the needs of future jobs, the education model needs to be changed from a purely textbook-oriented examination-oriented education to an innovative education that can develop 21st-century skills.

3. Suggestion

To change the limitations of the current Chinese education system in the cultivation of critical thinking, this paper will give suggestions from the perspectives of curricula, examination evaluation methods, changes in teachers' teaching modes, and changes in students' thinking.

3.1. Curriculum and Examination Evaluation Methods

First of all, project-based learning (PBL) is a dynamic classroom approach in which students actively explore real-world problems and challenges and acquire deeper knowledge. Students can choose a topic they are interested in or want to work on in the future, analyze the existing deficiencies of the topic, and expand their thinking to innovate. In the process, students are divided into groups to cooperate and help each other, practicing both communication and leadership skills. PBL project-based learning focuses on student-centered learning, allowing students to think out of the box and innovate. In the process of completing the research, students need to discuss with others, listen to

others' ideas, and criticize and innovate the existing research results, which is of great benefit to the development of critical thinking and innovation. Therefore, the author believes that schools can arrange a few classes in the regular curriculum teaching time for students to do project-based learning, which can also make the curriculum arrangement more diversified and enhance students' learning interests.

Secondly, in the evaluation system, from the college entrance examination this kind of basic monolithic evaluation system into a diversified evaluation system that integrates more evaluation modes [7]. For example, like the U.S. curriculum evaluation system, the integration of the usual classroom participation and quizzes to calculate the performance of the school year, and personalized development and future planning are included in the standard of whether to enter a good university. Under such an evaluation system, students no longer decide on universities through a college entrance examination but find their favorite and future direction they want to engage in continuous learning, focusing on personalized evaluation methods rather than a single examination-based evaluation system.

3.2. Teachers

First of all, teachers should do more "encouraging teaching". As mentioned in the previous section, many students do not express their opinions for fear of being criticized by the teacher for their wrong opinions, and they have developed the habit of not thinking over time. Therefore, it is necessary for the teacher to encourage the students' views in the teaching process on weekdays. For example, when the teacher throws out a question, teachers can explain in advance that there is no right answer or wrong answer to this question, and students can feel free to express their own views. After listening to the students' views, the students' views can be analyzed to give the pros and cons of the students' first thoughts before giving their own answers. In the process of teaching, teachers should also guide students to express their own ideas and encourage them to think more, changing the traditional teaching mode of multiple teachers into a dialogic teaching where teachers and students communicate together.

Secondly, before teaching students, teachers should first become critics and improve their critical and questioning spirit [7]. Teachers can learn how to develop critical thinking in two ways: by communicating more with other teachers and by learning from the educational experiences of other countries. Reimers found that the program of centralized training is not good enough to enhance learning among teachers [8]. Therefore, a model such as "Teachers' Communication Meeting" is more conducive for teachers to gain the teaching experience of other teachers and apply it to their teaching model. Chinese teachers can also learn from foreign teaching models, open Sino-foreign cooperation programs, and learn from foreign teachers through field trips and other programs to develop their teaching programs. Upgrading teachers' teaching levels and methods is one of the most indispensable parts of cultivating critical thinking. Therefore, the state should encourage more cooperation and sharing among teachers from different regions and provide more teachers with opportunities to study abroad.

3.3. Student

Students themselves should have the habit of thinking, discussing, and criticizing in their studies. They can't just accept all the foreign information, but they should think more about why they receive the information, be critical of the information, and not be afraid to share their views while adopting other people's good ideas. In the usual classroom, you can also be put forward to the teacher's point of view of their thinking before listening to the teacher's point of view, to develop the habit of active thinking and ability. Only with better cooperation between students and teachers can the current limitations of critical thinking be slowly solved.

4. Conclusion

By analyzing the existing educational programs, this paper finds that the limitations of critical thinking cultivation mainly lie in the four aspects of teachers' own lack of attention to the cultivation of critical thinking, teachers' own lack of ability, students' own lack of attention, and the influence of test-oriented education. After analyzing these four aspects, this paper summarizes some feasible solutions. First of all, teachers can use more encouraging education and pay more attention to classroom questions to motivate students and give them more opportunities to think and express themselves. They can also use more diversified teaching methods, such as project-based learning, to let students become the center of the classroom and conduct research and exploration on their own. Teachers can change from leading the classroom to assisting students in completing their learning. Students themselves should also pay more attention to the essence and logic behind the knowledge, rather than just accepting all the external knowledge and blindly memorizing it. The cultivation of critical thinking may seem complicated, but just a little change in the way of teaching in the classroom can help a lot in the cultivation of this ability. Although it is difficult to change the influence of test-based education and the college entrance examination system, teachers and students can actively make changes to strengthen the awareness of the development of critical thinking skills and try to apply them in their daily lives.

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