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## Research on the Reform of Civic Science Course Based on the "Interclassroom Behavior" of Engineering Students

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#### Abstract

In this paper, 1500 engineering college students in Jiangsu Province, China, were studied by observation, questionnaire, and categorization methods to investigate the "Inter-classroom behavior" of engineering college students. Nine types of behaviors were found: playing mobile games, watching short videos, shopping on Jindo, reading BILIBILI website, studying math or English, chatting, opening "Learning Power" app to study, drowsing and sleeping, going to the bathroom or going for a walk. The author believes that the nine types of " Inter-classroom behaviors" of engineering students reflect their needs. Integrating these student needs into the reform of the Civics course will stimulate the learning enthusiasm of engineering college students and thus enhance their Civics awareness, Civics ability and Civics self-awareness. Therefore, this paper builds a curriculum based on "physical and mental health-video productionmethodology education-examination subjects-study and study" based on the "Inter-classroom behavior" of engineering students. Therefore, this paper builds a reform system of Civic Science curriculum for engineering students based on "physical and mental health, video production, methodological education, study subjects, study and research, and sports and labor education". The sample size of this paper is still relatively small and has certain research limitations. In the future, we will expand the research base, fully explore different spatial and temporal characteristics, more comprehensively and precisely extract the needs of engineering college students, so as to study the curriculum reform based on their needs.

**Keywords:** engineering college students, Inter-classroom behavior, Civics course, reform, Civics self-awareness

#### 1. Introduction

When the Civic Science course is over, the "Inter-classroom behaviors" of engineering students can be said to be in a variety of ways, reflecting their different mentality, some students are still in a state of intense study, some students are in a more relaxed state, let us not say which state is better, just from the "Inter-classroom behaviors" of engineering students, we can probably know their preferences. For example, some students like to play games, as a teacher, whether they need to intervene, intervention should not be simple and rough to make him stop, but should be from the perspective of ideological and political education to let him do more meaningful things; and then some students love to brush short video, probably every college student has the experience

Vol. 7, No.04; 2023

ISSN: 2456-7760

of brush short video, a few students may be the same as playing games, and become a habit. It is easy for college students to lose their motivation, and it is easy to strengthen some negative thoughts; for example, some students grasp the time to do advanced mathematics or linear algebra, or grasp the time to memorize English words, which seems to be very serious and hard. They seem to be studying very seriously and hard, but the effect of learning is average. Therefore, the "Inter-classroom behaviors" of engineering students seems to be a simple activity, and each student has the right to choose what to do, but we look at the essence through the phenomenon and find that, firstly, the "Inter-classroom behaviors" of engineering students is not so rich. Secondly, the "Inter-classroom behaviors" of engineering students are closely related to their study status, attitude and personality characteristics; thirdly, the "Inter-classroom behaviors" of engineering students also reveal the inadequacy of the Civics course. In other words, we do not only want students to be consciously aware of Civics in the classroom, but more importantly, we want them to be consciously aware of Civics in their usual behaviors and habits.

Many studies have shown that the reform of the Civics course needs to be student-centered in terms of Civics content, Civics methods and Civics integration. Classroom broadcast behavior significantly affects students' well-being and attention performance (Jørntoftum, 2023). Students' pre-class discussions positively predicted their assignment scores to some degree (Tianjiao Chen, 2023). However, less attention has been paid in terms of how teachers manage unexpected student behaviours that transgress the classroom order and disrupt the flow of classroom interaction (Kevin, 2022). Teachers can encourage student participation in discussions about controversial issues by creating a safe classroom environment (Bjorn, 2023). Although student assessments are frequently used for evaluating teaching behavior, they are mainly in Likert-scale or categorical forms, which precludes students from freely expressing their perceptions of teaching (Bilge, 2022). College students have a positive attitude toward the application of artificial intelligence in ideological and political education in colleges and universities, and college students are looking forward to the intelligent services and changes brought by artificial intelligence technology (Tingting Zhang, 2023). Education leaders and policymakers have felt pressure to adopt a systematic approach to transformation enabled by digital innovation (Aidan, 2023) In terms of course format, most students prefer a mix of lectures and group activities over online learning. The focus of a comprehensive information course should go beyond basic information-seeking skills and include training in learning strategies. Gender plays a role in shaping motivation and perception levels, with female students typically scoring higher (Qianxiu Liu, 2023). Innovative pedagogy combines traditional pedagogy with techno-pedagogical approaches. Flipped classrooms, SCALE-UP, and blended learning are student-centered effective pedagogies. Teaching and learning must be centered on students' education, driven by educational ecosystem (Bianca, 2023).

They have done in-depth researches from new media technology, teaching materials, the team of Civics teachers, resources inside and outside the school, system synergy, reform principles, human civilization, education policy, ability education, synergy with majors, etc. Most of the researchers represent the connotation construction aspect of Civics, and the relevant contents of current affairs and politics representing the leadership of the Communist Party of China think

Vol. 7, No.04; 2023

ISSN: 2456-7760

that contemporary college students should know or master the knowledge that needs to be passed through Civics Most of the researchers represent the construction of the connotation of Civic Science and Politics, and they think that the knowledge that contemporary college students should know or master should be delivered and practiced through Civic Science courses. This paper intends to analyze the "Inter-classroom behaviors" of engineering students, find out the "aspirations for a better life" and "aspects that need to be improved" of engineering students, and put these "aspirations and improvements" into perspective. The purpose of this paper is to find out the "aspirations for a better life" and "aspects that need improvement" of engineering college students, and to integrate these "aspirations and improvement" into the reform of the Civics course, so as to find a direction of Civics course reform for engineering college students that is in line with their development characteristics, and to improve the reception and recognition of Civics course content of engineering college students.

#### 2. Methods

The purpose of this research paper is to reform the Civics curriculum. The design of the reform is to find the needs and interests of students based on the "Inter-classroom behavior" of engineering students, and to integrate these needs and interests into the reform of the Civics course, so as to make the Civics course more relevant to the needs of engineering students and more interesting to them, thus achieving better internalization. In the process of the study, the observation method was used, i.e., walking around between classes in the Civics course to observe what students were actually doing; the categorization method was used to classify the observed students' behavior between classes; the questionnaire method was used to further form the categorized behavior between classes into questionnaire results in order to expand the sample size and more accurately count the relevant results, and the content filled out by students was basically consistent with the actual situation; the use of heart-to-heart talk and The conversation method was used to further verify the relationship between recess behaviors and students' needs and points of interest.

## 2.1. Major composition of the selected sample of engineering undergraduates

The author observed 1500 engineering college students' behaviors between classes in college Y. The 1500 students are all engineering college students from four majors, including 417 in software engineering, 520 in data science and big data technology, 274 in Internet of Things engineering, and 289 in digital media, as shown in Figure 1.

Vol. 7, No.04; 2023

ISSN: 2456-7760

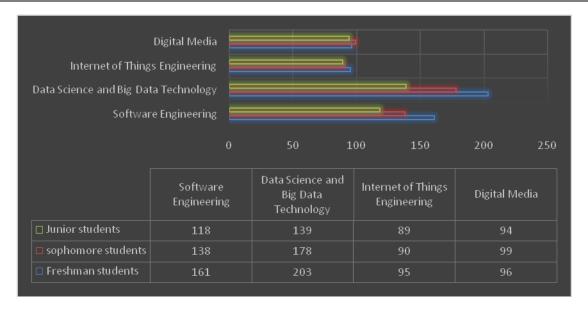


Figure 1 Composition of engineering college students who participated in the questionnaire

2.2. Questionnaire-based classification of "Inter-classroom behavior" among college students Using observation method, questionnaire method and categorization method, I found that they mainly fall into the following categories. Using observation and interview methods, the author found that the behavior of engineering college students between classes was not entirely consistent, but could be roughly divided into several categories. The author classified all the observed behaviors, set up a questionnaire, and released it through cell phones during the Civics class. 1500 students participated in the survey, and the results are shown in Figure 2.

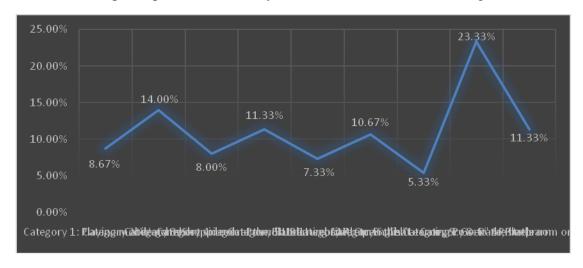


Figure 2 Classification and percentage of behaviors of engineering college students between classes

Vol. 7, No.04; 2023

ISSN: 2456-7760

Category1: Playing mobile games. As soon as these students heard the bell, they skilfully opened the mobile game app, adjusted the phone to the right position, and both hands were in the ready state, at this time, their heads were full of thinking about the scenes in the game, these students had immediately set up a barrier from the space of the class, and entered into some world of their own, very involved, everything that happened around them had almost no relevance to them, even if the teacher intervened. Even if the teacher intervenes, it is difficult for them to interrupt the game or to detach themselves from the scenes and roles of the game.

Category 2: Watching short videos. Short video content is very rich, short video platform will also be based on someone in a short video stay time and attention, like type to make the decision to push similar video, watch short video no consumer spending, just consume eyes and time, so many students brush short video at night often cause serious lack of sleep. With only 10 minutes between classes, a brush of short videos will go by quickly, and students themselves will think that they have gained a lot of information by watching a lot of short videos, when in fact much of the information is cast in the wrong light, or even repeatedly reinforced on the wrong values.

Category 3: Shopping on Poundudo. Many items on the Pound land platform are much cheaper than Taobao and Jingdong, and engineering college students are very sensitive to price, so the Poundland model of buying has caused a strong purchase stimulus for them, plus the daily release of cut-price red packets, spelling hand, etc., which feeds the college students' sense of "achievement" brought by the "circle of friends behavior" of getting something for nothing. "Many students have already found that they often buy back a bunch of useless things, but this "sense of accomplishment" and "super low price shopping satisfaction" will support them to continue to buy. Many students already find themselves buying a bunch of useless items, but this "sense of accomplishment for nothing" and "super low price shopping satisfaction" will keep them visiting the site.

Category 4: BILIBILI website. It is called "B-site" by engineering students, on which there are many experiences and processes of participating in national, provincial and municipal competitions, as well as various methods of academic research, and it has become an essential extracurricular learning website for engineering students. According to the descriptions of engineering students, many methods are not covered in university classes, but they are often used when participating in competitions, so "B-site" is especially important, and if you master the methods, you can participate in competitions. However, there are many other aspects of "short video" consumer entertainment videos on "B site", and whether the students have the ability to distinguish and filter the relevant videos varies from person to person.

Category 5: Studying math or English. These students did advanced mathematics, linear algebra, and memorized English words very seriously, and had books and notebooks of related courses in their school bags, and would take out the corresponding books during class breaks to go through them, some tried to recall what they had learned, some previewed what they would learn, some took out a certain example problem or after-class homework to write, and some repeatedly wrote English words over and over again. I calculated that I could almost read a concept of advanced mathematics, or do a simple calculation of a matrix, or recite about 10 words during class.

Vol. 7, No.04; 2023

ISSN: 2456-7760

Category 6:Chatting. Most engineering college students are not as active as liberal arts students, they do not show obvious motivation to talk, but they will silently pay attention to the information they have received or sent, and if they are student cadres, they will also pay attention to some instructions of conveying class or statistics class that need to be completed issued by the college teachers through class time. Through a period of observation, the state of these students is relatively fixed, the object of chatting and the content sent every day are relatively fixed, there are no special waves, occasionally there will be some happy information to share with the surrounding students. Chatting students have more friends, relatively lively personalities, strong language skills, can form their own opinions on topics they are interested in, have rich facial expressions, and are mostly happy.

Category 7: Open the "Learning Power" APP to learn. Of course, most of the students who open "Learning Power" APP are student cadres, who receive more guidance from university teachers on how to behave and do things, and are generally party activists, who have a deep understanding of the leadership of the Communist Party of China and the "people-centered" service concept. "At the same time, each university may have clear assessment requirements for students to participate in "Learning Power".

Category 8: Daze and sleep. These engineering college students are in a relaxed state, very relaxed, dull students are generally introverted, not rich in facial expressions, do not think too much about the content of the course, usually participate in activities is not high enthusiasm, living a relatively uneventful life; sleeping students think that the class is still relatively tired, may be too many courses, the course content is too complex, a little brain cells, may also be not regular enough, rest and relaxation. The quality of sleep in the group dormitory environment is not high enough, and of course, it may be habitual sleeping between classes.

Category 9:go to the bathroom or go out for a walk. Careful observation of this type of engineering students, their physical condition is relatively good, usually may love sports, should belong to the type of not lazy, they should love to drink water, have a good rest, stand up and walk not only to relax the whole body function, but also refresh the brain, conducive to enhance the absorption rate of the following courses.

Vol. 7, No.04; 2023

ISSN: 2456-7760

Table 1 Classification of "Inter-classroom behavior" of engineering college students in Jiangsu Y University

Inter-classroom behaviour classification	Mental state	Germany	Wisdom	Body	Beauty	Labor
Category 1: Playing mobile games	Tension		Yes			
Category 2: Watch short videos	Some nervous, some relaxed				Yes	
Category3: Shopping on Poundland	Some nervous, some relaxed					
Category 4: Look at the BILIBILI website, etc.	Some nervous, some relaxed		Yes			
Category 5: Learning Math or English	Tension		Yes			
Category 6: Chat	Relaxation					
Category 7: Open the "Learning Power" APP to learn	Tension	Yes	Yes			
Category 8: Daze, sleep	Relaxation					
Category 9: Go to the bathroom or go out for a walk	Relaxation			Yes		

## 2.3 Analysis of data based on the classification of "Inter-classroom behavior"

From Figure 2 and Table 1, we can see that engineering college students are influenced by online information, and their "behavior between classes" is ranked from eighth category > second category > fourth category = ninth category > sixth category > first category > third category > fifth category > seventh category, with the highest percentage of 23.33% and the lowest percentage of 5.33%. Both studying and playing can grow intelligence, studying Civic content can strengthen college students' morality, watching short videos can also satisfy college students' examination and pursuit of beauty, only few college students will walk around between classes, in general, the sports habits of engineering college students are still some gaps away from the goal of a strong sports country; modern network development has a great influence on the development of engineering college students; the study of engineering college students is easy to fall into The study of engineering college students tends to fall into the pursuit of minutiae and does not form the habit of systematic thinking; the shopping of engineering college students has high sensitivity to price; the sleep time and sleep quality of engineering college students need to be studied and improved.

#### 3. Results

The "Inter-classroom behavior" of engineering college students contains the characteristics of engineering majors, the character of engineering students, the habits of engineering students, and

Vol. 7, No.04; 2023

ISSN: 2456-7760

the study pressure of engineering students, etc. On the one hand, it shows the academic style of engineering college students, and on the other hand, it also shows the influence of Civic Science courses on engineering college students. Since the duty of college students is mainly to study, their study habits will be reflected in their "Inter-classroom behavior". According to Ebbinghaus' forgetting curve, if engineering students reinforce these 20 units of knowledge or behaviors every day, these knowledge or behaviors may be expanded to 40-50 units of capacity. In other words, through reinforcement in certain way, it can change the content, way and ability of engineering college students to think. The thinking course is to strengthen the positive energy of college students, and the focus of the thinking course is the current affairs and politics that contemporary college students need to pay attention to and practice. The effectiveness of the course depends on whether the contents and methods of the course combine with the needs of engineering students, cater to their way of receiving education, and the degree of implementing the mission of changing habits by stimulating endogenous motivation. Based on the survey of engineering college students' "Inter-classroom behavior", the author considers the direction of the reform of the Civics course based on the characteristics of "Inter-classroom behavior", as shown in Figure 3.

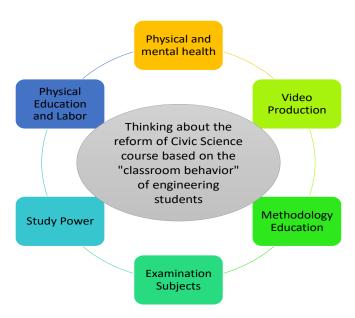


Figure 3 Thinking about the direction of Civic Science curriculum reform

# 3.1 Integrating physical and mental health into the Civic Science curriculum for engineering students

People's health is the basis of people's happy life, is an important symbol of national prosperity and national wealth and strength. Since the 18th Party Congress, the Party Central Committee, with Comrade Xi Jinping at its core, has placed the maintenance of people's health in a more prominent position, and the primacy of the people and life is a concept firmly established by the whole Party and society. On November 25, 2016, the State Council issued the "Health China 2030" planning outline to comprehensively promote the construction of a healthy China, proposing "To strengthen health education and shape autonomous and self-disciplined health

Vol. 7, No.04; 2023

ISSN: 2456-7760

behaviors". The construction of high-quality college health education system is the key to the high-quality development of college students' ideological and political education, the healthy growth of college students, and the comprehensive and effective implementation of the fundamental task of establishing moral education in colleges and universities. Therefore, the improvement of moral level of engineering college students needs to make use of the integration education combining college students' mental health education and curriculum thinking: First, we should put physical and mental health in the strategic position of priority development, and combine it with the importance to the country, to the society, to the Secondly, we should try to develop regular work and rest time and improve the quality of sleep. Engineering college students face various problems such as study pressure, introversion, collective life, self-care ability and so on, and it is difficult to guarantee the time and quality of sleep, so colleges and universities should strengthen the education of regular life from the surface; Thirdly, we should set and assess the necessary and characteristic cultural and sports activities and encourage engineering college students to They should encourage engineering students to carry out activities on their own, so that engineering students can strengthen their body, make more friends, enjoy the joy of teamwork, and have better energy to devote to their professional courses and scientific and technological innovation in the process of participating in activities.

## 3.2 Integrating video production into the Civic Science course for engineering students

The convenience of cell phone network brings two sides, on the one hand, engineering students are easy to lose themselves in the process of brushing short videos, and many short videos cater to the negative energy of "getting something for nothing". On the other hand, short videos also bring engineering students convenience in learning life, business opportunities and the pursuit of beauty, for example, they can make the boring method of explanation become vivid through academic videos, and it is easier to receive new knowledge, some students are helped to try on things, some students also sell goods through live broadcast, and some students are interested in composition and makeup through shooting short videos. Some college students have become interested in composition, makeup, etc. through shooting short videos. Therefore, we can't reject the development speed of short video, we can integrate short video into the Civic Science course for engineering college students from the following aspects, one should combine our Chinese stories and Chinese traditional culture, and make short videos to spread the stories containing Civic Science elements, for example, the short video "Begonia in the West Flower Hall" tells both the great and singable deeds of the people's servants for the people, and describes Zhou Enlai and Deng Yingchao For example, the short video of "Begonia in the West Flower Hall" tells the great deeds of the people's servants and the revolutionary love of Zhou Enlai and Deng Yingchao, and the short video of "China Press Conference" lets college students understand the great diplomacy, Chinese wisdom and Chinese self-confidence, which can enhance the attractiveness and infectious power of the Civics course and improve the effectiveness of education. Thirdly, we should learn the production technology of short videos, as engineering college students are closely related to science and technology, they should not only be familiar with the technical support behind short videos, but also join the aesthetic education, form a short video production team from the conception of framework, collection of materials to the completion of production, constantly discuss and exchange, and present the contemporary engineering college students' propaganda of mainstream ideas and the The pursuit of beauty.

Vol. 7, No.04; 2023

ISSN: 2456-7760

3.3 Integrating method education into the Civic Science curriculum for engineering students For engineering college students, whether it is professional courses or participating in various competitions at all levels, mastering a complete method can stand out in the crowd, for example, digital media students are especially good at making PPT and Flash video, they need to master video production; for example, software engineering students are especially good at software design, they need to master C language, data structure and algorithm, mathematical modeling, Phython, etc. In other words, engineering college students not only emphasize the learning of theoretical knowledge, but also learn to solve practical problems, which are inseparable from scientific and technological methods. It can be seen from the fact that engineering college students are especially fond of watching websites such as B-site and college students' catechism website that their demand for science and technology methods is continuous and vigorous with the constant updating of science and technology methods. Therefore, the Civic and Political Science course for engineering college students needs to start from their needs, firstly, to improve the cognitive level of science and technology methods, let them understand the strategy of strong science and technology, realize the importance of learning methods, which method solves which type of problems, how to solve problems by combining multiple methods, and whether the method can be improved, and engineering college students should develop the thinking ability of constantly learning methods and solving problems; secondly, to Expand the channels of learning methods, for example, explain in detail the methods of accessing literature on "China Knowledge Network" in conjunction with the strategy of strengthening the country and university in science and technology, so that engineering students can develop the researchoriented thinking of self-learning, self-exploration, self-summary and self-innovation. course will combine the contents of "People's Aspiration for Better Life", "Market Supply and Demand in Economy, and Government Intervention", "Diplomacy and Conflict of Great Powers", etc. with engineering majors to find the fulcrum of future employment of engineering students, to trigger the sense of mission of engineering students based on the world, country, society, university, discipline and talents, to stimulate their endogenous motivation, to change passive learning to active learning, passive acceptance to active investigation, and market demand to their own demand, market demand to their own demand.

## 3.4 Integrating the subject of examination into the Civic Science curriculum for engineering students

Many engineering college students will choose to take the graduate exam in their senior year, the process of the exam is very hard, for local colleges and universities, the high rate of the exam is about 40%, and the low rate is about 10%, that is, most of the engineering college students who choose to take the graduate exam will be empty in the basket. Especially now that the college entrance examination has realized that more than 95% of high school students are able to go to college, then the postgraduate examination is bound to become a diverter, the pressure on students is very high, and some students even have psychological problems, while the market economy is affected by the epidemic and the employment prospect is affected, more engineering college students join the army of graduate school; and the requirements of society for education have been unprecedentedly high, even if college students do not now Even if college students do not go to graduate school now, when they are in the future career advancement, graduate degree is a quantifiable report card, and the construction of many learning organizations and learning

Vol. 7, No.04; 2023

ISSN: 2456-7760

communities also pay more and more attention to the research-oriented thinking and ability of talents. Both the problems of graduate school and the psychological problems of college students have become important contents of the Civic and Political Science course for engineering college students. Therefore, I think that the subjects of graduate school should be integrated into the Civic and Political Science course for engineering college students, one should integrate mathematics into the Civic and Political Science course for engineering college students, mathematics is the basis of scientific and technological progress, any realistic problems can be solved by constructing models, contemporary college students can no longer stay in doing the right mathematics Secondly, English should be integrated into the Civic and Political Science curriculum of engineering students. As a tool of science and technology, English should not stay in the basic operation of memorizing words, but remind engineering students to look for the learning method of getting twice the result with half the effort, read more scientific and technical English literature, and improve their English from the whole. Thirdly, we should integrate the major into the Civics course for engineering students, the goal of Civics course is to make college students set up great ambition, understand great virtue, become great talent and take up great responsibility, the good or bad of the major directly affects the effectiveness of engineering students to serve the motherland, and the Civics course which is detached from the major will be hollow, therefore, around the patriotic spirit, craftsmanship and scientific view, etc. Therefore, the integration of engineering majors and Civics courses should be carried out around patriotism, craftsmanship and scientific outlook.

## 3.5 Integrating "Learning to be a Strong Nation" into the Civic Science Course for Engineering Students

All the members of the Communist Party of China need to log in and study every day. The many viewing links, question-answering links and concern links in the APP not only realize the diversification, personalization and intelligence of learning, especially meet the actual needs of college students for fragmented learning, but also strengthen and motivate the development direction of engineering college students. The students who use "Learning Power" APP can also get points, which is similar to the game set up to make students happy to accept it, and if the Civic Science course gives certain incentives, the "Learning Power" APP can be more widely and deeply applied. Therefore, the "Learning Power" app will be widely and deeply used. Therefore, the following points should be noted when integrating "Learning Power" into the Civic Science curriculum of engineering students: First, engineering students should really learn, because the points of "Learning Power" can be obtained through many ways. The fundamental purpose is to let engineering students acquire knowledge and develop good study habits through the learning of "Learning Power" APP. "Theoretical knowledge as a weapon to solve practical problems, learn to apply theoretical knowledge to practice, and summarize and improve in practice, if there is no realistic scene, you can also use virtual scenes to simulate; Third, to make engineering students "real innovation", through continuous learning and practice, combined with Through continuous learning and practice, combined with their own thinking, they can find innovative points in learning, and continuously promote engineering students to form innovative thinking, expand innovative channels, participate in innovative competitions and publish innovative papers.

Vol. 7, No.04; 2023

ISSN: 2456-7760

3.6 Integrating physical education and labor education into the Civic Science curriculum of engineering students

The important goal of the Civic and Political Science curriculum is to combine the in-depth implementation of the important realization paths proposed by Chinese leaders and the leadership of the Communist Party of China for people's livelihood issues, and the General Office of the State Council issued the "Outline for the Construction of a Strong Sports Country" on September 2, 2019, which proposes that "by 2035, the sports governance system and governance capacity will be modernized, the youth sports service system will be more sound, and physical By 2050, a modern socialist sports power will be built, with people's physical literacy and health, comprehensive sports strength and international influence at the forefront of the world." With the "strong sports country", "sports spirit", "national fitness", "integration of sports and education" "sports thinking and politics", "practical work", "socialism is out of work, the new era is also out of work" and other concepts, the state is paying more and more attention to the physical quality of the people and The "nine insist" and "nine to" mentioned by General Secretary Xi Jinping at the National Education Conference are not only important elements of the Civic and Political Science curriculum, but also emphasize physical education and labor education, so as to truly "establish the body with the body, the soul with the body, and the morality with physical education. It is really to "build the body with the body, build the soul with the body, increase the intelligence with the body, enjoy the emotion with the body, and cultivate the will with the body" and "build the morality with the labor, increase the intelligence with the labor, strengthen the body with the labor, cultivate the beauty with the labor, and innovate with the labor". Therefore, to integrate physical education and labor education into the Civic and Political Science curriculum of engineering students, we should pay attention to the following points: Firstly, we should establish morality through physical education and labor education, not only to strengthen the body through physical education and labor education, but also to cultivate the sentiment of "working for the motherland for 50 years", and to show the diligence and kindness in Chinese traditional culture. Secondly, to strengthen self-confidence through sports and labor education, engineering students can feel the power of the country and the confidence of the system and culture through watching the major sports events held by the country and being volunteers and participants in sports and labor education, so as to enhance their determination, fighting spirit and self-confidence to serve the motherland. Engineering college students, so that students in the actual exercise to experience, feel, and develop the unity and cooperation of fair competition style, the future in the more intense high-end science and technology competition to continue to surge forward.

#### 4. Discussion

The author took 100 CSSCI documents on "Civic Science Curriculum Reform" from China Knowledge Network and matched the Q high-frequency keywords based on Gooseeker software to form a common line matrix. Then the co-linear matrix was input into Gephi software for statistical analysis and cluster analysis, and the average degree of reformed keywords was 92.689, the graph density was 0.766, and the average clustering coefficient was 0.843, and the keyword clustering network diagram based on cluster analysis is shown in Figure 4.

Vol. 7, No.04; 2023

ISSN: 2456-7760

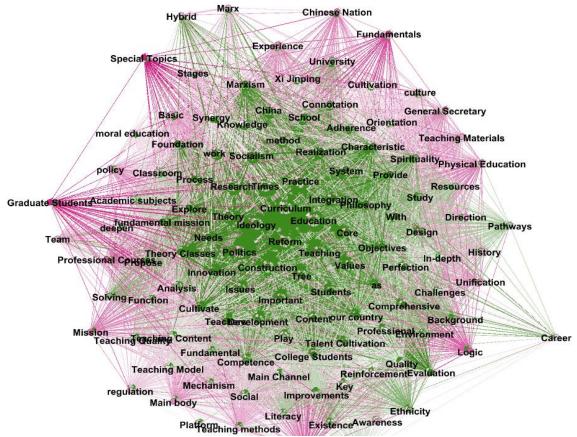


Figure 4 Keyword clustering network diagram of Civic Science curriculum reform As can be seen from Figure 4, the keywords of the literature studying the reform of the Civics curriculum can be divided into six categories, the first being Chinese national mission and educational foundation, the second being team consciousness, science and technology, and history and culture, the third being pedagogical models, educational quality, and social challenges, the fourth being Marxism, talent training assessment and methods, the fifth being systematic theoretical exploration and innovative development, and the sixth being policy and practice. These six categories of key words lead to the approach of Civics curriculum reform based on foundation, culture, challenge, method, exploration, and practice.

The content of our Civic Science curriculum reform based on the "Inter-classroom behavior" of engineering college students is verified in the keyword categorization of literature, but the formulation of this paper is also relatively new. For example, physical and mental health belongs to the basic category, and the degree of attention is further increased. Video production belongs to the cultural category, and the reform measures are more specific. Methods education belongs to the methods category, but in the past, more emphasis was placed on logical methods and evaluation, not combined with professional learning methods, and in this paper more emphasis is placed on technology. Examination subjects belong to the category of challenges, and in this paper are more specific to the general improvement of qualifications. Learning Power belongs to

Vol. 7, No.04; 2023

ISSN: 2456-7760

the Exploration category, more specifically for learning organizations and learning people, with an emphasis on continuous learning. Physical education and labor education belong to the category of practice, more specifically for sports and labor education, which fundamentally improve the overall quality of talent development.

#### 5. Conclusion

This paper explores the reform of Civics course from the perspective of behavior between classes and fully explores the needs and interests of engineering college students. Since needs and interests are the endogenous motivation of college students' learning, the curriculum reform based on college students' needs and interests is z the most effective reform. The reform exploration method in this paper is different from other methods in that it refines the curriculum reform content by students' behavioral characteristics, which in turn improves students' Civics ability and makes them make more positive behaviors. This approach is known in ancient China as: taking from the people and using it for the people.

The exploration of Civic Reform above makes engineering students more clear about their future path from different aspects, such as "physical and mental health" to let them know the importance of health, "video production" to make them more receptive to thinking and political stories and mastering video technology, "method education" to let them learn and master methods, and "examination subjects" to improve the rate of engineering students' examinations. For example, "physical and mental health" makes them know the importance of health, "video production" makes them more receptive to ideology and master the video technology, "method education" makes them learn and master more methods, "study subjects" aims to improve the rate of engineering students' study, and support the development of national science and technology with stronger research thinking. The "Learning to be strong" allows engineering students to persist in learning, application and innovation, and the "Sports and aesthetic education" allows engineering students to develop comprehensively. In a word, the Civic and Political Science curriculum strives to find a balance between the expectations of the Communist Party of China for young talents and how to make college students get more, considering both the degree of supply of Civic and Political Science curriculum and the degree of demand of engineering college students. This paper is based on the "Inter-classroom behavior" of engineering college students and considers more about the needs of engineering college students, aiming at integrating the needs of engineering college students into the reform of the Civic Science curriculum, so as to make engineering college students get more, and thus improve the Civic Science awareness, Civic Science ability and Civic Science habit of engineering college students. Of course, the study of engineering college students has certain limitations, and later we will consider expanding and classifying the sample data to study the reform of Civics courses based on different students' "Inter-classroom behavior", so as to achieve differentiated and personalized development.

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Vol. 7, No.04; 2023

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