

Research and Exploration of Ideological and Political Education in the Course of Pathophysiology

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Abstract

Course based ideological and political education (CIPE) is an important way to improve the quality of ideological and political work and talent cultivation. This study explores for the first time the implementation of ideological and political education in the teaching of pathophysiology courses, and also analyzes the evaluation of student psychological status and the importance of mental health education in the implementation of IPE courses. A survey was conducted on 211 students at Yangtze University to understand their motivation and behavior towards learning ideological, political, and pathophysiological courses. In addition, a questionnaire survey was used to explore the relationship between pathophysiology and ideological and political courses, as well as the importance of their satisfaction with the implementation of ideological and political courses in pathophysiology and mental health education. The research results indicate that factors such as educational background and gender differences affect the learning of CIPE. Graduate students are more interested in ideological and political courses, while female students find it difficult to study pathophysiology; In addition, the results of one-way ANOVA indicate that the implementation effect of IPE in pathophysiology courses depends on the level of interest in IPE and pathophysiology courses, the level of consideration for the importance of professional courses, the professional gains after studying pathophysiology, and the level of understanding of the relationship between IPE and CIPE. 81.04% of students believe that in the CIPE process, telling stories by teachers themselves is the most popular way of communication and education. This reflects the importance of mental

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health education from the perspective of CIPE. In addition, this study also indicates that PBL and flipped classroom teaching models are popular teaching models in CIPE. This study is beneficial for promoting the improvement and implementation of CIPE and mental health education in higher education curricula, thus providing valuable insights for educational decision-makers.

Keywords

Pathophysiology, Curriculum Ideological and Political Education, Higher Education, Psychology, Questionnaire Survey

1. Introduction

The goal of ideological and political education (IPE) in universities and colleges is to continuously improve the ideological cultivation, political literacy, and moral cultivation of the students. IPE also aims to guide higher education students to establish a correct outlook on life, values, and the world [1]. However, there are certain distinct features of ideological and political teaching due to its strong theoretical nature. Therefore, it is somewhat difficult for college students to effectively process the IPE. Since college students are most often ideological and strongly believe in the held narratives, it is not harder to convince them. Moreover, the present teaching modes of IPE courses in universities and colleges are confined to a rigid mode of exam-oriented education. College students are always in a passive mode of learning as teachers serve as the center of all activities ranging from the teaching link to the examination links. Simultaneously, the same unified teaching method makes the teaching content boring, thereby, making it difficult to arouse the interest of the students. The passive learning mode also fails to improve the problem-solving abilities of higher education students, which suppresses their creativity and hinders the cultivation of innovative talents [2] [3]. Hence, there is a dire need to integrate IPE into the course content of universities and colleges in true spirit. As a result, the so-called IPE curriculum shall contain appropriate IPE courses. This will help to address the current educational dilemma in universities and colleges.

Figure 1 illustrates that the curriculum IPE has gone through a hard journey in China until promulgated a guiding outline for the ideological and political construction of college courses in 2020.05.28 [4]. The focus of the proposed IPE guidelines is to outline how to cultivate people, for whom to cultivate people, and which people need cultivation. These concerns represent the fundamental problems of higher education as the effectiveness of building morality and cultivating people is the fundamental standard to assess the educational credibility in universities and colleges. The elements of ability training, knowledge transfer, and value shaping should be integrated into the higher education curriculum to ensure morality building and student cultivation in universities and colleges [5]. There is also a need to properly guide the university students regarding ability

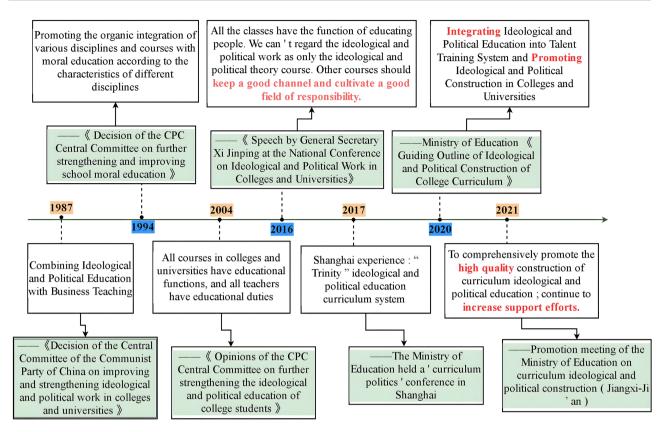


Figure 1. The background and history of curriculum ideology and politics in China.

training, knowledge transfer, and outlook on the world, values, and life in order to ensure the effective construction of an IPE-focused curriculum. This not only represents the due meaning of talent training but also establishes necessary content for higher education institutes. Such strategic measures both determine and affect matters of national interest such as long-term national stability, successors' selection, the rise of the economy, and national rejuvenation. The "main channel" of classroom teaching, the "main battlefield" of curriculum construction, and the "main force" of teachers should be firmly held together to enable the teaching faculty, universities and colleges, and course content to properly educate the students, guard a section of canals, and instill an adequate level of responsibility in the people. Consequently, all higher education courses including ideological and political curriculum can go hand in hand, while developing a synergistic effect, integrating implicit and explicit education, and building a pattern of the all-round education system. Besides, the construction objectives of political and ideological courses should be put forward in different majors as shown in Table 1.

Psychology is the branch of science that deals with human psychological phenomena and behaviors, including personality psychology, mental health pedagogy, development psychology, etc. [6]. While the goal of ideological and political education is to pay attention to the development of higher education students. Both fields strive to educate people and attach importance to human development.

Specialized Courses	Teaching Goals in Ideological and Political Education
Literature, History, and Philosophy	In the course teaching, professional knowledge education should be combined to allow the students to thoroughly understand the core socialist concepts and consciously nurture the traditional, advanced socialist, and revolutionary culture of China.
Economics, Management, and Law	The course content should adhere to the guidance of Marxism, and haste up the development of the academic system, discipline system, and discourse system of philosophy and social sciences with Chinese attributes. It is crucial to assist the students to understand the national strategies, policies, rules, and regulations in relevant majors and industry fields. Students also must be given a detailed insight into the social and practical concerns by cultivating the professional qualities of the students to help the world, serve people in good faith, and study both morality and law.
Pedagogy	The course content should focus on strengthening the education of teachers' morality and style, highlight the classroom education of morality, cultivation of typical morality, and establishment of morality by rules. Besides this, students should also be trained to establish the professional ideal of learning to be a teacher and behave in the world in a manner that cultivates the professional ethics of patriotism and law-abiding, standardizes the teaching, and cultivates the missionary feelings of the students. The teacher's approach should also focus on the student's ability to solve real-world puzzles, integrate their love for their home country, and education as well as consciously establish themselves, learn, and teach with morality. The teachers should also strive to be good "Four Haves" with solid knowledge, moral sentiments, beliefs and ideals, and a heart of benevolence by unswervingly adopting the path of socialist education with Chinese orientation. Physical education courses should primarily focus on the faith of students to believe in hard work and struggle, as well as stimulate their instinct to improve the health and life quality of the whole nation.
Science and Engineering	The course content should combine the education of Marxist standpoint and method with the cultivation of scientific spirit while improving the students' capacity to properly understand, evaluate and resolve potential issues. Major courses of science should emphasize the education of scientific ethics and training of scientific thinking methods. The scientific courses must guide the student's vision to bravely climb the scientific peaks by actively pursuing the truth and exploring the unknown realities. Engineering professional courses should also strengthen the engineering ethics of the student by instilling the spirit of a great country's craftsman and stimulating their instincts to serve their country with advanced science and technology.
Agriculture Science	In the course teaching, the education of ecological civilization should be strengthened, and students must be taught to establish and follow the concept that green mountains are as valuable as gold and silver mountains. Teachers should develop the knowledge of "big country, agriculture and rural areas" among the students while emphasizing the students to strengthen and rejuvenate the agriculture sector as well as love rural areas and farmers". This will need the teachers to promote the consciousness and belief of writing research papers on the land of the motherland by supporting the students' sense of mission and responsibility to serve the modernization of agriculture and rural areas and the overall revitalization of rural areas as well as cultivating the innovative talents who know and love agriculture.
Medicine	Medicine teachings should prioritize the strengthening of education in the area of medical ethics, and focus on developing the students' medical spirit of "protecting life, saving the dying and healing the wounded, being willing to contribute, and loving the boundless". There is also a need to focus on the education of doctors' benevolence. Students should be educated to always put the life safety and health concerns of the people above all while cultivating an excellent set of medical skills. Being medical professionals they should respect their patients, be good at communication, improve their service quality, develop humanistic interaction, respond to major emergencies of public health as per the law, and strive to become model doctor who is trusted by people in all circumstances.

 Table 1. Requirements of different majors for ideological and political education.

Continued	
	In the course teaching, teachers should educate the s
Arts	take root in the people, and adopt a correct outlook
	adhere to aesthetic education and beautification, acti
	education, while supporting the students to consciou
	traditional culture of China, while comprehensively

In the course teaching, teachers should educate the students to observe time discipline, go deep into life, take root in the people, and adopt a correct outlook on art and creation. Moreover, teachers should adhere to aesthetic education and beautification, actively carry forward the spirit of aesthetic Chinese education, while supporting the students to consciously inherit and propagate the excellent and traditional culture of China, while comprehensively improving the aesthetic and humanistic qualities of the students, and enhancing the cultural confidence.

In short, both areas overlap and demonstrate certain common characteristics. Firstly, both fields adhere to the development concept of "people-oriented and life-oriented" approaches; Secondly, both fields represent the same dedication towards human care; Thirdly, healthy psychology is reported to breed a perfect personality whereas psychological health teaching is a part of the ideological and political education. Therefore, it is feasible to combine ideological and political education with psychological thoughts. The blend of ideological and political teaching with psychological thoughts will result in a heuristic, exploratory, and interactive teaching mode that would allow the students to demonstrate a sense of harvest and enable the teachers to have a sense of happiness [7].

Cultivation of medical ethics in students is one of the imperative roles of new medicine. The notion of new medicine emphasizes cultivating the medical spirit of the student under the new curriculum [8]. "Curriculum of ideological and political education" refers to the effective incorporation of IPE in higher education institutes by adopting all means of curriculum and teaching reforms. It is also a strategic role of the curriculum reform to implement the fundamental task of morality and character building. Therefore, at present, the universities and colleges should prioritize the IPE of medical students and enable the professional classrooms to shoulder the responsibility of IPE [9] [10]. The specialty courses serve as the significant carriers that support the educational reform to integrate the political and ideological theories into the curriculum and foster character building through moral education [11]. Pathophysiology works as a bridge between basic medicine and clinical medicine, integrating IPE into the theoretical curriculum of "pathophysiology" to cultivate the medical business of loving the party and patriotism, and practicing the socialist core values with a correct scientific outlook [12] [13].

A large number of studies report the practice and effect evaluation of curriculum ideological politics [14] [15] [16]. However, few studies have explored the guiding role of psychological education in the curriculum of ideological politics. As a result, this study examines the effect of ideological politics in the curriculum from the perspective of psychological education among Chinese students.

2. Methods

2.1. Participants

This study received formal approval from the medical ethics committee of Yangtze University. Consequently, it was conducted from Feb 2022 to May 2022.

Furthermore, written consent was obtained from the study respondents at the beginning of the survey. Lastly, the age of all study participants was over 18 years.

The undergraduate and graduate students were organized by grade wise to complete the online questionnaire through scanning of the codes after attending the pathophysiology course at Yangtze University. A total of 211 valid questionnaires were collected from 133 undergraduate and 78 graduate students.

2.2. Research Methods and Contents

A self-designed questionnaire adopts the network survey method in this study. Moreover, the students are required to scan the questionnaire star QR code through WeChat or QQ and complete the questionnaire on an anonymous and voluntary basis. The content includes basic information about the students including gender, age, political outlook, educational background, grade, major, etc. The student's attitude towards pathophysiology teaching is assessed through variables such as teaching attitude, teaching content, teaching methods, self-learning ability, learning effect, cognition, and attitude toward the political and ideological courses. The questionnaire is dominated by single choice and multiple topics, with one question for each answer. In addition to this, the scale consists of 4 items including 36 questions that are to evaluate two dimensions of the strategy: "adopt" and "keep", using a 5-point Likert-type scale [17] [18] that ranges from "5" (strongly agree) to "1" (strongly disagree). The research method of this study is thoroughly evaluating the implementation of the IPE courses and putting forward further suggestions for possible improvements.

2.3. Statistical Analysis

The original data is imported into the SPSS database, and descriptive analysis of sociodemographic characteristics is carried out with the help of SPSS 26.0 statistical software. Simultaneously, the chi-square test, one-way ANOVA, and other methods are also used in this study.

3. Results

3.1. Demographic Characteristics of Participants

A total of 211 valid questionnaires are received from 58 males and 153 females, accounting for 72.5% of the total distributed questionnaires. There are 78 graduate students and 133 undergraduate students, accounting for 63.0% of the total studies who participated in the study. Lastly, the number of members of the Communist Youth League accounted for 71.0% of the total participants. Table 2 represents the socio-demographic characteristics of the study participants.

3.2. Influence of Educational Background and Age on Teaching Effect

The results of the chi-square test indicate that among the three basic characteristics

Characteristics	1	Respondents (n)	Percentage (%)
Gender	Female	153	72.51
Gender	Male	58	27.49
Educational	Undergraduates	133	63.03
Background	Postgraduates	78	36.97
	The Masses	150	71.09
Political	Others	39	18.48
Affiliation	Young Communist League Member	r 16	7.58
	Chinese Communist Party Member	6	2.84

 Table 2. Demographic characteristics of study participants.

of gender, educational background, and political outlook, there is only a significant difference between educational background and the data of interest in the ideological and political courses that are presently carried out by the school. Moreover, there are significant differences in the dimensions of motivation and behavior analysis of the students' learning professional courses, and the feedback data on gender differences in professional courses' learning. There are no significant differences in terms of gender, educational background, and political outlook on the dimensions of students' exploration and analysis of the implementation of curriculum ideology and politics in the professional courses. **Table 3** and **Table 4** comply all these details.

3.3. Single Factor Analysis of Satisfaction with the Implementation of IPE in Pathophysiology

Single factor analysis determines the degree of interest in IPE and pathophysiology courses, the degree of importance of professional courses, the professional harvest after learning pathophysiology, the understanding of the relationship between IPE courses and curriculum, the understanding of the relationship between professional education and IPE, and the penetration level between curriculum IPE and pathophysiology. Moreover, the single factor analysis confirms that there is a significant difference in terms of satisfaction with the evaluation of the effect of IPE in pathophysiology (p < 0.05). See **Table 5** for details.

3.4. The Most Suitable Teaching Method for IPE

The summary of students' suggestions regarding the improvement in pathophysiology Curriculum under the background of "Curriculum Ideology and politics" highlights that "telling relevant stories in combination with teachers' own experience and perception", "adding classic cases to professional courses", "understanding more curriculum background knowledge through reports", "group PBL teaching" and "professional norms, professional ethics, and scientific spirit" has become more concentrated feedback of the students. **Figures 2-4** illustrate the stated details.

Items	Undergraduates	Postgraduates	Total	X ²	Р
Attendance in Civic	s courses				
All	97	46	143		
Almost all	26	21	47		
Half	6	8	14	6.083	0.193
A few times	3	3	6		
Never	1	0	1		
Interested in the cu	rrent Civic Studies	program run by	the schoo	ol	
Very interested	18	9	27		
Rather interested	39	41	80	10.477	
Not interested	4	3	7	12.477	0.006
Neutral	72	25	97		
The need for ideolo	gical and political o	education for nat	ional dev	elopment	
Very necessary	90	53	143		
Essential	38	24	62	1.143	0.565
General	5	1	6		

Table 3. The relationship between different academic qualifications and the motivation of learning ideological and political courses.

The importance of receiving ideological and political education for one's future development

Very important	84	49	133			
General	10	2	12	2.563	0.278	
Important	39	27	66			
						1

Table 4. Relationship between genders and motivation to study professional courses.

T4	Gender		T-4-1	377	P	
Items	Male Female		Total	\mathbf{X}^2	Р	
Are you interested in the	Advanced	Pathophysiolo	ogy/Pathoph	nysiology co	urse?	
Particularly interested	16	29	45			
Moderately interested	38	83	121	10 792	0.013	
Generally interested	3	38	41	10.782		
Not interested	1	3	4			
What do you think about course?	t taking the	Advanced Pat	thophysiolo	gy/Pathoph	ysiology	
Very important	33	57	90			
Relatively important	18	87	105	13.003	0.005	
Not very important	5	4	9	15.005	0.005	

5

7

2

Not important

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Continued

What is your attitude towards adding some teaching activities to your professional classroom (e.g. activities such as group work, case studies, PPT presentations, etc.)?

Very willing	17	41	58		
More willing	22	73	95		
Fairly	14	24	38	2.721	0.606
Less willing	4	12	16		
Reluctant	1	3	4		

The level of expertise in different basic pathological processes through the study of Advanced Pathophysiology/Pathophysiology, specific to your specialty

Improve a lot	36	64	100		
improve some	17	70	87	6.925	0.031
half-understood	5	19	24		

Table 5. Comparison of satisfaction scores of ideological and political implementation of pathophysiology course (n = 211).

Items	N	Satisfaction Scores ($\overline{X} \pm S$)	F	р
Interested in political education				
Very interested	27	4.667 ± 0.555		
Fairly interested	80	4.287 ± 0.679	10.632	0.000
Not interested	7	3.143 ± 1.345		
Neutral	97	4.062 ± 0.719		
Level of interest in pathophysiology courses				
Particularly interested	45	4.600 ± 0.654		
Relatively interested	121	4.149 ± 0.726	9.695	0.000
Generally interested	41	4.000 ± 0.775		
Not interested	4	3.000 ± 0.000		
Importance of pathophysiology courses				
Very important	90	4.367 ± 0.771		
Relatively important	105	4.076 ± 0.689	4.254	0.006
Not very important	9	3.667 ± 1.000		
Not important	7	4.429 ± 0.787		
Professional gains from studying pathophysiology				
Improved a lot	100	4.390 ± 0.751		
Some improvement	87	4.023 ± 0.698	6.665	0.002
Half-understood	24	4.000 ± 0.834		
The relationship between Civic Studies and Ideological and	l Political Edu	cation of the Curric	ulum	
Mutually reinforcing	161	4.311 ± 0.682		
Unclear	21	3.524 ± 0.981	7.849	0.000
Working in the same direction	26	4.038 ± 0.720		
Working in opposite directions	3	4.000 ± 1.000		

The relationship between professional education and ethical edu	cation			
Complementary and equally important	130	4.323 ± 0.707		
Ideological education is complementary to professional education	68	4.015 ± 0.819	5.353	0.005
They are separate systems and do not affect each other	13	3.846 ± 0.689		
Is it possible to interpenetrate curriculum thinking and pathoph	ysiology?	•		
Yes	179	4.296 ± 0.700	23.484	0.000
No	32	3.625 ± 0.833		
How to assess the effectiveness of ideological and political educa	tion in th	ne curriculum in p	athophysi	iology?
Whether it is conducive to learning	94	4.277 ± 0.709		
Not good for assessment	42	3.881 ± 0.861	6.545	0.000
Questionnaire	60	4.400 ± 0.616		

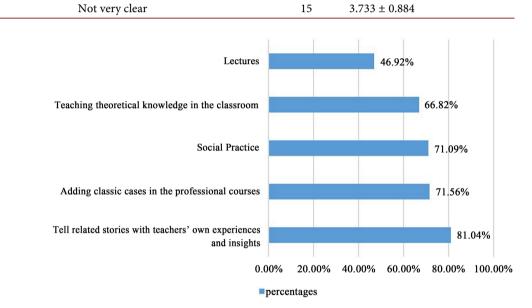


Figure 2. Teaching contents.

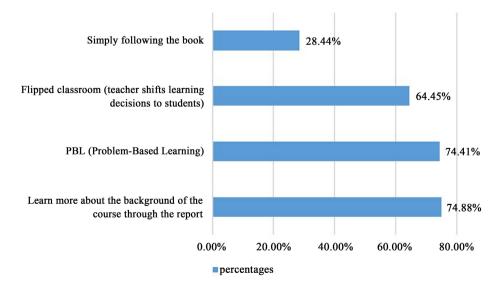


Figure 3. Teaching methods.

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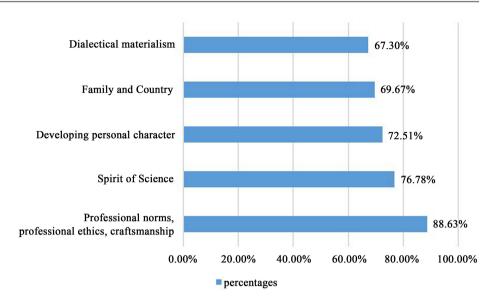


Figure 4. Ideological and political elements.

4. Discussion

Recently, there is an increase in the interest to explore how the teaching of IPE courses can organically be combined with the teaching of professional courses, and how the students can be turned into all-round socialist builders and successors. Therefore, universities and colleges should strive to run IPE courses, consider the role of classroom teaching as the mainstream of education, educate the people through the whole process of school education and teaching, and deeply explore the elements of IPE in various courses. The reform of higher education has become a crucial role in professional education [19]. The results of the questionnaire reveal that the integration of IPE courses into the teaching process of "pathophysiology" theory course commonly benefits the students, stimulates their interest in knowledge-seeking, and obtain experiences that serve as the basis for the follow-up courses related to ideological and political construction and teaching practices, and possess reference value to further enrich the teaching reforms. A round of teaching practices and exploration carried out in this study has promoted the thinking, planning, and progress of the ideological and political curriculum but there are still some areas that need to be improved in the future.

4.1. Improving the Ideological and Political Education Literacy of Professional Teachers in Medical College and Improving Their Ability of Ideological and Political Teaching

The teaching of IPE courses is the process of spiritual exchange, which cultivates a positive learning attitude and interest of the students through education, and meets the psychological needs of both students and educators [20]. Since 80% of the teachers in higher education institutes are educators of professional courses, therefore, 80% of the courses offered in universities and colleges are professional courses, and students spend 80% of their time on these professional courses. Besides, 80% of the students assume that the teachers of professional courses exhibit the highest impact on their thoughts, and the curriculum IPE is meant to carry out ideological and political education through professional courses in order to achieve the purpose of all-round education [21]. Carrying out curriculum IPE is not simply a simple superposition of professional courses and ideological education, nor a story inserted into professional course teaching, but an educational idea and educational thought embodied in the teaching of professional course teaching. Such a mode of teaching not only gives full play to the professional benefits but also integrates core socialist values into the education system. Hence, there is not only a need to emphasize the teaching of professional knowledge, but also the cultivation of moral quality. Teachers are the center of the education system; therefore, they serve as the organizer, practitioners, and promoters of IPE functions in the curriculum [22]. Teachers must be backed with professional knowledge, high ideological and political awareness, as well as firm ideals and beliefs. This will naturally convince the students to accept the IPE in the professional courses. Educators of professional courses should also actively participate in the IPE conferences that are organized by the state authorities. This will help the teachers to learn the necessary philosophies of teaching and share the experience with other ideological and political educators, thereby; deeply understanding the needs and direction of the ideological and political reform in the curriculum. On the one hand, there is a need to improve the IPE quality, strengthen the professional cultivation and improve the professional skills; On the other hand, professional teachers should communicate and learn with the ideological and political teachers, obtain corresponding professional guidance and assistance, design excellent ideological and political teaching programs and disseminate the acquired IPE knowledge in the classroom. Similarly, teachers can also timely understand the phased ideological needs and psychological state of the students through counselors.

4.2. The Psychological Characteristics and the IPE Needs of Students in the Curriculum Make a Reasonable Teaching Plan

The IPE in professional courses is a kind of implicit education, which requires the students and teachers to achieve educational goals in an interactive manner. Hossain [23] point out that from the context of teachers, targeted ideological and political practices should be performed as per the psychological characteristics and distinct needs of the higher education students. This narrative is in the line with research implications proposed in this paper. Different characteristics of the students such as different majors, graders, and genders should be taken into account to deliver the information-based IPE for the students. Furthermore, there is a need to dynamically analyze the classroom conditions and network teaching modes of the studies. Contemporary college students represent a new generation of humans who grew up in the modern environment of the internet, therefore various social media resources fill up their minds, make their thoughts in a diversified state, and shape their outlook on values, life, and world [24]. In addition, since there are more female students in medical school (such as Yangtze University) therefore, their mental thoughts are not stable enough, and their emotions fluctuate significantly. Humanistic psychology believes that the dominant position of students should be respected, and their suggestions should be rationally adopted in the process of humanization of curriculum content and curriculum content design. The design of the IPE's course content should also meet the appropriate needs of students. While learning the professional content, teachers should also focus on the spiritual needs of the students, and nurture a positive outlook on life and values among them. This will encourage the students to properly balance the dynamics of individual needs, people, country, and society; thereby, establishing correct values and realizing individual and collective needs.

4.3. Application of Personality Theory and Advanced Teaching Methods

Personality commonly refers to the psychological qualities manifested in the psychology, temperament, and living habits of a person. The teaching of ideological and political theory requires the teachers to emphasize the "personal teaching" along with the "oral teaching", enhance their own personality charms, and rely on their own personality strengths to infect and convince the students. Studies show that the personality charm of teachers exhibits a profound and lasting impact on the students [25] [26]. Therefore, teachers must improve their own personality in order to improve the actual effect of education and truly convince the students of their theories. Consequently, this study concludes that as a part of IPE, teachers' teaching their own stories is the most effective way to spread ideological and political education, reaching around 81.04% of the IPE. In terms of teaching methods, 74.41% of the students choose the group PBL teaching mode, whereas 64.45% of the students choose the flipped classroom teaching mode as most of the students are willing to independently explore the education experience. Based on this, teachers should change their ideas, perform a good job in role transformation, and return the "pathophysiology" classroom to students, who can share, self-study, ask questions, etc., in order to improve the ideological and political level of the courses. Supplemented by teachers' learnings, particularly in the case of the graduate students, teachers can completely hand over the classrooms to their students in order to give full play to the distinct benefits of the graduate students and cultivate students' attitude toward active learning. This will support the reforms of flipped classrooms, and online mixed teaching modes, and update the teaching content and learning paths [27] [28].

5. Conclusion and Prospect

This study concludes that there is a dire need to promote the innovative development of medical education and teaching with the new medical science. In addition to this, the curriculum thought, and politics must be run through the cultivation of medical talents. Combined with the characteristics of teaching students, this study only makes a preliminary exploration of the "curriculum thought and politics" of pathophysiology. It also aims to make good use of the pathophysiology classroom teaching to cultivate high-quality medical talents with both morality and ability. However, the IPE of pathophysiology curriculum is a novel concept, which needs to actively promote the implementation of the ideological and political construction of school curriculum, constantly improve and explore a curriculum IPE and teaching system that is suitable for medical students in the universities and colleges of China.

Although this study has been able to achieve its all objectives, still this study has certain limitations: Firstly, it is based on the investigation of only one course of university students. Secondly, there is also a need to further evaluate the effect of ideological and political education needs. Lastly, the follow-up study should also adopt and improve the multidisciplinary research and evaluation system.

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Authors' Contributions

PXC designed and supervised the study, LTT and ZYH reviewed the references, PXC wrote the manuscript, PXC contributed to tables and figures, PXC revised the manuscript, PXC acquired funding.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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