

The Practice and Reflections on Ideological and Political Education in Ultrasound Medical Graduate Courses under the “Three-All Education” Perspective

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Abstract: *Ultrasound medicine is a discipline that integrates both medical knowledge and technical skills, emphasizing the training of clinically oriented professionals. Under the educational framework of the “Three-All Education” concept, the integration of medical education and ideological-political education has become a growing trend. This study conducted a preliminary analysis of the incorporation of ideological and political education into ultrasound medical graduate courses through a questionnaire survey. The results indicate that most students recognize the importance of ideological and political education and support its integration with professional courses. However, several challenges remain in practice, such as a lack of diverse teaching methods, insufficient time allocation, and limited ideological and political teaching capabilities among some instructors. Based on the survey findings, this study proposes enhancing teachers’ awareness of ideological and political education, improving instructional methods, and leveraging online resources to enrich course content. These measures aim to promote the integration of ideological and political education with ultrasound medical training, fostering high-quality professionals with both technical expertise and a strong sense of social responsibility.*

Keywords: Three-all education, Course ideology and politics, Ultrasound medicine, Educational innovation.

1. Introduction

With the increasing diversity in society’s demands for talent, a singular focus on knowledge and technical skills is no longer sufficient. Interdisciplinary integration has become an inevitable trend (Hong-zhi et al., 2022; Peng et al., 2020) [1, 2]. At the 2016 National Conference on Ideological and Political Work in Colleges and Universities, President Xi Jinping emphasized the central importance of moral education and called for ideological and political work to be embedded throughout the entire educational process (Gang, 2021) [3]. This highlights that the integration of medical education and ideological-political education is an essential direction of interdisciplinary development, aiming to cultivate medical postgraduates who possess both professional competence and moral integrity.

Ultrasound medicine is inherently interdisciplinary, integrating science, engineering, and medicine (Guangyu et al., 2022) [4]. It encompasses a wide range of complex knowledge, which is rapidly evolving with the integration of medical engineering, artificial intelligence, and ultrasound technologies (Liyun et al., 2023) [5]. As a result, knowledge in ultrasound medicine is updated frequently. As one of the most crucial diagnostic departments in clinical practice, ultrasound medicine is characterized by the simultaneous performance of diagnostic procedures and patient communication. Therefore, sonographers must possess not only clinical reasoning skills but also humanistic care and strong communication abilities. In this context, incorporating the “All-round Education” concept into postgraduate ultrasound education—embedding ideological and political education within the ultrasound curriculum—represents an innovative approach that aligns with current social and

educational needs.

2. Background and Current State of the “All-round Education” Concept

Education is the cornerstone of a nation’s sustainable development. A thriving education system ensures national prosperity by continuously cultivating innovative talent. However, China’s traditional education system has long been dominated by an “exam-oriented” model. This rigid system often neglects the development of creativity and moral values among students (Dongmo et al., 2024). Talent cultivation should extend beyond technical proficiency to include the development of personal values and ethical awareness.

In the current medical education landscape, ideological and political education remains disconnected from professional training. Ideological content is typically delivered by specialized political instructors, often in brief and monotonous sessions. In contrast, professional courses—whether foundational or clinical—tend to emphasize only technical knowledge, overlooking the interplay between humanistic and clinical perspectives. In 2017, the Central Committee of the Communist Party of China and the State Council issued guidelines titled *Opinions on Strengthening and Improving Ideological and Political Work in Higher Education under the New Situation*, which called for an all-staff, whole-process, and all-round approach to moral education (Baolai, 2017). These guidelines emphasize the need for deep integration of ideological and professional education, fostering students’ holistic development—morally, intellectually, physically, aesthetically, and practically. Professional courses serve as a vital vehicle for ideological education. The key challenge lies in how to effectively

integrate well-developed ideological education with professional training to enrich the content of higher education and enhance its overall impact—an urgent issue within current education reforms.

3. Current Status of Postgraduate Education in Ultrasound Medicine

In recent years, the expansion of postgraduate enrollment in China has resulted in a mismatch between the increasing number of students and the limited availability of academic mentors, leading to inconsistent training quality among graduate students (Hejian & Junfeng, 2025). Moreover, with the integration of professional master’s programs and standardized residency training (Jie, 2014), the structure of postgraduate medical education has undergone substantial changes. Students are now required to complete both academic coursework and three years of clinical residency training, passing rigorous theoretical and practical assessments.

This dual-training model has reduced the amount of time available for formal coursework. To adapt, many institutions have resorted to offering classes during evenings or weekends, employing hybrid online and offline formats, or condensing instruction into intensive sessions. While flexible, these approaches often compress large volumes of content into short periods, impairing students’ comprehension and limiting the development of humanistic competencies.

In addition, there has been a rising incidence of psychological issues—including depression, anxiety, and emotional disorders—among residents and postgraduate medical students (Qing et al., 2020), with some cases even resulting in extreme behavior. These issues likely stem from a combination of factors: high academic demands, long hours of clinical training (Lei et al., 2016), strained doctor-patient relationships, and the lack of ideological education and humanistic care (Hao-yang et al., 2022), which leaves students without a solid psychological foundation to cope with stress and emergencies.

Unlike other clinical disciplines, ultrasound medicine encompasses a wide-ranging knowledge base that combines medical, scientific, and engineering principles. It requires strong logical reasoning and spatial imagination. In practice, ultrasound is valued for being cost-effective, radiation-free, and repeatable, making it one of the most widely used diagnostic tools in hospitals. Each ultrasound exam is independently conducted by a single physician, who must also communicate face-to-face with patients from various clinical departments—including emergency, outpatient, and inpatient services. As such, sonographers must demonstrate not only diagnostic acumen and technical skill but also excellent communication abilities, humanistic compassion, and professional ethics. Only with these qualities can they deliver fast and accurate diagnoses under high-pressure conditions and effectively reassure anxious patients.

Given the current structure of medical training and the interdisciplinary nature of ultrasound medicine, traditional didactic teaching is no longer sufficient for cultivating qualified sonographers. Incorporating ideological and

political education into the professional curriculum can enrich teaching content, enhance both technical and humanistic competencies, and foster balanced development of medical ethics and expertise. Therefore, integrating the “All-round Education” concept into postgraduate ultrasound education is both necessary and urgent.

4. Innovative Practices and Reflections on Graduate Education in Ultrasound Medicine under the “All-round Education” Framework: Insights from a Questionnaire Survey

Survey Participants:

As shown in Table 1, a total of 39 valid questionnaires were collected for this study. All respondents specialized in ultrasound medicine, including 19 in-service professionals and 20 current master’s students. Among the participants, 14 were male (35.9%) and 25 were female (64.1%). In terms of political affiliation, 10 respondents (25.64%) were members or probationary members of the Communist Party of China, 21 (53.85%) were members of the Communist Youth League, and 8 (20.51%) identified as unaffiliated with any political organization.

Table 1: Basic Information of the Survey Participants

Item	Category	Number of Participants	Valid Percentage (%)
Gender	Male	14	35.90%
	Female	25	64.10%
Political Status	CPC member or probationary member	10	25.64%
	Communist Youth League member	21	53.85%
	General public	8	20.51%
Occupation	Practicing physician	20	51.28%
	Master’s student	19	48.72%

5. Analysis of Students’ Attitudes Toward Integrating Ideological and Political Education into Medical Curricula

Guided by the “All-round Education” (Sanquan Yuren) philosophy, we designed a set of survey questions aimed at assessing students’ perceptions and evaluations regarding the integration of ideological and political education (IPE) into graduate-level ultrasound medicine courses. This investigation seeks to identify current shortcomings in the integration of IPE and to provide insights for future curriculum development and improvement.

As shown in Table 2, when asked whether it is necessary to enhance the incorporation of ideological and political content into existing medical courses, 58.97% of students responded that it is very necessary, while 28.21% were neutral, and 12.85% considered it unnecessary. These results indicate that the majority of students support the integration of IPE into the ultrasound medicine curriculum. Furthermore, when asked whether ideological and political education is closely related to their academic learning, personal development, and future

employment, 76.93% of respondents agreed, while 23.08% expressed a neutral stance.

When questioned about whether more ideological and political elements should be included in ultrasound medicine courses, 35.90% of students strongly supported this idea, whereas 41.03% remained neutral, suggesting a degree of ambivalence. Additionally, 71.79% of students expressed support for the university to organize more IPE-related lectures and activities on campus. Importantly, 71.80% of respondents believed that the integration of IPE into medical curricula plays a positive role in the comprehensive cultivation of students' moral and ethical development. Overall, the survey results demonstrate that most students recognize the importance of ideological and political education and support its incorporation into professional medical training, laying a solid foundation for its further integration into ultrasound medicine education.

Table 2: Attitudes Toward the Integration of Ideological and Political Education into the Ultrasound Medicine Curriculum

Item	Category	Number of Respondents	Valid Percentage
Do you think it is necessary to strengthen ideological and political education in the current medical curriculum?	Necessary	23	58.97%
	Neutral	11	28.21%
	Necessary	5	12.82%
Do you think ultrasound medicine instructors should incorporate more ideological and political content?	Strongly agree	14	35.90%
	Agree to some extent	7	17.95%
	Neutral	16	41.03%
	Disagree	2	5.13%
Do you support schools organizing lectures on ideological and political education?	Yes	28	71.79%
	No	11	28.21%

6. Analysis of the Practice and Effectiveness of Integrating Ideological and Political Education into the Curriculum

Teachers are regarded as the “engineers of the human soul,” and their role is a key determinant in whether ideological and political education (IPE) can be naturally and effectively integrated into the classroom. As shown in Table 3, when students were asked, “During medical professional courses, do instructors incorporate ideological content such as medical ethics, national policies, or legal regulations into their teaching?”, 48.72% of the respondents reported that such content was frequently included, another 48.72% stated that it was mentioned occasionally, and 2.56% said they had never encountered such content.

These findings suggest that the majority of instructors actively integrate ideological and political elements into their regular teaching, thereby playing a guiding role in shaping students' moral and professional values. However, the degree of integration still varies among different teachers. When asked

about the “Benefits gained from integrating ideological and political education into medical courses,” 89.74% of the students believed it helped cultivate medical ethics and improve their professional conduct. Furthermore, 71.79% felt that such integration aided in the formation of correct outlooks on life, values, and the world. These results indicate that embedding ideological and political education into the postgraduate ultrasound medicine curriculum can achieve positive educational outcomes.

Table 3: Effectiveness of Integrating Ideological and Political Education into Ultrasound Medicine Courses (Multiple Responses Allowed)

Item	Category	Number of Respondents	Valid Percentage
In regular medical courses, do instructors incorporate ideological content (e.g. medical ethics, Party policies, legal regulations) into teaching?	Frequently	19	48.72%
	Occasionally	19	48.72%
	Never	1	2.56%
Perceived benefits of integrating ideological and political education into medical courses (multiple choices allowed)	Cultivation of medical ethics and enhancement of professional conduct	35	89.74%
	Helps establish correct worldviews, outlook on life, and values	28	71.79%
	Fosters scientific thinking and promotes independent thinking	21	53.58%
	Facilitates better understanding of professional knowledge	17	43.59%

7. Challenges in Integrating Ideological and Political Education into Professional Courses

Integrating ideological and political education (IPE) into ultrasound medicine courses does not mean simply adding a new political theory course. It also does not mean mechanically inserting ideological content. Instead, IPE should be closely connected with professional knowledge, so that the two can support and enhance each other (Lu, 2022). In this process, teachers play a key role. As shown in Table 4, when asked about “the biggest challenge in integrating IPE into medical courses,” 82.05% of respondents said that limited study time is a major issue. They worry that adding IPE might take away time from learning professional knowledge. In addition, 56.41% said they are not yet used to having IPE content in professional courses, and 46.15% felt that instructors lack effective teaching methods to integrate IPE into their lessons.

When asked about “the current situation of IPE in ultrasound medicine courses,” 69.23% said that teachers often read from slides or textbooks without creativity, and that students are not very engaged. Another 53.85% believed the teaching content and format are too simple and outdated. Furthermore, 43.59%

thought that assessment and evaluation methods for IPE are incomplete. Overall, most respondents agreed that the current implementation of IPE in graduate medical education faces several problems. These include poor time management and traditional teaching methods. As a result, the integration of ideological content into professional courses remains shallow.

Table 4: Current Challenges in Integrating Ideological and Political Education into Ultrasound Medicine Courses (Multiple Responses Allowed)

Item	Category	Number of Respondents	Valid Percentage
What do you think is the biggest challenge in integrating IPE into medical professional courses?	Limited class time; adding IPE may reduce time for professional content	32	82.05%
	Instructors lack effective IPE teaching methods	18	46.15%
	Instructors have limited knowledge of IPE theory	13	33.33%
	Students are not used to IPE content in professional courses	22	56.41%
What is your view on the current state of IPE integration in ultrasound courses?	Teaching lacks creativity; students show low engagement	27	69.23%
	Teaching content and formats are relatively simple and outdated	21	53.85%
	Assessment and evaluation mechanisms are inadequate	17	43.59%

8. Discussion

At present, there are still several problems in applying the “All-round Education” concept to ultrasound medicine graduate education. Based on the results of our questionnaire, this paper focuses on improving ideological and political education (IPE) through strengthening the role of teachers and optimizing curriculum design.

At its core, curriculum-based ideological education is about working with students. It focuses on students, serves their development, and aims to improve their moral thinking, political awareness, and cultural literacy. The curriculum is the main carrier of IPE, and teachers are the key force and bridge in the process. According to our survey, 46.15% of participants said that professional course teachers lack effective methods to integrate IPE. Additionally, 69.23% said that teachers often simply read from textbooks, showing little creativity. This reflects that many teachers still lack strong awareness of IPE and do not fully understand how to creatively combine it with professional education. Teachers should be the first ones to be educated. Most medical school teachers graduate from medical universities and have strong professional knowledge, but they often lack a background in the humanities. In contrast, IPE teachers usually graduate from non-medical institutions and have strong political knowledge but limited understanding of medical science.

Therefore, improving political literacy among medical faculty and increasing their sense of responsibility is essential. Teachers should be encouraged to focus on the integration of medical ethics into clinical education (Fei, 2023). To solve these problems, we suggest that universities regularly provide IPE training for medical teachers. This will help them understand the core spirit of “All-round Education” and naturally integrate ideological content into their daily teaching. Additionally, interdisciplinary training sessions can be organized where ultrasound specialists, young scholars, and IPE instructors can share ideas and develop teaching models together. This will help students better understand the ideological value behind ultrasound medicine.

Our survey also found that 82.05% of respondents were concerned that adding IPE may take away time from learning professional knowledge. Furthermore, 69.23% said that the current teaching methods are not innovative. Therefore, increasing the diversity and creativity of teaching approaches is also very important. On one hand, the curriculum should have clear goals for integrating IPE. The content should be carefully designed to ensure a reasonable balance between professional and ideological education. On the other hand, with the widespread use of short videos and online platforms, educators can use micro-videos related to ultrasound medicine to deliver IPE content. This method not only adds variety to teaching but also allows for an organic combination of IPE and medical knowledge. Students can watch these materials in their spare time, outside of class. Through real-life clinical scenarios, they can gradually absorb concepts such as professional ethics and medical morality (Maoping et al., 2017).

During standardized residency training, ultrasound instructors can strengthen IPE through clinical practice. For example, when teaching thyroid ultrasound, teachers can explain the symptoms and ultrasound features of hyperthyroidism. Because such patients may be irritable or anxious, students should be guided to treat them with extra patience and kindness, helping to build better doctor-patient relationships. When performing breast or gynecological ultrasounds, teachers should emphasize the importance of protecting patient privacy, helping students develop a sense of humanistic care. During the COVID-19 pandemic, cardiac ultrasound played a key role in diagnosing conditions such as fulminant myocarditis and heart failure. Teachers can use such examples to enhance students’ professional identity and sense of value. Furthermore, teaching responsibilities can be gradually increased based on students’ academic level. Students may begin with tasks like report writing and move toward independently diagnosing simple cases. In this way, both professional skills and communication abilities can be improved. Ideological elements are naturally integrated into this clinical learning process (Libo et al., 2021), helping to train well-rounded professionals with strong medical, communication, and humanistic skills.

9. Conclusion

To effectively apply the “All-round Education” concept in ultrasound medicine graduate education, it must be integrated by all instructors, throughout the entire teaching process, and in every aspect of clinical training. Only through such full

participation and integration can we cultivate high-level ultrasound professionals who not only possess solid technical expertise but also humanistic care and a strong sense of social responsibility.

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References

- [1] Baolai, Z. (2017). Strengthening and Improving the Ideological and Political Work in Colleges and Universities in the New Situation. *The Guide of Science & Education*(25), 72-73. <https://doi.org/10.16400/j.cnki.kjdx.2017.09.036>
- [2] Dongmo, W., Zhicheng, R., Wenjia, W., Yanxin, S., Ziyao, L., Kai, Z., & Xinyu, Z. (2024). Application of the “Pedagogical Lineage Model + Feynman Learning Method” in Postgraduate Education of Ultrasound Medicine from the Perspective of the New Medical Sciences. *Journal of Medical Research*, 53(10), 193-196+128. <https://doi.org/10.11969/j.issn.1673-548X.2024.10.037>
- [3] Fei, L. (2023). Research on the Ideological and Political Function of Innovation and Entrepreneurship Education Curriculum in Colleges and Universities Under the Concept of “Three Comprehensive Education”. *Guilin University Of Electronic Technology*. <https://doi.org/10.27049/d.cnki.ggldc.2022.000247>
- [4] Gang, F. (2021). Integrity and Innovation of Ideological and Political Work in Colleges and Universities in the New Era. *Journal of Shanghai Jiaotong University(Philosophy and Social Sciences)*, 29(05), 31-40. <https://doi.org/10.13806/j.cnki.issn1008-7095.2021.05.004>
- [5] Guangyu, S., Xuesong, Z., Bing, Q., Yanling, C., & Fangyuan, Z. (2022). Application effect of the mixed teaching mode of small private online course + flipped classroom in the teaching of ultrasonic diagnostics in colleges and universities of traditional Chinese medicine. *China Medical Herald*, 19(25), 81-84. <https://doi.org/10.20047/j.issn1673-7210.2022.25.18>
- [6] Hao-yang, C., Lin, M., Wen-qian, M., Hui-hui, D., Zhi-quan, C., & Xin-ping, Z. (2022). Systematic Evaluation of the Current Situation of Standardized Training of Residents in China. *Health Economics Research*, 39(1), 73-77. <https://doi.org/10.14055/j.cnki.33-1056/f.2022.01.020>
- [7] Hejian, L., & Junfeng, M. (2025). Quality Assurance Demands and Path Innovation after the Expansion of Postgraduate Enrollment. *Higher Education Exploration*(25), 78-86. <https://doi.org/10.3969/j.issn.1673-9760.2025.01.017>
- [8] Hong-zhi, Q., Zhuo-ya, L., Qiang, Z., & Liu-qing, D. (2022). Discussion on the Development Status Quo and Mode of Multidisciplinary Crossing Education in TCM Universities and Colleges-Take Medical-industrial Integration Education as an Example. *Journal of Nanjing University of traditional Chinese Medicine (Social Science Edition)*, 23(2), 130-135. <https://doi.org/10.20060/j.cnki.issn1009-3222.2022.02.010>
- [9] Jie, L. (2014). Exploration and Reflections on the Integration of Professional Master’s Training in Clinical Medicine with Standardized Residency Training. *Academic Degrees & Graduate Education*(06), 13-16. <https://doi.org/10.3969/j.issn.1001-960X.2014.06.004>
- [10] Lei, H., Ying, Z., Yunlin, L., Xiangyun, L., Jiqiao, S., & Jiping, X. (2016). Investigation and countermeasure research on job stress among standard training residents in Shanghai. *Chinese Journal of Medical Education*, 36(0), 464-468. <https://doi.org/10.3760/cma.j.issn.1673-677X.2016.03.038>
- [11] Libo, C., Haiyan, F., Feng, G., Lina, S., Yang, W., Hui, W., & Zhongxiang, L. (2021). Aspiration Leads to Wisdom: Practice and Exploration of Ideological and Political Education in the Ultrasound Diagnostics Curriculum. *Chinese Journal of Laboratory Diagnosis*, 25(8), 1263-1265. <https://doi.org/10.3969/j.issn.1007-4287.2021.08.047>
- [12] Liyun, W., Xi, X., Yuanjiao, T., Bihui, Z., & Li, Q. (2023). Exploration on Postgraduate Cultivation Model of “Ultrasound Medicine + Materials Science” MedicalEngineering Interdisciplinary Crossing. *China Continuing Medical Education*, 15(16), 186-190. <https://doi.org/10.3969/j.issn.1674-9308.2023.16.041>
- [13] Lu, C. (2022). Research on the Construction of Ideological and Political Theories teaching in All Courses for Postgraduates Based on “Three-wide Education”. *Chongqing University of Posts and Telecommunications*. <https://doi.org/10.27675/d.cnki.gcydx.2022.000993>
- [14] Maoping, L., Yajing, Z., & Xiaoqiong, P. (2017). The necessity of micro-class combined with flipped classroom during ultrasonic diagnostics teaching. *Journal of Clinical Ultrasound in Medicine*, 19(06), 427-427. <https://doi.org/10.16245/j.cnki.issn1008-6978.2017.06.027>
- [15] Peng, D., Zidan, W., & Qin, C. (2020). Some Trends and Enlightenment of World Science Development. *Bulletin of Chinese Academy of Sciences (Chinese Version)*, 35(5), 555-563. <https://doi.org/10.16418/j.issn.1000-3045.20200424001>
- [16] Qing, C., Qiaoying, L., Yong, Y., Lijun, Y., & Yonggang, Z. (2020). Investigation and analysis on the mental health status of ultrasound residents during standardized training. *Journal of Clinical Ultrasound in Medicine*, 22(09), 715-717. <https://doi.org/10.3969/j.issn.1008-6978.2020.09.024>