

Original Paper

Integrated Five-Education Pedagogy in Agriculture-Focused Universities: Research and Implementation Frameworks

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Abstract

Promoting the development of rural areas and modernising agriculture require new talents for the agricultural sector. The combination of the five types of education (morality and ethics, intelligence, physical fitness, aesthetics and labour) constitutes a new model for all-encompassing education in the new era, which can drive changes in all aspects of education at these institutions. In light of the five-education system, this paper will examine agriculture-oriented universities and clarify the special characteristics of agriculture within this system. We will explain the integrative logic that moral education provides the foundation, intellectual education serves as the cornerstone, physical education helps develop abilities, aesthetic education nurtures cultural cultivation, and labour education promotes practical participation. Opportunities and practical problems in curriculum division, dispersed resources, deficient assessments, etc., and the reasons for them will also be studied. Finally, the following are the practical paths of curriculum reform, construction of practical platforms and multi-stakeholder cooperation. Theoretically and practically, this paper aims to promote the integration of the five generations in agriculture-oriented universities and advance rural revitalization.

Keywords

Agriculture-focused universities, Five-education integration, Talent cultivation

Fund Project

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The Proposal for the 15th Five-Year Plan for National Economic and Social Development, passed at the Fourth Plenary Session of the 20th Central Committee of the Communist Party of China on October 23, 2025, aims to build an advance coordination mechanism to improve the consistency of planning, synergy

of policies, resource integration and evaluation links, thus promoting a virtuous cycle of technological self-sufficiency and autonomous talent cultivation.

The final goal of Five-Education Integration is to “promote all-round development of human nature and nurture well-rounded individuals” (Li & Wen, 2020), and it is not simply about paralleling the five educations (Jin & Zhu, 2023). It is a new direction of educational reform at present, and its main content is the removal of disciplinary boundaries to realise synergistic pedagogy. This mission is in line with the direction of efforts by agricultural universities to promote rural revitalization through moral commitment to serving agriculture, rural areas and farmers, and at the same time meet the all-round competency requirements arising from the practical and interdisciplinary nature of agricultural production.

Currently, the application of the Five-Education Integration Model in agricultural universities does not have agricultural characteristics and has problems with the institutional mechanism. Theoretically, the previous research has focused on basic education, and there is a lack of specific studies and generalisations in the agricultural sector. The specific meanings and integration logics of all educational dimensions in agricultural universities will be explored in this paper. The above paths aim to solve the problems of a detached curriculum and scattered resources in reality by putting forward some suggestions for the construction of policy and new educational models.

Although domestic research on the concept system and practice path of Five-Education Integration has made some progress, little attention has been paid to agricultural universities. The United States and other countries also have similar ways. The “teaching-research-extension” model of Land-Grant Universities, Japan’s Shokuiku (food education) and Europe’s holistic education have not been adapted to the situation of rural revitalization and agriculture in China.

Therefore, although there has been some previous research, it has not been organised systematically for agricultural production and rural revitalisation, so more in-depth contextualised studies are needed.

1. Connotation of Five-Education Integration in Agriculture-Focused Universities

1.1 Unique Connotation of Five-Education Integration in Agriculture-Focused Universities

Five-Education Integration is a pedagogical process that systematically incorporates undifferentiated educational elements—or synthesizes differentiated elements into an organic whole—across objectives, content, and implementation frameworks, ultimately fostering holistic development in moral, intellectual, physical, aesthetic, and labor dimensions (Liu & Li, 2020). In agriculture-focused universities, the integration is based on the special characteristics and cross-disciplinary synergies of agriculture; it is not a general model and is different because it shares the common foundation of serving agriculture, rural areas and farmers, uniting all aspects into a coherent teaching system.

The five special and harmonious components of the Five-Education Integration Framework are arranged as follows: Moral education leads the organisation of all-round rural activities, such as agricultural exemplary lectures and service experiences, to cultivate a sense of responsibility for “technology application in the field” and provide direction for integrated pedagogy; at the same time, intellectual

education serves as the driving force to integrate basic agronomic knowledge with new technologies such as artificial intelligence and big data to solve real production problems and promote cross-disciplinary innovation; physical education meets the needs of agrarian labour through field-adapted programmes that combine cooperative farming tasks and village fitness routines to improve stamina, and morality is connected to labour education; aesthetic education enriches the spiritual life of the people by turning agrarian relics into works of art, such as farming-theme calligraphy and terraced-field photography, and can deepen teaching elegance through cultural resonance; finally, labour education is the centre of gravity, and through many forms of actual operation, such as machinery deployment and crop promotion, it aims for “bidirectional integration” and fosters virtue, intellect, physical health and aesthetic awareness simultaneously.

Thus, an interconnected ecosystem of activity promoting agricultural modernisation has been formed under the direction of moral education, and all sectors are in line with the goals of rural revitalisation. Intellectual education is to build technology for precision agriculture with artificial intelligence and promote the combined development of labour and aesthetics. Physical education can provide the physical condition needed for “operational excellence”, and aesthetic education can add cultural connotations and enhance the enthusiasm of teachers for teaching in all respects. Labour education is a form of life education that includes the four areas in a closed-loop system based on fieldwork. It cultivates all-round capabilities in the individuals who will advance the cause of rural revitalisation.

2. Existential Context of Five-Education Integration in Agriculture-Focused Universities

2.1 Development Opportunities

Modern Five-Education Integration, after over a hundred years of exploration, has been developing into an educational system that promotes the all-round development of all people (Chen & Jiang, 2024). Recently, with the guidance of integration policies, new prospects have arisen; and at the same time, in accordance with a national directive to advance the development of the five-component education system, it has been combined with the rural revitalization strategy, and the New Agricultural Science Initiative and the agricultural practice base subsidy program have constructed a policy-supported institutional system. With the development of smart and ecological agriculture, industry-driven convergence is taking place; therefore, the demand for talent with integrated technical-professional skills in line with the objectives of Five-Education Integration has risen, and universities need to modify their siloed teaching models. Cultural carriers derive from the revival of agrarian cultural heritage, providing distinctive pedagogical mediums embedding ethical principles, production wisdom, and aesthetic elements, thereby enhancing agricultural distinctiveness and pedagogical resonance.

2.2 Realistic Challenges

A practical problem that has not been resolved is a lack of curricular coherence; that is to say, although the subject-specific courses focus too much on intellectual training, the general courses of physical and aesthetic education lack agricultural contexts and are thus discontinuous. Due to the lack of attention to

campus facilities and special training, there has been little external cooperation with enterprises and communities outside of internships, and thus an all-round practice ecosystem for multi-dimensional integration has not been formed. The current evaluation is too concentrated on students' academic grades, and many important factors such as moral character and working ability have been overlooked; there is also a lack of comprehensive participation and processes in the assessment.

2.3 Root Causes

The reasons are that there is a problem of systemic integration, and the various parts cannot work together harmoniously in an integrated way (Li & Wen, 2020). The concept lag is that the five-education integration is only a "task for basic education" and does not have the status of a strategic system; thus, high-level design, cross-disciplinary planning and faculty training have not been achieved. The reasons for the lack of mechanisms are that people focus too much on the intellectual aspects of industry-academia-community cooperation, such as research and development and internships, and neglect the moral and aesthetic fields; there is no risk and benefit sharing mechanism to promote continuous synergy, and the faculty structure is unevenly distributed, with some specialized teachers lacking interdisciplinary teaching capabilities, especially in the integration of ethics and aesthetics, and general educators do not have sufficient agricultural knowledge because of the absence of systematic training programs.

3. Implementation Pathways for Five-Education Integration in Agriculture-Focused Universities

3.1 Strengthening Full-Chain Policy Supervision to Enhance Foundational Education Quality

Cultivating students' core competencies and promoting their holistic development constitute the paramount direction of China's educational advancement, with recent national policies, such as the Overall Plan for Deepening Education Evaluation Reform in the New Era and the Opinions on Further Reducing Homework Burden and Off-Campus Tutoring in Compulsory Education, have created an institutional environment favorable to the construction of a healthy school ecosystem and have set specific directions and goals for implementing the five-education integration; this marks a new trend in China's fundamental education reform, and if it can be realised in practice, it will ensure the long-term health of the reform. Therefore, robust policy supervision must be exercised to guide all parties involved in the implementation of policies in an orderly manner. At the level of the Communist Party of China, Party leadership should take the initiative to clarify department responsibilities and establish a top-down coordination system through vertical alignment and bottom-up collaboration to transform the whole-of-society policy system into actual educational work. At the same time, specific interpretation and guidance activities should be conducted to clarify the underlying reasons for policy changes, the underlying logic of these changes, the aims of the reform, how to carry out the implementation, and what results to expect, thereby preventing misunderstandings. Professionalised training and programme construction should be organised for administrators, educational reformers, school leaders and teachers to strengthen their understanding of policy content and execution ability; exemplary cases can be provided for others to learn from, and scientific customisation should be used to develop personalised implementation plans

based on differences in teaching quality, faculty strength and infrastructure conditions. For example, as shown in the 2020 Opinions on Comprehensively Strengthening Labour Education in Schools of All Levels, the basic ideas and scope of labour education need to be explicitly stated, scenario-based teaching modules in line with actual teaching circumstances should be designed to motivate students, particular requirements for curriculum organisation, content arrangement and assessment standards must be set to ensure the clarity of operations, etc.

3.2 Build an Agricultural Characteristic Curriculum System to Solidify the Foundation of Integrated Education

To cultivate intellect through education requires establishing a high-quality talent development system that enhances students' innovative awareness, strengthens creative thinking abilities, and fosters well-rounded professionals (Yan & Feng, 2021). Courses are to serve as the main channel for Five-Education Integration, and an agricultural characteristic curriculum system that adopts a "specialised + general + practical" trinity framework must be constructed, and it should be embedded in all parts of the education process. First, the special course can integrate all kinds of content from various disciplines; for example, ecological techniques in Agricultural Ecology can be taught in the scope of intellectual education, environmental ethics based on "Two Mountains" can be used to cultivate morality, the appreciation of farmland landscapes can be introduced into aesthetic education, and ecological planting practices may be organised as part of labour education to achieve multi-dimensional integration in a single subject and collect teaching materials containing agrarian cultural heritage and exemplary cases. Second, general courses should be reformed with agricultural characteristics by adding farm-oriented physical exercise and field cooperation activities to physical education; providing agrarian aesthetics and design of agricultural products in aesthetic education; organising rural revitalization lectures for moral education, etc., thus furnishing general courses with necessary supporting support for integration. Finally, practical courses should cover all aspects through interdisciplinary modules such as "Rural Revitalization Practice" and "Agricultural Comprehensive Service", including the five dimensions of research, service and labour activities, to boost practical effectiveness via a credit-based enforcement mechanism.

3.3 Establish Agricultural Practice Platforms to Enhance Integrated Education Efficacy

Practice platforms are necessary carriers for the implementation of Five-Education Integration, which requires the enrichment of on-campus, off-campus, and digital spaces to achieve multidimensional convergence through experiential learning. This starts with transforming on-campus bases into multifunctional hubs by building farming culture academies for practical skill development (integrating aesthetic and intellectual education), labor responsibility fields for autonomous agricultural work (combining labor and physical education), and technology demonstration corridors featuring model agricultural innovators (advancing moral education); thus, all five dimensions are embedded in single locations. It also extends to off-campus platforms through resource integration in industry-academia R&D planting bases with enterprises (encompassing intellectual, labor, and moral education), co-building agrarian experiential zones with cooperatives (merging labor and aesthetic education), and

collaborating with townships on social practice bases for rural development engagement (integrating moral and intellectual education), forming consolidated external platforms. Finally, digital interfaces deploy VR-enabled virtual farming experiences (for intellectual and labor education), livestreamed rural revitalization courses (advancing moral and intellectual education), and virtual exhibition spaces for practical achievements (enhancing aesthetic appreciation and cognitive abilities) that function as developmental nuclei, extending integration through digital ecosystems where learners use digital resources in digital environments via digital methodologies, and successful educational digital transformation is marked by synergistic human-machine advancement and mutual educator-student growth driving forward Five-Education Integration (Zhang, 2025).

3.4 Strengthen University-enterprise-community Collaborative Education to Consolidate Integrated Education Synergy

Collaborative education serves as an important safeguard for implementing the Five-Education Integration, and to achieve this, one must move beyond university-centered teaching models to establish stable “university-led, enterprise-assisted, community-engaged” mechanisms that integrate multidisciplinary knowledge to foster all-around talents at various levels; in university-enterprise cooperation, this takes the form of signing Five-Education Integration agreements to specify mutual responsibilities in embedding intellectual and labor education through specialized lectures and on-site guidance, providing authentic internship venues, vocational skill training, and labor practice platforms for practical talent development; universities can apply their technological expertise to address corporate problems, and both parties can establish funding mechanisms to support practice bases and reward excellent achievements to ensure the long-term sustainability of the partnership; extended to university-community partnerships, rural characteristics are utilized through joint agricultural training to deliver intellectual education and moral cultivation about grassroots contributions, cultural heritage activities featuring folk craft demonstrations and farming experiences foster aesthetic appreciation and ethical inheritance, and community service programs involving environmental remediation, farm labor assistance, and eldercare support build resilience through physically demanding tasks alongside feedback mechanisms for optimizing engagement; furthermore, cross-sectoral alliances are formed to bring together universities, enterprises, communities, and governments for regular governance dialogues on objectives, activity design, resource integration and evaluation systems, jointly hosting agricultural festivals and cultural-sports competitions, and establishing shared-resource platforms for academic facilities, corporate technical support, community cultural spaces and governmental policy guidance to maximise multidimensional development through mutually accountable collaboration.

Firstly, the five-in-one agricultural distinctiveness model for agricultural universities positions agricultural distinctiveness and interdisciplinary synergy at its core, using moral education to provide guidance, intellectual education for support, physical education to build the foundation, aesthetic education to add color, and labor education as the connecting element. Secondly, the existing problems of curricular fragmentation, resource dispersion and simplified evaluation originate from conceptual lags,

collaborative deficiencies and faculty imbalances. Thirdly, to achieve further progress, we need to construct characteristic curricula, multi-dimensional practice platforms and cross-sectoral cooperation mechanisms to build a trinity model of curriculum-practice-cooperation integration.

Future explorations will focus on three key dimensions: establishing a multidimensional evaluation system for Five-Education Integration with clear quantitative and qualitative metrics for each dimension while introducing external evaluators to strengthen process-oriented assessment; deepening the integration of “Five-Education + New Agricultural Science” by adding emerging fields such as smart agriculture into all educational aspects; and promoting localized adaptation while enhancing internationalization to increase the global impact of integrated pedagogy. As an organized project that requires cooperation among multiple parties, Five-Education Integration in agriculture-focused universities needs to engage in joint efforts by institutions, enterprises and society to cultivate all-around developed agricultural talents for rural revitalization. Through continuous theoretical studies and practical research, China’s agricultural universities will progressively develop distinctive Five-Education models characterized by agricultural uniqueness, thereby cultivating outstanding, well-rounded professionals to advance rural revitalization and agricultural modernization.

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