
Research on the Construction of a Teaching Ability Development System for “All-Around Education” Based on the BOPPPS Model

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Abstract: With the deepening of higher education reform in the new era, the concept of “all-around education” (covering all faculty, all processes, and all aspects of education) has become a crucial pathway for universities to implement the fundamental task of fostering virtue through education. However, current university teachers still face practical challenges in educational practice, such as a weak sense of educational responsibility, fragmented teaching design, and an underdeveloped collaborative mechanism, all of which hinder the improvement of educational effectiveness. Based on constructivist learning theory and educational ecology, and integrating the behaviorist instructional design model BOPPPS, this paper proposes a systematic, operational, and evaluable teaching ability development system for “all-around education.” Relying on a logical structure of “goal-oriented-process embedding-feedback loop,” this system deeply integrates the concept of “all-around education” into the entire teaching process, promoting a paradigm shift in teaching from “knowledge transmission” to “value guidance.”

Keywords: All-around education; Teaching ability development; BOPPPS

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1. Introduction

“All-around education” encompasses “all-faculty education, all-process education, and all-aspect education.” Its essence lies in reconstructing the educational ecosystem and breaking the long-standing separation between “teaching” and “educating.” However, current practice still encounters numerous real-world difficulties: some teachers still equate teaching with simply “completing class hours,” lacking sufficient emphasis on their educational responsibilities; ideological and political education in courses often exists in form only, with issues of “labeling” and “two skins” being prominent; the absence of cross-departmental collaborative mechanisms leads to dispersed educational resources and low overall efficiency^[1]. According to the “Annual Survey Report on the Status of Ideological and Political Work in Colleges and Universities” released by the Ministry of Education in 2022^[2], only 43.7% of university teachers believe they possess systematic educational teaching abilities, and over 60% of teachers report lacking effective guidance tools. This study aims to further expand the realization paths of “all-around education” by combining mainstream international instructional design models with significant local educational concepts.

2. Theoretical dilemmas in teaching ability development and methodological innovation of the BOPPPS model

The BOPPPS instructional design model (Bridge-in, Objectives, Pre-assessment, Participatory Learning, Post-assessment, Summary) originates from the integration of behaviorism and constructivism^[3]. It emerged from the higher education reform movement in the United States and has been widely applied in areas such as flipped classrooms, microcourse design, and blended learning. This study integrates the concept of “all-around education” into the six stages of this model to build a teaching ability development system that integrates “education – teaching – assessment.”

Table 1. Integration points of BOPPPS model and “All-Around Education”

BOPPPS Stage	Corresponding Integration of “All-Around Education”
Bridge-in	Value Guidance
Objectives	Knowledge-Competence-Character
Pre-assessment	Focus on Students’ Value Cognition Starting Point
Participatory Learning	Design Collaborative Inquiry Activities
Post-assessment	Include Competency Evaluation Scales
Summary	Realize Educational Reflection and Self-Renewal

3. Construction of a teaching ability development system for “all-around education” based on BOPPPS

3.1. Model construction logic: fusion of BOPPPS and “all-around education”

This research aims to construct a systematic and sustainable teacher teaching ability development system. To ensure the system’s scientific validity, operability, and effectiveness, we have chosen the BOPPPS instructional model as the framework. The BOPPPS model (Bridge-in, Objective, Pre-assessment, Participatory Learning, Post-assessment, Summary) emphasizes the completeness of the teaching process, student active participation, and the achievement of learning objectives. These aspects highly align with the comprehensiveness of the educational process, student subjectivity, and the overall development goals focused on by “all-around education.” This implies that the development of teachers’ teaching abilities should not be pursued in isolation from educational goals but should become the core vehicle for carrying educational concepts and driving educational outcomes.

By systematically embedding the core connotations of “all-around education” (all-faculty, all-process, and all-aspect education) into each stage of BOPPPS, teachers will be prompted to consciously practice their educational mission during regular teaching design and implementation. For example, in the “Bridge-in” stage, teachers can design content that guides students to pay attention to social realities and ignite patriotic sentiments; in the “Participatory Learning” stage, group discussions and debates can be organized to cultivate students’ critical thinking and sense of social responsibility; and in the “Summary” stage, the intrinsic relationship between knowledge points and value points can be sorted out to deepen students’ understanding of the meaning of knowledge.

3.2. Construction of the comprehensive BOPPPS “All-Around Education” mode

Based on the framework of the BOPPPS instructional model, a systematic model is ultimately constructed through integration and development. In this model, various modules are closely interconnected, not existing in isolation but interacting and influencing each other. Simultaneously, this model exhibits a spiral upward development trend, meaning that teachers’ teaching abilities can continuously achieve self-improvement and progressive development under the guidance of the “all-around education” philosophy.

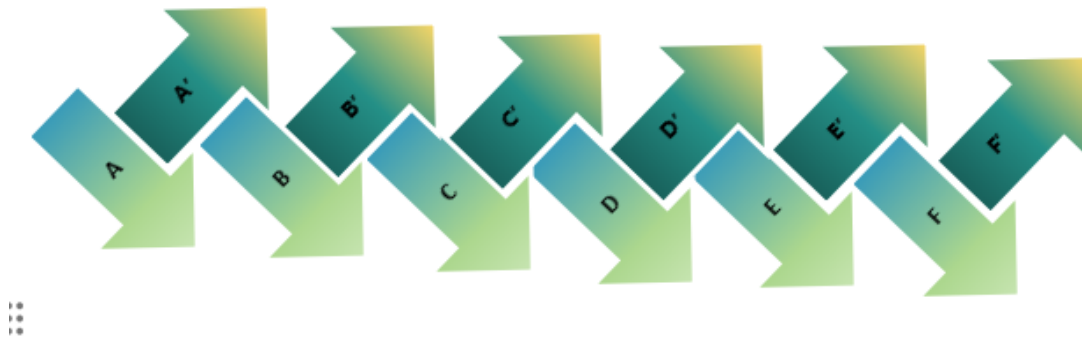


Figure 1. BOPPPS-All-Around education development model

3.2.1. Module 1: Integration and objective setting of “All-Around Education” concepts (A-A’)

Teachers need to possess the awareness and ability to set course objectives and design teaching content based on the concept of “all-around education,” naturally integrating ideological and political elements, core values, and national cultural spirit into course objectives and knowledge points^[4]. Specifically, this includes: First, strengthening value guidance. Design inspiring and thought-provoking introductory remarks or activities, such as guiding students to reflect deeply by combining hot social issues, or citing the deeds of role models to stimulate learning motivation. Second, focusing on clear objectives. Not only clearly defining “what to learn” but also setting objectives around “how to educate,” for example, “understanding the socio-ethical implications of certain technological advancements” or “cultivating independent thinking and complex problem-solving skills.” Third, detailing embedding stages. Systematically outlining the knowledge point progression of each module of the course and precisely identifying key nodes where educational elements can be integrated. For instance, “in group projects, tasks can be assigned based on principles of fairness, and the views of different members respected.” Fourth, emphasizing the manifestation of abilities. Focus on designing the curriculum outline and clearly defining educational strategies for each lesson, such as designing a “discussion” session after explaining knowledge points to guide students in combining professional knowledge with social reality issues.

3.2.2. Module 2: Precise diagnostician of student situation analysis (B-B’)

Teachers should possess the ability to design scientific and standardized diagnostic tests, accurately setting test dimensions and question types based on course objectives and student characteristics; they should be able to conduct efficient questionnaire surveys, including reasonable distribution, collection, and preliminary screening of questionnaires; they should be able to conduct in-depth interviews, skillfully using listening and guiding techniques to elicit deeper information from students’ expressions; they should be able to perform precise data analysis, extracting key conclusions with instructional guidance significance through quantitative statistical and qualitative analysis of pre-assessment results; furthermore, they need to possess the ability to quickly link diagnostic results with subsequent teaching plans, ensuring that student situation data can be promptly converted into the basis for teaching adjustments, truly achieving the goal of precise education based on diagnosis.

3.2.3. Module 3: Organizer of participatory learning for interactive construction (C-C’)

Teachers need to possess professional organizational and guidance abilities to promote students’ deeper understanding of knowledge through interactive exchange and achieve comprehensive growth through active participation^[5]. Ideological and political elements must be cleverly integrated into various activities, guiding students to learn to view problems dialectically, analyze problems scientifically, and solve problems pragmatically, while forming correct value judgments and choices. Teachers need excellent organizational and planning skills to design quality courses, precise guiding and communication skills to steer the classroom direction, efficient classroom management skills to maintain teaching order,

flexible emotional regulation skills to handle emergencies, and professional collaborative guidance skills to promote team development among students. They also need keen educational insight to promptly capture educational opportunities in teaching and organically combine knowledge transmission with value guidance.

3.2.4. Module 4: Evaluator of learning outcomes and educational feedback (D-D')

Tracing educational outcomes requires continuously tracking students' growth trajectories in values and sense of responsibility during the learning process through daily observations, regular communication, and periodic reflection reports, and promptly capturing subtle changes in their ideological dynamics^[6]. Through dynamic feedback that spans the entire learning process, students are assisted in continuously recognizing their own strengths and weaknesses in learning, achieving self-adjustment and progress. At the beginning of the course, discussion topics on values can be incorporated; in case analysis, scenarios for reflecting on the sense of responsibility can be set up; in group collaborative tasks, clear team responsibilities and divisions can be defined, naturally permeating educational goals into all aspects of teaching, so that knowledge transmission and value guidance are organically integrated. Post-assessments need to design developmental and reflective evaluation questions that guide students to internalize knowledge into their own value judgments and action principles. Through systematic organization and in-depth interpretation of evaluation data, students are provided with specific and constructive feedback to help them identify areas for improvement.

3.2.5. Module 5: Reflector on teaching and education (E-E')

When summarizing course knowledge content, teachers should simultaneously explore and extract the educational value behind teaching activities, using case analyses, scenario discussions, and other methods to inspire students to reflect on how what they have learned contributes to their personal growth^[7]. This reflects teachers' reflective analysis ability, self-awareness, and ability for improvement and innovation, achieving dual enhancement of teaching quality and educational effectiveness through continuous review and adjustment. Teachers need to regularly record reflections, forming a personal teaching growth portfolio, providing data support for long-term development; simultaneously, they can broaden their reflective perspectives through teaching and research group exchanges, expert guidance, etc., to ensure the scientific validity and effectiveness of improvement directions. The implementation of subsequent teaching plans will be tracked, and dynamic adjustments will be made based on actual effects, gradually building a teaching development model driven by reflection.

3.2.6. Module 6: Collaborator and developer in collaborative education (F-F')

At the team collaboration level, close coordination with fellow teachers in the same research group, and teaching management personnel is required to build consensus in curriculum design, teaching implementation, and student situation analysis, forming a unified educational synergy^[8]. In terms of cross-border linkage, actively linking with extracurricular practice counselors, student psychological counselors, student parents, and external industry partners is essential to break down barriers between in-class and extracurricular, and campus and societal education, constructing a comprehensive educational network covering all aspects of student growth. In terms of professional development, maintaining a lifelong learning consciousness is crucial, continuously tracking cutting-edge educational concepts, innovative teaching methods, and scientific educational strategies, and continuously improving professional qualities and educational abilities through participation in training and observation seminars. In terms of academic feedback, actively conducting teaching reform research, focusing on practical problems in the educational process, and transforming research results into implementable teaching plans are important.

3.3. Construction of a three-dimensional ability indicator evaluation system

Based on the theoretical background above, a three-dimensional capability evaluation system (**Table 2**) has been constructed. This system revolves around three core dimensions: 'Education,' 'Teaching,' and 'Development,' transforming

abstract teaching competencies into tangible and measurable indicators. These three core dimensions mutually support and promote each other, forming a dynamic system that provides a clear basis for the planning of faculty teaching capability development in schools.

Table 2. Three-dimensional evaluation system for teaching ability development based on “All-Around Education”

Dimension	Secondary Indicator	Tertiary Indicator
Education Dimension	Value Guidance	Degree of Ideological and Political Education Integration
		Transmission of Core Values
		Excavation of Disciplinary Educational Value
	Emotional Attitude	Stimulation of Learning Interest
		Cultivation of Positive Emotions
		Spirit of Scientific Inquiry
	Social Responsibility	Cultivation of Social Responsibility Awareness
		Critical Thinking and Responsibility
		Shaping of Ethical and Moral Concepts
Teaching Dimension	Teaching Design	Setting of Teaching Objectives
		Organization of Teaching Content
		Selection of Teaching Methods
		Design of Teaching Evaluation
	Classroom Organization	Creation of Classroom Atmosphere
		Effectiveness of Teacher-Student Interaction
		Time Management
		Student Participation
	Technology Application	Selection of Platforms/Tools
		Integration of Technology and Teaching
		Technology-Assisted Innovation
Development Dimension	Reflection Ability	Teaching Journal and Diagnosis
		Cause Analysis and Improvement Strategies
		Teaching Reflection and Redesign
	Cooperation Ability	Team Collaboration
		Exchange of Teaching Experience
		Interdisciplinary Cooperation
	Academic Output	Teaching Research
		Curriculum Development
		Teaching Reform Projects

3.3.1. Educational dimension

Value Guidance: The degree of integration of ideological and political education is reflected in content design that embodies ideological and political elements and presents clear value viewpoints; the transmission of core values is demonstrated through active practice in classroom interaction and case analysis; the excavation of the educational value of

disciplines involves clearly articulating the connection between disciplinary knowledge and social development, and life values. Emotional Attitude: Stimulation of learning interest effectively attracts students through classroom introductions and activity design; cultivation of positive emotions aims to foster a classroom atmosphere of confidence, mutual support, and respect; the development of a spirit of scientific inquiry or humanistic care is reflected in guiding students to question, explore, or empathize. Social Responsibility: Cultivating social responsibility awareness guides students to understand the relationship between individuals and society, the nation, and the ethnic group; fostering critical thinking and a sense of responsibility encourages students to think independently, developing the courage to solve problems and assume responsibility; shaping ethical and moral concepts in professional teaching focuses on ethical norms and moral bottom lines^[9].

3.3.2. Teaching dimension

Teaching Design: In teaching design, teaching objectives need to be clear, measurable, and aligned with educational goals^[10]; the organization of teaching content should be logical, structured, and highlight key and difficult points; the selection of teaching methods should suit the course characteristics, students' cognitive patterns, and promote interaction; the design of teaching evaluation should consider both formative and summative aspects and match teaching objectives. Classroom Organization: In classroom organization, the atmosphere should be created to be positive, open, and orderly; the effectiveness of teacher-student interaction is reflected in the quality and frequency of questions, responses, and feedback; time management requires reasonable progression and appropriate pacing of teaching segments; student participation needs to ensure that all students have opportunities for interaction. Technology Application: In technology application, the selection of platforms/tools should be based on teaching needs, employing online and offline teaching tools appropriately; the degree of integration between technology and teaching requires technology to serve teaching objectives rather than being superficial; technology-assisted innovation involves using technology to design new learning activities that enhance the learning experience.

3.3.3. Development dimension

Reflection Ability: In terms of reflection ability, writing teaching journals/diagnostic reports allows for recording and analyzing teaching strengths and weaknesses; cause analysis and improvement strategies involve in-depth exploration of the root causes of problems and proposing effective solutions^[11]; teaching reflection and redesign continuously optimize teaching plans based on reflection. Cooperation Ability: In terms of cooperation ability, team collaboration involves effective coordination with colleagues and student affairs staff to form a synergistic educational force; the exchange of teaching experience requires active participation in teaching and research activities for sharing and learning; interdepartmental/interdisciplinary cooperation promotes collaboration with relevant departments and experts both inside and outside the university. Academic Output: This includes detailed indicator breakdowns (examples, which can be further refined based on specific disciplines and levels) for publishing/exchanging teaching research papers, developing teaching cases/microcourses, and participating in teaching reform projects/research topics.

4. Conclusion

The BOPPPS model, with its structured six stages (Bridge-in, Objectives, Pre-assessment, Participatory Learning, Post-assessment, Summary), provides a highly actionable framework and leverage for the implementation of the "all-around education" philosophy. It transforms abstract educational and teaching capabilities into concrete, observable, measurable, and improvable indicators centered around "Education Dimension," "Teaching Dimension," and "Development Dimension," thereby establishing a scientific evaluation system. This spiral ascension system, emphasizing diagnosis, interaction, evaluation, reflection, and collaboration, not only points the way for teachers' self-diagnosis and improvement but also injects scientific basis for university faculty evaluations, training design, and teaching quality assessments.

However, the application of this model and its evaluation system also faces challenges. Comprehensive implementation of the model and refined operationalization of evaluation indicators may increase teachers' workload and preparation requirements, necessitating systematic training support. An overemphasis on structure and measurability carries the risk of overlooking unexpected teaching brilliance and diminishing teacher autonomy, potentially leading to a rigid teaching model. Therefore, further improving the assessment system is a direction for future research.

Disclosure statement

The author declares no conflict of interest.

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