



# Research on the Construction of College General Education Evaluation Index System Based on OBE Value-added Evaluation Model

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**Abstract:** This study focuses on the construction of the general education evaluation system in applied colleges and universities. Based on the concept of outcome-based education (OBE) and value-added evaluation, it points out that the current applied colleges and universities have core shortcomings such as theoretical disconnection, technical application lag, synergy mechanism failure, and evaluation content lag. To this end, an evaluation index system with seven dimensions as the core is constructed, covering the elements of the all-round development of morality, intelligence, physique, aesthetics and labor, and clarifying the secondary indicators and weights of each dimension. Innovative multi-subject evaluation of teachers, students, enterprises and industry experts is adopted, combined with standardized testing, practical operation assessment and other diverse evaluation methods.

**Keywords:** OBE value-added evaluation model, General education evaluation, Evaluation index system

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## 1. Introduction

In the context of the transformation of higher education from elitism to popularization and popularization, the research on general education evaluation in colleges and universities has become a cutting-edge issue in the field of education. Globally, the rise of the concept of outcome-oriented education (OBE) and the value-added evaluation paradigm has promoted the shift of education evaluation to the "output-value-added" orientation, providing a theoretical framework for reconstructing the general education evaluation system. The Ministry of Education's "Overall Plan for Deepening Education Evaluation Reform in the New Era" clearly proposes the orientation of "breaking the five unique" and requires the construction of an evaluation system of "Five Education"<sup>[1]</sup>. This policy orientation echoes the training goal of "Competency in the Digital Age" in the OECD's "Education 2030" framework<sup>[2]</sup>, highlighting the urgency of the era of evaluation system innovation.

The knowledge economy and digital transformation are profoundly reshaping the industrial structure. Artificial intelligence, blockchain and other technological iterations require talents to have complex abilities such as interdisciplinary integration, algorithm literacy and critical thinking. At present, there are structural contradictions in general education in colleges and universities, such as homogenization of evaluation system, lagging application of digital tools, and insufficient depth of integration of production and education<sup>[3]</sup>. It is difficult to adapt to the needs of

talent training under the background of "new engineering" and "new liberal arts". Based on the new requirements of talent training in the digital era, this study focuses on the orientation of "general college integration" in applied colleges and universities. By integrating OBE theory and value-added evaluation methods, a general education evaluation system with both academic innovation and practical guidance is systematically constructed, in order to provide theoretical reference and practical path for solving the structural problems in education evaluation reform.

## 2. Evaluation Index System of General Education Based on OBE Value-added Evaluation Model

### 2.1 The core principles of indicator system construction

**Achievement orientation.** Focusing on the development of students' abilities, clarify the expected learning outcomes, and ensure that the evaluation index system is highly consistent with the training objectives.

**Value-added evaluation.** By comparing the ability changes before and after learning, dynamic tracking of students' development trajectory, focusing on individual ability development.

**Multivariate collaboration.** Integrate the evaluation of multiple subjects such as teachers, students, and enterprises, taking into account both procedural and summative evaluation, and improve the comprehensiveness of evaluation.

**All-round development of moral, intelligence, physical, aesthetic and labor.** Closely combined with the needs of career scenarios, highlighting the core qualities of applied talents such as practical ability and innovative spirit, and taking into account the development of moral, intelligence, physical, aesthetic and labor.

### 2.2 Evaluation index system

This study constructs a seven-dimensional goal framework of general education achievements, and forms a systematic two-level evaluation system through first-level goal guidance and second-level index refinement.

Tabel 1. General education evaluation index system

Tier 1 indicator	Connotation interpretation
Human civilization and social responsibility	Develop students' understanding of human civilization, sense of social responsibility and moral awareness
Scientific and technological progress and scientific spirit	Enhance students' understanding of technological development, scientific thinking, and innovation capabilities
Openness and Global Literacy	Broaden students' international perspective and enhance their cross-cultural communication and collaboration skills
Information Science and Information Literacy	Cultivate students' information technology application ability, information security awareness and digital literacy
Innovation, entrepreneurship and quality development	Enhance students' innovative spirit, entrepreneurial awareness and comprehensive practical ability
Art appreciation and aesthetic experience	Strengthen students' artistic appreciation ability, aesthetic level and creativity
Labor education, knowledge and action and life health	Strengthen students' labor concepts, labor skills, and life health awareness

### 2.3 Secondary evaluation index and weight allocation

#### 2.3.1 Human civilization and social responsibility (15%)

Table2. Human civilization and social responsibility secondary indicators and weight

<b>Tier 2 indicator (weight)</b>	<b>Evaluation method</b>
Historical and Cultural Cognition (Intellectual,3%)	Standardized testing (historical and cultural knowledge contest) Course Paper Grading
Social Participation Practice (Physical,2%)	Record of practical activities (proof of volunteer service) Research report rating
Ethical judgment ability (Moral,3%)	Case Study Report Score Group discussion performance evaluation
Cultural inheritance and innovation (Aesthetic,3%)	Achievement display score (handicrafts, merchandise design) Innovation project review
Volunteer service spirit (Labor,4%)	Service organization evaluation Student evaluation

### 2.3.2 Scientific and technological progress and scientific spirit (15%)

Table3. Scientific and technological progress and scientific spirit secondary indicators and weight

<b>Tier 2 indicator (weight)</b>	<b>Evaluation method</b>
Scientific knowledge mastery (Intellectual,3%)	standardized testing (Scientific Knowledge Examination) Scientific paper reading report
Experimental practical ability (Physical,2%)	experimental operation standardization experimental operation standardization
critical thinking (Moral,3%)	Critical analysis of academic papers Debate performance
Scientific and technological innovation consciousness (Aesthetic,3%)	Innovation Project Roadshow Score Evaluation of invention and creation achievements
Technical application ability (Labor,4%)	Software operation assessment Technology application project scoring

### 2.3.3 Openness and Global Literacy (10%)

Table4. Openness and Global Literacy secondary indicators and weight

<b>Tier 2 indicator (weight)</b>	<b>Evaluation method</b>
International political and economic cognition (Intellectual,2%)	Standardized Testing (International Knowledge Test) International Studies
cross-cultural communication practice (Physical,1%)	International Conference Simulation Performance Multinational team project scoring
multicultural inclusion (Moral,2%)	Cultural Sensitivity Scale Case Study Score

Insight into international issues (Aesthetic,2%)	Policy Analysis Paper Score International Forum Participation Performance
Global issues engagement (Labor,3%)	International organization internship certificate Global Problem Solving Proposal Score

### 2.3.4 Information Science and Information Literacy (15%)

Table5. Information Science and Information Literacy secondary indicators and weight

Tier 2 indicator (weight)	Evaluation method
Information theory knowledge (Intellectual,3%)	Standardized Testing (Information Literacy Testing) Information Security Case Study
Digital tool operation (Physical,2%)	Software operation skills assessment Data processing project scoring
information ethics (Moral,3%)	Ethical dilemma case study Information behavior self-examination report
Data lake visualization (Aesthetic,3%)	Visual score Information Display Report Evaluation
Information service practice (Labor,4%)	Information consulting service record Technical Support Satisfaction Survey

### 2.3.5 Innovation, entrepreneurship and quality development (15%)

Table6. Information Science and Information Literacy secondary indicators and weight

Tier 2 indicator (weight)	Evaluation method
Cultivation of innovative thinking (Intellectual,3%)	Innovative Thinking Scale Innovative scheme design score
Entrepreneurial practical ability (Physical,2%)	Business Plan Competition Score Entrepreneurship Practice Project Defense
Risk-taking awareness (Moral,3%)	Risk decision simulation task Startup failure case analysis
Creative design ability (Aesthetic,3%)	Design review Creative display score
Project management ability (Labor,4%)	Assessment of project management tools Team member evaluation

### 2.3.6 Art appreciation and aesthetic experience (15%)

Table7. Art appreciation and aesthetic experience secondary indicators and weight

Tier 2 indicator (weight)	Evaluation method
Art theory knowledge (Intellectual,3%)	Standardized Test (Art Theory Test) Art Review Writing Rating
Art practice ability (Physical,2%)	Works display score (painting, music performance, etc.) Stage performance evaluation
Aesthetic judgment ability	Art work analysis report

(Moral,3%)	aesthetic comparison evaluation task
Artistic creation ability (Aesthetic,3%)	Creative work review (painting, design, literary creation) Art exhibition participation
Art service consciousness (Labor,4%)	Volunteer service record Service object feedback evaluation

### 2.3.7 Labor education, knowledge and action and life health (15%)

Table8. Labor education, knowledge and action and life health secondary indicators and weight

Tier 2 indicator (weight)	Evaluation method
Labor theory cognition (Intellectual,3%)	Standardized Test (Labor Theory Test) Career Exploration Report
Practical life ability (Physical,2%)	Life Skills Demonstration Score Technology application practice assessment
Develop labor habits (Moral,3%)	Labor diary records Class labor mutual evaluation
Labor aesthetic experience (Aesthetic,3%)	Labor aesthetic analysis report Creative display of labor achievements
Health management ability (Labor,4%)	Physical fitness test Health plan implementation evaluation

## 3. Evaluation method

### 3.1 Diversified evaluation subjects

The collaborative evaluation model of teachers, students, enterprises and industry experts is adopted. Teachers, as the teaching leader, comprehensively evaluate from the aspects of classroom performance, homework quality, project results, etc. Students strengthen their ability of independent reflection and collaboration through self-evaluation and mutual evaluation. Self-evaluation focuses on personal learning insights, and mutual evaluation focuses on teamwork. Enterprise and industry expert evaluations are closely aligned with professional needs.

### 3.2 Diversified evaluation methods

Comprehensive use of a variety of evaluation methods. Standardized tests use multiple question types to quantitatively assess knowledge indicators such as history, culture, and scientific theory; practical operation assessments focus on practical skills, tool operation and other practical indicators, and are scored according to operation norms and task completion; project results are evaluated by teachers, students and experts on business plans, artistic creation and other projects from the dimensions of innovation and professionalism; questionnaires and interviews collect students' satisfaction with the course and ability development suggestions; behavioral observation dynamically evaluates students' comprehensive literacy such as teamwork and labor habits in daily teaching and practice, providing a basis for teaching optimization and personalized training.

### Conclusion

This study shows that the current evaluation system has initially realized the comprehensive evaluation of students' knowledge mastery and practical ability by integrating multi-dimensional indicators, diversified evaluation subjects and diverse evaluation methods, but it still needs to be continuously optimized and improved in the depth of integration of production and education, refinement of process evaluation and application of digital evaluation tools. In the future, the evaluation mechanism will be further improved, and the accurate docking of general education goals and industrial needs

will be promoted through dynamic feedback, providing a solid evaluation guarantee for cultivating applied talents with both general literacy and professional ability, and providing important support for the practical innovation of applied college education evaluation reform.

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