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Research on Curriculum Implementation Path of "Recordable, Trackable and Evaluable" Professional Literacy: Taking the Basic Modeling Course in Higher Vocational Colleges as an Example

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Abstract: The cultivation of professional literacy is an important direction of current curriculum reform in higher vocational education. However, in practical teaching, professional literacy is often faced with problems such as abstract objectives, implicit implementation and difficult evaluation, which makes it hard to truly present the educational effect of courses. Taking the Basic Modeling course for game art design major in higher vocational colleges as an example, this paper carries out research on how to realize recordability, trackability and evaluability of professional literacy in courses. The research shows that the cultivation of professional literacy in higher vocational courses should shift from outcome evaluation to observation of process behaviors, and from implicit infiltration to explicit recording and tracking.

Keywords: Professional literacy; Process evaluation; Curriculum reform; Higher vocational education; Basic modeling

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1. Problem proposal

To clarify the actual requirements of the game industry for basic modeling ability and professional literacy, this paper first sorts out public industrial reports. Comprehensive macro data show that basic modeling is one of the core competencies for game art posts and an important consideration factor in enterprise recruitment. Nevertheless, three common problems still exist in the cultivation of professional literacy in current art and design courses of higher vocational colleges. First, the training objectives are relatively macroscopic and difficult to be implemented into specific classroom behaviors. Second, professional literacy is mostly integrated implicitly without a continuous observation mechanism. Third, evaluation methods still focus on finished works, which cannot truly reflect students' development process.

As an important basic course for game art design majors, Basic Modeling undertakes the crucial task of shaping students' modeling logic, spatial awareness and professional learning habits, and boasts great potential for cultivating professional literacy. However, traditional teaching pays more attention to skill training and lacks systematic design for the development of professional literacy.

Professional literacy refers to the comprehensive quality required by practitioners in professional activities, including professional ethics, professional awareness, professional behavior habits, and professional skills, which serve as the basic qualification for post-employment [1]. As an introductory course for game art majors, Basic Modeling is a vital carrier to implement this educational philosophy. On this basis, this research takes the Basic Modeling course as a carrier to explore the curriculum implementation path of making professional literacy recordable, trackable and evaluable, so as to provide practical reference for curriculum reform of art and design majors in higher vocational colleges.

2. Research design

2.1. Research objects

This research takes 64 students from two classes of the Game Art Design major of a higher vocational college admitted in 2025 as research objects. The implementation cycle of the course lasts from September 2025 to December 2025, with a total of 32 class hours.

2.2. Research methods

This research adopts action research with the basic path of "Plan – Action – Observation – Reflection", and carries out continuous teaching optimization in a real classroom environment. The specific research methods include:

(1) Questionnaire survey method: used to understand students' basic abilities, learning psychology and professional cognition.
(2) Industry research method: used to clarify the professional literacy requirements of game art posts through industrial reports and post demand analysis.
(3) Classroom observation method: dynamically record students' classroom behaviors and task completion status.
(4) Work analysis method: observe the changing trend of students' abilities through the quality variation of assignments.
(5) Process evaluation method: continuously track students' learning process by virtue of professional literacy development record sheets.

3. Curricular transformation of professional literacy

3.1. Analysis of industrial demands

Through analyzing recruitment information, industrial reports and enterprise demands related to game art posts, the research group finds that apart from painting skills, enterprises attach greater importance to the following professional literacy: awareness of task standardization, learning adaptability, structural analysis ability, problem correction ability, as well as communication and feedback awareness. This indicates that art and design courses in higher vocational colleges need to cultivate not only skills but also students' professional behavior habits. Existing studies have pointed out that art and design majors should build a three-

dimensional competency model of "Aesthetic Cognition – Aesthetic Application – Aesthetic Creation", and advance technical training and aesthetic literacy simultaneously, which provides an operable framework for the curricular transformation of professional literacy [2].

3.2. Academic situation analysis

Preliminary surveys reveal the following characteristics of students: a high proportion of students with zero foundation, weak spatial structural ability, insufficient self-reflection awareness, varying learning persistence, and limited cognition of industrial professional requirements. In addition, some students tend to feel discouraged when facing complex tasks and lack awareness of continuous adjustment and optimization.

Based on the above characteristics, the research group holds that the cultivation of professional literacy should take basic professional behavior habits as the entry point rather than instilling macroscopic value objectives directly.

3.3. Behavioral design of professional literacy

To systematically track the development of students' professional literacy during course learning, targeting the features that literacy is hard to quantify and observe, the research group develops and designs "Professional Literacy Development Record Sheet" in accordance with the five professional literacy training objectives of this course (with curriculum ideological and political education functions), student academic evaluation scale which acts as the key tool for performance task implementation, curriculum standards of game art majors [3], as well as evaluation scales — the core tool for task implementation [4,5]. The design of the record sheet aims to achieve three goals: first, visualize abstract literacy concepts, enabling students to perceive the existence and changes of their own literacy; second, provide a structured framework for students' self-reflection and cultivate their metacognitive ability; third, help teachers collect process evidence to verify the actual impact of curriculum reform on professional literacy. The record sheet uniformly consists of four parts: basic task information, core reflection module, teacher evaluation, signature and supporting evidence. Five types of record sheet templates are designed for different task types, and the corresponding relations are shown in **Table 1**.

Table 1. Corresponding relations between teaching tasks and literacy record sheets

Teaching Task	Record Form	Design Intention
Basic Perspective Practice	Reflective Journal Type	Focus on principle comprehension and self-review; document gains & losses in practice as well as the internalization of knowledge.
Geometric Decomposition of Daily Objects	Question Series Type	Guide observation and reasoning through a series of questions; use standardized forms to check key decomposition points.
Structural Mini-scenario	Work Analysis Type	Take finished works as the carrier to evaluate learners' ability in spatial construction and hierarchical design.
Human Bodies / Animals under Structural Framing	Observation & Recording Type	Track on-site drawing behaviors and revision processes, and collect evidence of hands-on operation habits.
Light and Shade Practice of Geometric Solids	Question Series Type	Adopt progressive questions to guide observation of light and shadow and exploration of relevant rules.
Object Material Representation & Spatial Volume Perception	Work Analysis Type	Evaluate the capability of material expression and detail processing based on completed works.
Light and Shadow Design for Mini-scenes	Reflective Journal Type	Fully record creative ideas, light-shadow design schemes and personal self-reflection.

The record sheet is implemented in the mode of "self-evaluation after tasks + sampling evaluation

by teachers", and tracks the developmental changes of students' professional literacy through continuous records. The professional literacy objectives of each teaching task correspond one-to-one with the observation points of the record sheet. For example, the module of basic perspective exercises targets cultivating rational analysis awareness and scientific logic consciousness, strengthening awareness of standardized expression and execution, and forming habits of active error checking and reflection. The observation points of the record sheet include whether one can accurately draw one/two-point perspective and mark key elements, whether the horizon and vanishing points are marked in accordance with specifications, and whether perspective errors can be actively discovered and corrected. Through the above corresponding design, the curriculum refines professional literacy objectives into behavioral performances in specific learning tasks, enabling students to form awareness of standardization gradually, a sense of responsibility and a meticulous work attitude while receiving professional skill training, and constructing an implementation path of "Professional Literacy Objectives – Task Behavioral Performances – Process Evaluation".

4. Curriculum implementation path

4.1. Reconstruction of curriculum modules

Based on the cognitive dimension of Bloom's Taxonomy of Educational Objectives [6], 3 modules and 7 teaching tasks are designed, focusing on cultivating spatial observation & logical analysis ability, structural generalization & problem decomposition ability, as well as detail processing & comprehensive expression ability. The curriculum design emphasizes progressive tasks and competency transfer, guiding students to establish a professional learning mode gradually.

4.2. Design of professional literacy development record sheet

The "Professional Literacy Development Record Sheet" serves as the core tool of this research. It covers task completion status, problem description, self-reflection, revision records, teacher feedback and literacy performance grades. Its purpose is not merely scoring, but helping students build a learning cycle of "Problem Discovery – Problem Analysis – Problem Adjustment" [7]. For instance, in perspective training, students need to record whether vanishing points are positioned accurately, whether proportions are unbalanced, and whether improvements are made after revision. This process strengthens students' awareness of structural analysis and self-correction, thereby promoting the development of their thinking ability and judgment [8]. Relevant practical cases prove that the closed-loop mechanism of "Refined Behavioral Indicators – Process Recording & Tracking – Phased Feedback & Adjustment" can transform professional literacy from soft requirements to hard indicators, and effectively solve the problems of vague standards and invisible process in literacy cultivation [9].

4.3. Classroom implementation and dynamic adjustment

During curriculum implementation, teachers continuously observe students' problems through classroom patrol guidance. The research group dynamically optimizes the teaching process via the circulation mechanism of "Classroom Observation – Assignment Analysis – Teaching Adjustment".

5. Analysis of implementation effects

5.1. Changes in students' assignment quality

Longitudinal observation of seven batches of assignments shows that the proportion of perspective errors

drops significantly, the ability of structural generalization improves gradually, scene organization capability is enhanced, and students can comprehensively apply knowledge they have learned step by step. Especially in later tasks, some students are able to take the initiative to revise proportional problems and optimize picture structures independently. This indicates that students have initially formed awareness of problem analysis and professional learning habits.

5.2. Changing trend of literacy record sheets

Analysis of record sheets reveals that the completeness of records rises steadily, the proportion of invalid filling decreases remarkably, reflections become more specific, and students begin to adopt quantitative language to describe problems. For example, students tend to use vague expressions such as "the proportion is not quite right" in the early stage, while some students can specifically describe problems like "the deviation of left perspective angle is about 10 degrees" in the later stage. Such changes demonstrate the gradual formation of students' structural analysis ability and problem description capability.

5.3. Functions of process evaluation

The research finds that process recording tools have the following functions: fostering students' continuous reflection awareness, strengthening students' sense of task responsibility, helping teachers discover common problems, providing a basis for teaching adjustment, and shifting the cultivation of professional literacy from implicit to explicit. Compared with traditional outcome evaluation, process evaluation can better reflect students' developmental trajectory. In literacy-oriented courses of higher vocational colleges, constructing a multi-dimensional evaluation system integrating value-added evaluation, timely evaluation and delayed evaluation can fully capture the gradual changes of students' professional behavioral habits and avoid the limitations of single outcome orientation [10].

6. Existing problems and reflections

6.1. Limitations in research implementation

A high proportion of students have zero foundation, so some originally planned contents fail to be fully implemented, including group collaborative teaching, classroom mutual evaluation and time-limited training. This shows that sufficient consideration should be given to teaching hours and students' basic conditions when carrying out professional literacy cultivation in basic courses of higher vocational colleges. In addition, some students fill the record sheets with empty content or simple copies without real reflection. This phenomenon implies that the awareness of professional literacy has not been fully internalized. Nevertheless, students' filling attitude itself can reflect their sense of responsibility and learning engagement, which therefore also has observational value. Professional literacy is long-term and complex, and complete cultivation cannot be realized relying on a single course alone.

7. Conclusion

This research verifies the core conclusions through curriculum practice: professional literacy should be transformed into specific behaviors for curricular expression; process evaluation can effectively strengthen students' reflection awareness; the circulation mechanism of "Recording – Feedback – Adjustment"

contributes to the formation of professional behavioral habits; the cultivation of professional literacy in higher vocational courses should pay more attention to behavioral changes in real classrooms rather than abstract slogans. Meanwhile, this research also finds that the cultivation of professional literacy is not a short-term result but a continuous developmental process. Further research can be deepened in the fields of cross-curriculum collaboration, multi-dimensional evaluation and long-term tracking in the future.

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