Design and Practice of Social Practice Courses Based on Capability Maturity Model: A Case Study of News Edition

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Abstract

As a powerful support for students' innovation and entrepreneurship in application-oriented colleges and universities, the social practice course completes the leap from academia to the industry during students' schooling and achieves the breakthrough from learning knowledge to solving social problems. Taking the social practice course News Edition as an example, relying on the BOPPPS teaching model and questionnaire survey method, this paper explores the construction and practice of the practice course with the help of the Analytic Hierarchy Process (AHP). By introducing the Capability Maturity Model (CMM) and using SPSS Software to output the KendallW coordination coefficient, the practical ability of students is evaluated from multiple evaluation systems, thus deriving the problems and improvement directions of the construction of social practice courses.

Keywords: *social practice; big data; BOPPPS model; Hierarchical Analysis Process (AHP); Capability Maturity Model (CMM)*

1. THE BASIS FOR THE CONSTRUCTION OF THE "1+2+3" CURRICULUM EDUCATION SYSTEM

News Edition is a professional core course combining theory and practice offered by the School of Journalism and Communication of general undergraduate institutions, targeting second-year undergraduate students. Especially under the environmental influence of new media, new media editing skills and capabilities turns into the basic media literacy that contemporary college students should have.

1.1. Policy Guidance with Precise Positioning

With the proposal of the "Double Ten-Thousand Plan" (a plan to build about 10,000 national-level and about 10,000 provincial-level first-class undergraduate courses) by the Ministry of Education, the social practice course was included in the curriculum construction system of colleges and universities for the first time [1]. News Edition was recognized as the first-class undergraduate course in Henan Province in 2021. In the exploration and practice of construction, the course has established the

orientation of being "local-based, regional-serving, correct-minded and skillful." Under the guidance of national policies and in line with the development of the times, the "1+2+3" curriculum education system is built with project-based and modular teaching reform, i.e., "One Goal," "Two Advances," and "Three Achievements."

One Goal. We cultivate students to be innovative and professional with the moral character and perspective of patriotism, integrity, courage, and commitment. Students are expected to understand the basic principles of news edition, construct the thinking model of communication in the era of intelligent media, and have new editing skills and practical skills. Hence, we can achieve the goal of cultivating talents in synergy with the new era of socialism with Chinese characteristics.

Two Advances. Relying on classroom lectures and "Yellow River culture," "red classics," "innovation and entrepreneurship," "poverty alleviation," and other thematic practical training units, we guide students to integrate content learning and editing with ideological and political work, with synchronous training of new media editorial thinking and comprehensive practical ability. The first is to promote political and professional

literacy simultaneously to advocate that extensive knowledge is acquired with morality and justice. The second is to promote the complementary integration of media tutors and university supervisors, achieve the application of practical training results, and extend service regional propaganda.

Three Achievements. We pursue the achievement of value leadership, the achievement of the identity of knowledge and practice, and the achievement of work transformation.

1.2 Support of Iceberg Model

The curriculum construction adheres to the concept of ideological and political education, expecting to highlight the cultivation of students' professionalism and practical ability. Special emphasis is placed on students' professional competence. In 1973, Professor McClelland put forward the famous Iceberg Model at Harvard University [2]. As the name suggests, this theory divides the cultivation of talents into "the part above the iceberg that is exposed on the outside" and "the part below the iceberg that is hidden on the bottom of the sea," which is later called explicit and implicit literacy by many scholars.

Explicit and implicit literacy plays an essential and central role in the process of developing students' quality and competence in social practice courses. The development of students' professional competence cannot be ignored in the construction of social practice courses.

2. CONTENT CONSTRUCTION OF NEWS EDITION BASED ON THE BOPPPS MODEL

The concept of the BOPPPS model was first introduced by Douglas Kerr's team in 1978. It is one of the more popular teaching methods and was widely used in online lectures during the pandemic [3]. The model was proposed to place more emphasis on student dominance in instruction and highlight the concept of student-centered teaching and learning. The course content of News Edition is constructed in a way that is more conducive to social practice activities under the penetration of the BOPPPS model and thus more effectively enhances students' practical skills.

2.1. Complete Teaching Steps with Emphasis on Developing Students' Practical Skills

The BOPPPS teaching model divides the teaching steps into Bridge-in (B), Outcome (O), Pre-test (P), Participation (P), Post-test (P), and Summary (S). Professional teachers and media tutors independently or cooperatively complete the teaching steps of each part. Referring to Capability Maturity Model (CMM) and the research results of experts and scholars, this paper establishes the CMM of journalism majors, explores the practical capabilities that should be possessed by the cultivation of talents in the course of curriculum construction, and proposes the "three leading literacies" that journalism students should possess, namely, basic professionalism, practical literacy to recognize and serve the community, and integration literacy for innovation and entrepreneurship. Besides, the competencies are summarized into five levels according to their maturity, i.e., Initial, Repeatable, Defined, Managed, and Optimizing.

Table 1 "Three Leading Qualities" of Journalism Students in Social Practice

	Basic professionalism	Practical literacy to recognize and serve the community	Integration literacy for innovation and entrepreneurship
(Initial)	No basic professionalism	No practical literacy to recognize and serve the community	No integration literacy of innovation and entrepreneurship
(Repeatable)	Basic theoretical knowledge of news report planning, news article analysis and selection, news headline production for integrated media platforms, report configuration, report synthesis, and layout.	Practical training for the understanding of report synthesis design of new media platforms (Weibo, WeChat, and Apps).	Under the guidance of professional teachers and media tutors, students are able to understand the practical training of the enterprise proposition for school-enterprise integration.

(Defined)	Under the guidance of professional teachers and media tutors, students are able to carry out practical work such as news report planning, news article analysis and selection, news headline production for integrated media platforms, report configuration, report synthesis, and layout.	Students are able to participate in social practice activities and conduct practical training on the synthesis and design of reports on new media platforms (Weibo, WeChat, and Apps).	Under the guidance of professional teachers and media tutors, students are able to complete the practical training on the enterprise proposition for school-enterprise integration.
(Managed)	Students are able to independently plan news reports, analyze and select news articles, create news headlines, report configuration, report synthesis, and layout for integrated media platforms.	Students are able to better integrate into the team, actively participate in social practice activities, and better carry out practical training on the synthesis and design of reports on new media platforms (Weibo, WeChat, and Apps).	Under the guidance of professional teachers and media tutors, they are able to work independently or in teams to complete the practical training of the enterprise proposition for school-enterprise integration.
(Optimizing)	With strong news sensitivity, students are innovative in news report planning, news release analysis, and selection, news headline production for integrated media platforms, report configuration, report synthesis, and layout.	With a strong awareness of recognizing and serving the community, they can independently and actively conduct practical training on synthesizing and designing reports on new media platforms (Weibo, WeChat, and Apps).	With a strong sense of innovation, under the guidance of professional teachers and media tutors, students are able to exceed the practical training of the enterprise proposition for school-enterprise integration and serve society with the results.

2.2. Teaching Content Innovation Emphasizing the Cultivation of Students' Practical Skills

The social practice course is set up with "Peace" as the starting point, with Dominant, Course, and Action as the effect goals, building a multi-dimensional "learning circle" of classroom learning and social practice. The course is designed to complete the closed loop of professional theory, professional skills, and comprehensive practice.

The specific teaching content is aimed at achieving the above-mentioned practical ability of talent cultivation. The construction of a project-based and modular teaching content system is as follows:

Table 2 Teaching Content of News Edition

Teaching Content of News Edition
Introduction of Ideological and Political Contents
Paying attention to the ideological and political
contents of the curriculum, and running it through the entire teaching content system
Lecture on Theories
Lectured by professional teachers
Focus on the fundamentals
Basic theory
Understanding the new media environment
Responsibilities
Media Tutor Assignment Publish
Inviting the media tutor to publish the assignment as per the project
Project Practice
Guidance by a professional teacher
Focus on the process
Basic skills
Recognizing and serving the community
Training of practical ability
Project Report
Reviewed by media tutor

| Focus on the demonstration |
| Editorial thinking |
| Recognizing and serving the community |
| Improvement of practical ability |
| Work Output |
| Competition-education integration |
| School-enterprise integration |
| Literary-professionalism integration |
| Professionalism-innovation integration |

2.3. Innovation of Teaching Methods to Achieve the Improvement of Students' Practical Ability

In the six-part teaching process of introduction (B), learning objectives (O), pre-class quiz (P), interactive learning (P), post-class test (P), and reflection and summary (S), the teaching tools of social practice courses need to be constantly changed and updated. The teaching methods actively approach the deep integration of the Internet and information technology to reach the goal of improving the practical ability of students.

3.   COURSE ASSESSMENT AND EVALUATION OF NEWS EDITION

The course establishes a sound multi-dimensional assessment and evaluation system and supervision and inspection mechanism, with scoring based on basic theory (scored by professional teachers), practical training works (scored by media tutors), and additional achievements (competition awards, innovation, and entrepreneurship, etc.).

3.1. Determining the Level Criteria of Capability Maturity Evaluation

All evaluation metrics in this paper are divided into five maturity levels using a 5-point scale. The Initial level corresponds to 1 point; Repeatable, 2 points; Defined, 3 points; Managed, 4 points; and Optimized, 5 points.

3.2. Establishing a Multiple Indicator Evaluation System

In this paper, we will construct an evaluation index system from three aspects, including basic professionalism, practical ability to recognize and serve the community, and integration literacy of innovation and entrepreneurship, and thus evaluate the maturity of students' practical ability.

3.3. Determining Weights with the Help of Hierarchical Analysis Process (AHP)

AHP is a decision-making method that decomposes the elements always related to decision-making into

levels such as objectives, criteria, and options, on the basis of which qualitative and quantitative analysis is performed [4]. In this paper, the weights of three competency qualities were determined with the help of AHP. Besides, given the rigor and accuracy of the conclusions, we invited six experts from academia and industry inside and outside the university to determine the weights of the index system.

The KendallW coordination coefficient, also known as the harmony coefficient, or consistency coefficient, is used in scenarios where inter-rater agreement is measured across multiple raters to ensure the reliability of the data before the weights are calculated.

$$W = \frac{12\sum_{i=1}^{n} R_i^2 - 3m^2 n(n+1)^2}{m^2(n^3 - n)}$$

Where m is the number of raters, n is the number of individuals, R_i is the sum of the i-th individual's rank, and S is the sum of the squares of the deviations of the individuals' total rank from the mean rank

$$S = \sum_{i=1}^{n} \left(R_i - \frac{m(n+1)}{2} \right)^2$$

. The range of values of W is $0 \le W \le 1$. The larger the value of W, the more the Kendall coordination coefficient should reject the null hypothesis and accept the alternative hypothesis. For sure, both W and S are available on the table. When n is large, under the null hypothesis H0, for a fixed m, when n tends

$$m(n-1)W = \frac{12S}{mn(n+1)} \rightarrow x_\alpha^2(n-1)$$

to infinity, the significance test decision can be made. After the weighting of the primary indicators by six academic and industry experts from inside and outside the university, this study used SPSS software to output the KendallW coordination coefficient, which ranges from 0 (completely inconsistent) to 1 (completely consistent). KendallW = 0.7559 was obtained, indicating a high level of consistency in the scoring of the six expert pairs and credible data (Table 3).

Table 3 Test Statistics

N of cases	6
Kendall W [a]	.7559
Chi-square	6.706
DOF	2
Asymptotic Significance	.005

a. Kendall's co-efficient

Then the corresponding elements of the judgment matrix made by the six experts were arithmetically averaged to find the corresponding average values (retaining two decimal places), and the corresponding weight values for basic professionalism, practical literacy to recognize and serve the community, and innovation

and entrepreneurship were 0.378, 0.324, and 0.297, respectively. Using the same method, the weights of the secondary indicators were calculated (Table 4).

Table 4 Indicators and Weights of Each Level with the Help of AHP

Indicator I	Indicator II	Weights
Basic Professionalism 0.378	News Coverage Planning	0.199
	Press Release Analysis and Selection	0.170
	News Headline Production for Integrated Media Platform	0.156
	Report Configuration	0.149
	Report Synthesis	0.149
	Layout	0.177
Practical Literacy to Recognize and Serve the Community 0.324	The Practice of Marxist Concept of Journalism	0.182
	Interpersonal Communication	0.144
	Self-awareness	0.167
	Teamwork	0.189
	Knowledge Application	0.159
	Practical Awareness	0.159
Integration Literacy of Innovation and Entrepreneurship 0.297	Communication Skills	0.173
	Spirit of Giving	0.165
	Patriotic Education	0.143
	Bravery	0.165
	Divergent Thinking	0.195
	Practice & Innovation	0.158

3.4. Evaluation Results

In this paper, a total of 196 questionnaires were distributed to journalism students in the classes of 2018 and 2019, and 184 questionnaires were collected, with an effective rate of 93.88%. The questionnaire reliability Cronbach's α coefficient was tested to be 0.924.

From the evaluation results of the CMM, the practical competencies of journalism students in grades 2018 and 2019 are still at the defined level. If the comprehensive maturity of competency is Q, then we get Q2019> Q2018, and the difference in comprehensive maturity of journalism students in the two grades is not obvious.

3.5. Analysis of Evaluation Results

According to the above statistics, the practical ability of journalism students in 2018 and 2019 is at the defined level; that is, they are able to complete the corresponding theoretical study and social practice under the guidance of professional teachers and media tutors, and accomplish real practical training projects of enterprise proposition. However, there is a lack of innovation and leadership,

still indicating their gap from the "1+2+3" training goal of News Editor, mainly due to the following reasons:

The first is that the student-centered teaching concept needs to be further implemented. The teaching reform based on the BOPPPS model needs to truly implement the student-centered teaching concept in the six teaching steps. The current class lecture does not give full play to the advantages of practical courses, and the proportion of professional teachers is larger, which affects the development of students' innovative and entrepreneurial personalities and has a certain resistance to the cultivation of students' practical ability. In the process of teaching reform, it is necessary to further implement and enforce the student-centered teaching concept.

The second relates to the limited vision of the social practice. Based on the overall idea of the iceberg model for talent cultivation, we should actively explore the potential literacy of students "hidden under the iceberg" in the planning of curriculum construction. We should broaden the vision of social practice, expand the field of social practice, guide students to participate in more types of social practice activities, and stimulate students' implicit literacy.

The final is the insufficient integration of ideological and political elements. News works need to be completed under the guidance of the Marxist view of journalism, and cultivate students' moral character and perspective of patriotism, integrity, courage, and commitment. At present, the social practice course requires further excavating the ideological and political elements to help students really understand responsibility and commitment in practical training and cultivate good moral character and perspective.

4. CONCLUSIONS

For the first time, social practice courses are incorporated into an independent curriculum construction system, requiring students to have a high level of practical skills. In the construction process of related practical courses such as News Edition, the principles of the iceberg model are used as the support to explore the extent of students' learning practical ability through the evaluation of the CMM [5]. The evaluation results show that students' practical ability is still at the stage of being able to complete practical training works, and their innovative and entrepreneurial ability and media integration ability still need to be improved. Through the questionnaire survey, the weak points of students' abilities are obtained, and effective reforms are proposed for future course construction. It further highlights the advantages of the BOPPPS model and gives great play to the effectiveness of practice, thus realizing the construction effect of social practice courses in application-oriented undergraduate universities.

Fund Project

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