

Vocational Teacher's Demand Analysis for the Literacy-Oriented Teaching of the 12-Nation New Curriculum: Multi-case Research Design Method

Chun-Mei Chou, Chien-Hua Shen, Tsu-Chuan Shen, and Tsu-Chi Shen

Abstract—The study aims to understand that the vocational teacher responds to the teaching needs of the literacy-oriented teaching of the 12-nation new curriculum. It is important of the impact of the new curriculum on teaching and the schools' literacy-oriented teaching contents. In order to achieve this goal, this study uses a number of case studies to understand the views of teachers and vocational education experts on the teaching and needs of the 12-nation new curriculum. The result of vocational teachers' literacy-oriented teaching need was "course conversion" (30%), "curriculum development and design" (24%), "Education practice" (16%), "Student assessment" (12%), "Parental communication" (10%) and "Professional leadership" (8%). In order to understand the practical difficulties that vocational teachers may face and the measures that can provide professional teaching, and propose in-service teachers' learning activities. It is important to effectively cultivate teachers' professional-oriented teaching professional ability.

Index Terms—Literacy-oriented teaching, 12-nation new curriculum, transformative learning, teaching decision-making.

I. INTRODUCTION

Since the 108th school year, the Ministry of Education has carried out reforms on the professionalism of the teacher training curriculum. The professional quality of teachers' teaching and the curriculum benchmarks in response to the 12 years of national curriculum [1], [2]. The promotion of the content is the "teacher training curriculum benchmark". In the first stage, the "educational idea", "professionalism" and "future power" of the teacher's image are respectively on the "educational concept", "learner's needs", "course teaching and assessment" and "positive environment". The five major teachers' professional literacy and 17 professional indicators, such as counseling and professional ethics, serve as a pre-employment teacher training norm and its curriculum benchmarks and supporting measures [3], [4].

The benchmark of the teacher training curriculum has two major concepts in response to the new curriculum of the

12-nation education. First, it is to authorize professional autonomy, the teacher's professional quality and curriculum standards are loosened, and the name of the subject is not standardized. Second, it is the Literacy Teaching Program. The school adjusts the content of the current curriculum and rethinks the content of the course [5], [6]. In terms of vocational education, we will strengthen the core literacy of the 12-nation new curriculum of practical and cross-disciplinary competence, and through the professional training mechanism and the development of a literate-oriented practical evaluation system, with a close integration of the 12-nation education curriculum [7], [8].

There are four objectives for the vocational education in response to the 12-nation new curriculum, was: 1) Establishing a technical college and a technical high school practice selection mechanism, and strengthening the technical colleges to learn and coach technical students. Employment connection. 2) Cultivate professional and technical talents with practical, innovative and employable skills in vocational and technical education. 3) Promote the practical study of technical teachers in the industry to enhance the practical experience of teachers. 4) Strengthen the practical teaching and practical ability as the core value, connect the bridge between school education and workplace practice, and hire professional technical teachers [3], [9], [10] [11].

There are three impacts on the professionalization of the 12-nation new curriculum vocational teaching, was: 1) In the face of the 12-nation new curriculum, it is necessary to guide the course to be coherent, and the core literacy guide course is longitudinally coherent and horizontally integrated. A description of "cross-domain skills" for vocational teachers is the main challenge of the literacy-oriented teaching professionalization. It can guide and develop the "learning focus" suitable for students' physical and mental development, life experience and cultural background. Face to the weak motivation of higher vocational students and teachers should cultivate students' ability to solve problems and adapt to life, so that students become active learners as one of the challenges of the new curriculum. 2) Cultivate the core competitiveness of the innovative society, competencies and the learning connotation that can adapt to future employment needs, and adopt professional competencies to guide teachers' education policies. Teachers are faced with the need to adapt to the changes in the profession and the value of the job market. 3) The 12 National Education New Curriculum outlines with core literacy of the three major projects for the nine major projects. The view was serving as the basis for the follow-up development of the syllabus of the

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learning field. It is hoped that in addition to the learning of traditional subjects and it will also take care of "cross-border". The development of "cross-domain" capabilities [12]-[15]. Teachers face 12-nation curriculum, which is based on knowledge from abilities to literacy-oriented and using domain learning to replace the planning of individual subjects. It is need that teachers' literacy-oriented ability is cultivated with the discipline as the benchmark.

Based on the above, the Ministry of Education's 12 years new national curriculum is based on pragmatic use as the core concept of vocational education. The curriculum design emphasizes both practice and theory, and also considers internship and teaching so that students can smoothly learn what they have learned. In order to achieve this goal, 12 years of new national curriculum training technology-based high school teachers are focused on the use of industry practice as the backbone of the literacy-oriented teaching [16], [17]. It can through the industry representatives to plan teachers' professional-oriented teaching professional skills, teaching design and teaching capabilities. It is necessary in order to strengthen students' practical skills. The purposes of this study are:

- 1) Exploring the content of vocational teachers' literacy-oriented teaching adjust 12- national curriculum.
- 2) Understand the influence factors for vocational teacher's literacy-oriented teaching on 12-nation curriculum.
- 3) Analyze the literacy-oriented teaching of the 12-nation curriculum in response to the schools' improvement strategy.

II. PROCEDURE FOR PAPER SUBMISSION

A. Method

The multiple case study design method aims to gain a deeper understanding of the literacy-oriented teaching from cognitive perception, intentional practice, decision-making reflection and transformational learning. The purpose is to test and understand the teacher's practice of literacy-oriented teaching and transform learning situations [18], [19]. It is important that pay attention to the teacher's reflection on the cognitive intentions of literacy teaching to the teaching behavior, as well as the development process of adaptive professionalism.

The aim is to understand teachers' opinions and suggestions on literacy-oriented teaching, and the intention of teachers to practice literacy-oriented teaching.

B. Subjects

The research using semi-structured interviews of eight vocation teachers who including two in accounting, business, computer, and international trade fields. It is responsible for the cognitive content and needs of the literacy-oriented teaching practice of the 12-nation new curriculum. Challenges and dilemmas. Each interview lasted for about 90 minutes, and the semi-structured questionnaire prepared in advance led the interviewed teachers. The applicants of this study led the research assistant to lead the interview work, followed by the two well-trained research assistants. Collect basic information about teachers such as age, gender,

qualifications and professional experience.

C. Measures

The multi-case semi-structured interview form is designed to collect insight into the practical situation and challenges of vocational teacher's professionalization in literacy-oriented teaching and its impact on teaching specialization. The semi-structured interview questionnaire is a reference from some research. The multi-case semi-structured interview table items are: 1). Vocational teacher faces the teaching needs of literacy-oriented teaching of 12 years new national curriculum; 2). Vocational teacher faces the influence of 12 years new national curriculum on teaching; 3). The literacy-oriented teaching of the vocational teacher in the face of 12 years of new national curriculum requires the school to provide a response strategy. 4). To understand the teaching needs of the Vocational Teacher's group of subjects in the 12 years of national curriculum [20], [21].

This study was supplemented by audio recording and transcription coding and the data was obtained using NVivo data analysis program, video clip selection, initial coding, classification, conceptualization and counting. Respondents according to their background code: A is the accounting teacher; B is the business teacher; I is the computer teacher; T is the International Trade teacher, the number is the respondent order.

III. RESULT

A. Vocational Teacher Faces the Literacy-Oriented Teaching of 12 Years New National Curriculum

Vocational teachers face the literacy-oriented teaching of 12 years new national curriculum. The teaching needs of teaching specialization are: 1) I hope to understand and understand the content of the new curriculum; 2) The Ministry of Education advocates the need to increase the number of science and technology, but Only in the summer vacation (such as the empowerment class), but the summer vacation is the private school enrollment season, but can not participate. 3) The new curriculum should be coordinated with the current situation of teaching. The skills field curriculum emphasizes the basic technical ability of each subject. 4) Too much emphasis on the examination, especially the Department of Capital Affairs still tied to the business management examination can not highlight the characteristics of the department. (5) Course hours do not consider the difficulty of the course, especially the number of accounting courses is insufficient. From the above, teachers can learn to plan courses and learn to use unit knowledge and apply knowledge concepts are transformed into core problems [13], [22]. By arranging appropriate teaching situations, students can learn knowledge, abilities and attitudes and help teachers. Literacy-oriented teaching literacy. The interview data of the interviewees is summarized as follows:

In the master program, the skills field curriculum emphasizes the basic technical skills of each subject. These skills are more specialized than the group's ability. They are the basic technical skills for undergraduate students. For example, business and management groups, paper

processing skills, Web design capabilities, programming skills, etc., are the capabilities of the National Data Processing Section students. Therefore, the business and management groups should put the above three skills into the skills field for the data processing department to ensure that the graduates of the Data Processing Section are Can acquire these three abilities (C2).

There are too few hours in the group's "participating internships", and there are too many credits in the department's 16 subjects. It is recommended to reduce (A1).

The store service 4 credits are too many, should be in the last semester, and other majors in the next semester. Currently pushing unmanned stores, the service content of the store has not kept pace with the times (B2). There is no need to allocate 4 credits for the service class, and 2 credits are recommended (C1).

There is no accounting practice skill field in the internship program. Accounting is a professional skill but there is no practical skill arrangement. In the classroom, the teacher does not have time for the student to actually practice, which leads to many obstacles to the student's learning effectiveness (A1).

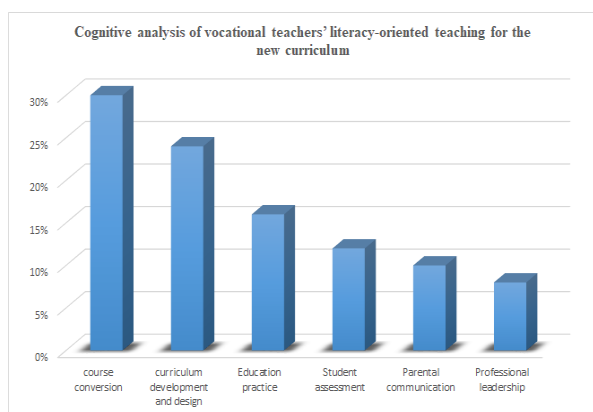


Fig. 1. Cognitive analysis of vocational teachers' literacy-oriented teaching for the new curriculum.

B. Vocational Teachers Face the Influence of 12 Years New National Curriculum on Teaching

Vocational teachers face the influence of literacy-oriented teaching on 12 years of national curriculum. (1) It is appropriate to adjust the accounting content of accounting and economics in the Department of Accounting; (2) The timing of the accounting department is insufficient. (3) There are too few "partial professional subjects" hours. (4) The content of the course needs to be updated. From the above, we can see that there are flexible learning courses every week in the middle stage, which can carry out cross-disciplinary integration topics, topics, topic exploration, community activities and skills, special needs fields and other courses. In the high school stage, you will reduce the number of compulsory credits, improve your elective credits, set up compulsory courses, explore multiple courses, or deepen your elective courses. It is hoped that each child will find a suitable learning path and method [16] [23]. The interview data of the interviewees is summarized as follows:

The student's learning path will be adjusted by the elevation of the examination or the university's examination path, reducing the proportion of students selected by a single

test, and hoping to pay more attention to the multi-performance of the learning process, so that students can find the right life track (C1).

There are too few "specialized subject subjects", and some subjects have no time to teach textbook content (A1) because they need to tutor and teach the content of the exam.

The Data Processing Section is different from other disciplines. It is not easy to develop due to the business management group for a long time. For the students of the Department of Capital Affairs, the entrance examinations still have more commercial subjects, and the proportion of accounting subjects is too high. The serious loss of students, accounting and economics are not required professional skills, should be replaced by elective (I2).

The number of the accounting department is insufficient. In the first-year part of the subject, students are required to take the "accounting affairs inspection" and "store service inspection" in the same semester, and the burden is large (A1).

C. Vocational Teachers Face the Literacy-Oriented Teaching of 12 Years New National Curriculum

The literacy-oriented teaching of the 12-year-old national curriculum requires the school to provide a response strategy. It is hoped that the rare class can compile textbooks, and the school-based subjects can independently choose electives, simplify the admissions pipeline and test subjects. It can be seen that after the implementation of the new curriculum in the future, there is a lack of validated textbook questions on the internships and professional subjects of the rare classes. It is recommended that the group-based central schools bring together rare class teachers with rich teaching experience to jointly compile relevant textbooks [24], [25]. The National Institute of Education of the Ministry of Education provides funding for textbook compilation and assists in publishing and reviewing related work to meet the needs of rare textbooks. By clarifying the spirit of the curriculum, teaching objectives, teaching implementation and teaching assessment, we will enhance the teaching effectiveness of teachers and adopt cooperative teaching methods to provide opportunities for students to cooperate with others. In terms of assessment, emphasis is placed on multi-evaluation to encourage students to develop multiple abilities [16]. The interview data of the interviewees is summarized as follows:

The total number of credits for technically advanced secondary schools, according to the group attribute, is 44 to 81 credits; schools can plan their own development according to their academic system, attributes or differences between classes and students (B2).

It is recommended that the curriculum be strengthened, the first grade will be strengthened, and the second grade will be strengthened. The third grade curriculum will still require more progression courses, so that students have better choices (T2).

It is recommended to simplify the admissions, methods, examination subjects and content. Under the system of higher education, students should prepare more subjects than high school students, and also participate in verification, special and practical assessments. Students are burdened and unwilling to learn (II).

The curriculum has been updated with the "Special Topic"

teaching guidelines to enable various groups to enhance the implementation quality of the "Special Implementation" course (A2).

Although the purpose of the actual evaluation is to replace the verification, so that the teaching can be standardized, as long as the final result of the evaluation will affect the performance of the promotion, it will eventually make its original spirit out of shape and become a mechanical operation. However, it is impossible to truly internalize students' learning (B1).

IV. CONCLUSION

A. Vocational Teacher's Cognitive Analysis of Literacy-Oriented Teaching in Response to the New Curriculum

After analyzing the qualitative data, it can be seen that the core literacy-oriented teaching is the "course conversion" (30%) and "curriculum development and design" for the vocational curriculum in response to the new curriculum (24%), "Education practice" (16%), "Student assessment" (12%), "Parental communication" (10%) and "Professional leadership" (8%). The "Educational Practice" refers to the belief of teachers in the use of teaching methods, supporting media and designing teaching materials. The "Course Development and Design" means teachers' belief in the ability to handle class routines and student order. The "Student Assessment" Refers to the belief of teachers in assessing students' learning achievements and their ability to interpret the results of evaluation [8] [26]. The "teacher communication" is the belief in assessing the ability of teachers to interact with parents and communicate teaching concepts. The "course transformation" points to teachers' participation in teaching improvement activities. The belief in the ability to engage in teaching reform, The "professional leadership" is the belief that teachers can change the social environment and the students' family background has an adverse effect on teaching [15] [23].

It can be seen from the above that the core literacy-oriented teaching is based on curriculum transformation, curriculum development and design and educational practice in response to the new curriculum in the professional curriculum. It can be seen that in the process of curriculum transformation in the face of the new curriculum, teachers have their knowledge of industrial experience, the use of off-campus resources, the adaptation of course materials, the design of industry-oriented curriculum skills, the teaching of industrial practice skills and their teaching evaluation. In response to curriculum transformation, teachers are an important reference in the integration of curriculum transformation, teacher thinking process, information organization and implementation of teaching programs [27] [28]. Therefore, by discussing the professionalism of teachers, in addition to understanding the results of teaching strategies, teachers' self-reflection, professional knowledge and richness of teachers are encouraged to enhance the interpretation and demand connotation of curriculum transformation in the process of industrial transformation and teaching experience.

B. In Terms of Vocational Teacher's Literacy-Oriented Teaching of 12-National Curriculum, the Teaching Needs of Teaching Specialization

Vocational teachers face the literacy-oriented teaching of 12- national curriculum. There is hope for the teaching needs of teaching. The content of the new curriculum is clear and clear, the new curriculum should be compatible with the current situation of teaching, and the curriculum of the skills field emphasizes the various subjects. Basic technical ability and course hours should consider factors such as the difficulty of the course. Teachers should fully identify the important value proposition of the unit when preparing lessons, and carry out the activities of related extension activities such as topic integration and cross-disciplinary courses. When teaching design, it is necessary to think about how the learning activities should be linked to the core literacy, unit goals and performance tasks of the field, and choose the appropriate learning focus to help students develop core literacy. In particular, "literacy orientation" is a student-centered approach to adapting to and coping with the diverse issues of the future change society. Therefore, schools must not only increase cross-disciplinary integration and teaching, but also pay more attention to students' multi-faceted learning. Performance, not just the traditional paper and pencil test [9] [22]. Therefore, the teacher's teaching and learning focus is not much, reasonable teaching hours and teaching content through intensive teaching design and arrangement. It can use less time to let students learn more knowledge concepts, and more importantly, the teacher's teaching can lead to active learning behaviors after class.

C. Vocational Teacher Faces 12-F New National Curriculum of Orientation-Oriented Teaching

It is an important factor to update the content of the course and to have too few professional subjects. The orientation-oriented teaching and the multi-elective courses test the ability of teachers. The key to the success of the new curriculum lies in the teachers. Teachers must be "transformed intellectuals", have independent thinking and critical ability, and then reflect on and change their teaching mode; have action and practice, and link knowledge in the teacher-student dialogue, society, culture, life and power, transforming social structure. Teachers should have the ability to link knowledge to life, recognize the process of knowledge construction, guide students to think independently, apply what they have learned, and develop new textbooks and teaching methods. In addition, the 108 syllabus adds a multi-choice course, so teachers must have the ability to cross-disciplinary and multi-disciplinary courses. It can be seen that the teachers' doubts mostly stem from the incomprehension of the new curriculum and the change of teaching inertia [11] [27]. As long as they can increase their energy through the study and workshops, most of the teachers can understand and gradually regain their teaching enthusiasm.

D. The Literacy-Oriented Teaching of the 12 Years of National Curriculum in Response to the Need for the School to Provide a Response Strategy

Vocational teachers need schools to provide strategies for coping with rare science and science textbooks, and to make

elective courses that can be independently selected according to the characteristics of the school, simplify the admissions pipeline and test subjects. Schools can consider the actual learning situation of students and flexibly adjust the combination of time, grade and class. In particular, subjects such as English and mathematics, which have a large gap in learning, are grouped according to different degrees. They are able to teach students in accordance with their aptitude. In response to the new curriculum, the mentality needs to be adjusted from the teachers, students, educational workers. But for the vocational teachers, the change is definitely challenging [20] [28]. It is important to meet the challenge, the biggest difficulty is not the technical side, but the teacher's mentality.

V. IMPLICATION

The vocational education emphasizes pragmatic application to cultivate students' professional technical ability and development potential. The core professional literacy of teachers includes professional knowledge, professional practice and professional attitude. Responding to the implementation of the 12-nation new curriculum to enhance the teacher's leadership-oriented teaching ability, through the in-service literacy-oriented teaching design and assessment methods and content activities, to effectively develop the professional-oriented teaching professionalization ability of teachers.

CONFLICT OF INTEREST

Please declare whether or not the submitted work was carried out with a conflict of interest. If yes, please state any personal, professional or financial relationships that could potentially be construed as a conflict of interest. If no, please add "The authors declare no conflict of interest".

AUTHOR CONTRIBUTIONS

1 and 2 conducted the research and wrote the paper; 3 and 4 analyzed the data; all authors had approved the final version.

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