

Research and Improvement Measures on the Mechanism of Transfer and Transformation of Teaching Knowledge based on SECI Model

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Keywords: Knowledge Transformation, Practical Teaching, Implicit Knowledge, Mechanism Analysis, SECI Model.

Abstract: Under the background of industrial upgrading, practical training teaching, as the cultivation path of students' skills improvement, is an important link in the transferring of skilled person needed by the society in secondary vocational colleges, which determines the matching degree of skilled talents and jobs. To a certain extent, the teaching effect of practical training determines the "credibility, availability and invasiveness" of the cultivated talents in the actual work. Based on the theoretical model of knowledge transformation SECI put forward by Nonaka and Takeuchi, this paper analyzes the mechanism of the transfer and transformation of the knowledge of practical training in secondary vocational training, which is divided into the transmission, transformation, combination and innovation of explicit knowledge. This paper analyzes the transmission and transformation of hidden knowledge from the macro, middle and micro levels of vocational training teaching. Based on its model connotation and transformation mechanism, the paper puts forward three key measures to develop teacher learning community, school-enterprise cooperative industrial college, and set up curriculum process evaluation to promote the transformation rate of the transfer and transformation of practical training teaching knowledge, and to effectively strengthen the effectiveness of practical training teaching and the matching between the training of talents and social needs, with a view to helping the research of practical training teaching.

1. Introduction

In 2014, the Decision of the State Council on Accelerating the Development of Modern Vocational Education proposed to strengthen the integration of teaching, learning and practical training in education and teaching activities. Practical training teaching is a necessary link for secondary vocational training and enterprise position to match talents. Under the guidance of "learning by doing" education principle, students deepen theory, learning skills. To a certain extent, the effect of practical training determines the "credibility, availability and invasiveness" of the cultivated talents in the actual work.

As with the actual work process, the skills and technical proficiency and innovative practical knowledge of long-term work are all transmitted, transformed, combined and innovated in the hidden knowledge spiral cycle. But what is different from the actual work is that the skills training in secondary vocational colleges is the extraction of the work situation, and the knowledge transfer and transformation are more basic and typical.

Most of the existing research on practical training teaching is to follow the social and economic development of the practical training system to explore, teaching methods innovation. There is little theoretical discussion of the teaching interactive process knowledge transformation mechanism. This can not provide targeted suggestions for the optimization of the internal transformation of theoretical teaching and practical teaching in practical teaching, which in the long run can easily form the disconnect between theory and practice, and induce the gap of transformation of knowledge, thus affecting the effectiveness of practical teaching and the matching between talent

training and social needs.

2. The Connotation of Knowledge Transmission and Transformation and SECI Model

2.1. The Connotation of the Transmission and Transformation of Knowledge

Knowledge transfer and transformation belong to the category of knowledge management, and it is a description of the interactive process of explicit knowledge and implicit knowledge. As early as 1985, Polany classified knowledge as explicit and implicit.^[1]

Explicit knowledge refers to a kind of knowledge that can be expressed through media such as language symbols and chart formulas, and implicit knowledge refers to a kind of knowledge hidden in practical processes or human activities that is difficult to express systematically in the form of language, such as professionalism, personal perception, work experience, etc. Explicit and implicit knowledge depends on each other and builds a knowledge system together.^[1]

In life experience, due to the limitations of language expression, we often feel that we understand more than can say, because a person's the smooth expression of explicit knowledge is often rooted in the sufficient reserve of implicit knowledge. The degree of transformation of the two can reflect to a certain extent a person's hidden knowledge network system.

2.2. Overview of SECI Model Principles

SECI theory divides the transfer and transformation of knowledge into four links: socialization, externalization, connecting and internalization, corresponding to four fields. This represents that the acquisition and transformation of individual knowledge is never stopped. Under this model, integrate the formation of individual knowledge system. Figure 1 is a diagram of the SECI model.

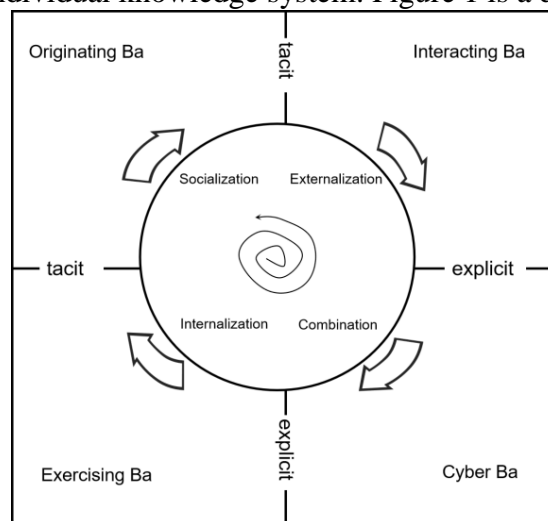


Figure 1 SECI model.

Socialization refers to the mutual transformation of implicit knowledge. The acquirer often does not obtain knowledge through words, but through imitation and practice and other personal experience to obtain other people's hidden knowledge, which is often the starting point of learning motivation.

Externalization refers to the process of transitioning from implicit knowledge to explicit knowledge, extracting the expression of the hidden knowledge accumulated by oneself through speech and so on. Whether the expression of implicit knowledge can be clearly accepted by others is an important criterion to judge the integrity of a person's apparent knowledge system.

The combination is the mutual transformation of explicit knowledge. With the help of easily observable symbols and languages produced by various media, it processes and reorganizes explicit knowledge for secondary promotion and diffusion.

Internalization is the process of the transformation of explicit knowledge into implicit knowledge, and it is the process of disassembling and digesting explicit knowledge into the individual's

apparent knowledge system, achieving the internalization sublimation of knowledge. It is usually done through practice and practical operation. Therefore, from the perspective of SECI model, proper practical teaching will be very helpful to the internalization of the knowledge learned.^[2-5]

3. Based on the SECI Model, the Mechanism Analysis of the Transfer and Transformation of Vocational Training Teaching Knowledge

Knowledge transformation exists in various macro, meso and micro links as breath in practical training teaching, and is constantly transformed in the cycle of size and reciprocity. At the macro level of interactive teaching of practical teaching courses, teachers systematically process the explicit knowledge of curriculum content to students through language logic, information technology and other "word-of-words" methods, and at the same time promote students to cultivate and understand professional emotion and thinking, professional ethics and literacy, artisan consciousness and spirit of such hidden knowledge. Students at this macro level choose the knowledge according to their own needs. The hidden knowledge distributed by teachers is incorporated into their own explicit knowledge system.

At the mid-level level of exchange and cooperation of practical teaching courses, teachers and students externalize the hidden knowledge of individualization and differentiation into explicit knowledge through discussion, reflection and other forms, and constantly improve the knowledge network in themselves to achieve the spiral of knowledge. At the micro level of individual hands-on practice in practical teaching courses, both teachers and students will continue to apply and verify such knowledge in practice on the basis of mastering explicit knowledge, internalize it into the hidden knowledge that can be extracted skillfully in the individual manifest knowledge system, and think about innovation in the process, acquire new implicit knowledge, and achieve knowledge skill renewal and upgrading.

4. Key Measures to Promote the Transfer and Transformation of Practical Teaching Knowledge

4.1. Develop Teacher Learning Community and Stimulate Hidden Knowledge Discovering

Teachers and students are two important subjects in the practical training curriculum. The transformation of teachers' personal knowledge will have a great impact on teaching results. However, the rate of internalization absorption varies, and there is a saturation. In the individual level to break this saturation, often need to be quantified to cause qualitative change.

But faster realization of the compression and deepening of teachers' knowledge can be through the establishment of teachers learning community collision inspiration, through discussion and reflection, to stimulate teachers to tap the hidden knowledge growth point of practical training projects. According to the different objects of teacher's main connection, the teacher learning community can be divided into "enterprise-teacher", "teacher-teacher", "textbook-teacher".^[6]

As the source of practical experience, the enterprise can provide teachers with typical work tasks and the intuitive sharing of master's exquisite skills. The immersive research of enterprises under the appropriate time of teachers can help to create their own hidden knowledge in the socialization stage. As knowledge similar groups, teachers and teachers can cooperate to extract knowledge from typical work projects, so as to better achieve knowledge sharing in the externalization stage.

As the carrier of explicit knowledge, as teachers go deep into enterprises to get the hidden practice knowledge, the teaching material can be reorganized. The practical experience is fed back into the teaching material, with live teaching materials, in the link stage to achieve the integration of hidden knowledge. Knowledge transformation will enable teachers internalize the theoretical points and practical experience of practical training when entering the classroom. So teacher will not echo what the books say and the class will have a new-looking.

4.2. School-enterprise Cooperative Industrial College Reproduce the Real Field of Work

The Institute of Industry is a new mode of in-depth cooperation between schools and enterprises,

and an important platform environment to promote the transfer and transformation of practical teaching knowledge. On the platform of the Institute of Industry, it can perfect the deficiency of the traditional secondary vocational school training teaching from the work site, and help students to build a complete knowledge system.^[7]

First of all, whether it is the establishment of the school industrial college or the enterprise industrial college is a perfect channel for the penetration of entrepreneurial spirit. In this implicit environment, students learn skills turning from the school to learn practical training to the industrial environment. This environment change will promote the role of students psychological positioning change, enhance students' professional adaptability, more easy to absorb professionalism, spiritual quality of implicit knowledge.

Secondly, the on-site layout of the Institute of Technology can directly handle the real environment of the work site, eliminate the backward and meaningless operation of the practical training courses from the aspect of resource allocation, and optimize the knowledge structure of students. Butting real work scenario, learning is used, can accurately locate talent training program for the industry and target job groups, so that students in the real working environment can acquire technical skills. This kind of environmental memory will make students get job quickly.

4.3. Build the Course Process Evaluation, Timely Feedback and Reflection

At present, the evaluation of practical training courses in secondary vocational colleges often points to the results of practical training, neglects the process evaluation, pays attention only to the presentation of explicit knowledge in writing, and neglects the dissemination of implicit knowledge in the operation process and practice results.^[8]

Complementary building effectiveness course process evaluation can make the analysis index diversified, can evaluate the results of "output", can also evaluate the students' learning "input", but also help the student group know their initial ability and existing ability gap , help students individually critically reflect, and further improve the individual's apparent knowledge system.

5. Conclusion

In essence, the teaching of secondary vocational training is the transmission, transformation, combination and innovation of hidden knowledge in the spiral of the macro, middle and micro levels of the curriculum.

Based on the SECI theoretical model, this paper analyzes the mechanism of the transfer and transformation of teaching knowledge in secondary vocational training, and puts forward three key measures to develop teacher learning community, school-enterprise cooperative industrial college and set up course process evaluation to promote the transfer and transformation of practical teaching knowledge, thus helping to optimize the internal transformation and optimization of theoretical teaching and practical teaching in practical training teaching, and make up for the disconnect between theory and practice.

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