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Professional learning of vocational teachers in the context of work placement

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Chapter 1

General introduction



1.1 Introduction

The aim of vocational education is to develop graduates' occupational competence. Aside from workplace learning, school education is also an important source for vocational students to acquire occupational knowledge and skills. In particular, vocational teachers play a crucial role in ensuring the learning achievements of their students. As contemporary industry and society change rapidly, vocational teachers are always expected to seize opportunities to keep updated on their occupational expertise (Andersson & Köpsén, 2019; Lloyd & Payne, 2012; Tyler & Dymock, 2019). To support teachers in this, a series of activities have been proposed, such as stimulating teachers to work part-time in industry, attend industry conferences, and get involved with a professional body (Broad, 2016; Sirk, Liivik, & Loogma, 2016). Among these activities, work placement has become popular and has been implemented in many countries, such as Australia, Sweden, and China, using different labels, like industry release in Australia and extended work placement in France (Lloyd & Payne, 2012; Zaid & Champy-Remoussenard, 2015). Work placement refers to a continuing professional development programme in which vocational teachers retain their occupational expertise through participating in 'the vocational, work-life community of practice of their teaching subject' (Andersson & Köpsén, 2015, p.2). In 2016, the Ministry of Education of the People's Republic of China released a national regulation for work placement, in which all in-service vocational teachers in China are required to attend this programme for at least six months within each five-year period. With the guidance of this regulation, almost all vocational teachers in China have been engaged in work placement.

Although work placement has been implemented nationwide in China, there are a number of obstacles for different actors that hinder the effectiveness of this programme. First, for some of teachers, the unfamiliar surroundings, being different from the school workplace, can result in tensions with regard to their identity as vocational teachers. As a result, teachers may feel confused about how they can be able to learn in work placement and how this learning can support their teaching in school. For example, Zhang and Fang (2016) investigated 604 Chinese vocational teachers from 13 cities and found that in work placement more than 40% of the teachers stood aside as bystanders. Second, for school leaders, although they may have realised that work placement can be beneficial for improving vocational teachers' occupational competence, they are not so clear about how to support teachers' learning

during such programme and stimulate them to apply what they have learnt afterwards in school. For example, Zhang and Song (2021) revealed that vocational schools did not develop a long-term plan for vocational teachers' learning in work placement and also did not set up a department for coordinating work placement programmes. Third, programme designers or industry companies involved in organising work placement, may have no idea of what a desired work placement looks like. This can lead to a lack of scientific management for work placement and a discrepancy with regard to providing learning content that meets teachers' learning needs (Hu, 2020).

In order to gain a better understanding of vocational teachers' learning process in work placement, in the past decade, an increasing amount of research has concerned work placement as one of the most effective professional development programmes for vocational teachers (Andersson & Köpsén, 2015). Some external barriers or facilitators for vocational teachers' participation in this programme have been identified, such as increasing workload and policy stimulation (Lloyd & Payne, 2012; Schmidt, 2019). However, how teachers' learning takes place and how their learning supports their teaching in school is still unclear. In other words, an overview of vocational teachers' professional learning in this programme is still missing (Zaid & Champy-Remoussenard, 2015). Therefore, this dissertation focuses on vocational teachers' professional learning in the context of work placement, which includes teachers' learning motivation, goals, activities, and outcomes about cognition and behaviour. The findings are anticipated to deepen our insights into vocational teachers' professional learning in work placement and to provide useful practical suggestions for developing this programme.

1.2 Context of this dissertation

1.2.1 The system of Chinese vocational education

The Chinese vocational education system consists of both secondary vocational education and higher vocational education, which correspond to level 3 and 5/6/7 with regard to the International Standard Classification of Education (ISCED 2011), respectively. Secondary vocational education mostly contains three years and students usually are aged from 16 years old. And higher vocational education usually comprises a three-year associate degree or a four-year bachelor, which are implemented in vocational colleges and universities for applied science. In contrast

with higher vocational education, secondary vocational education plays a more basic role within the vocational education system. It takes a high responsibility for inducing fresh students from school into workplace occasions. As shown in Figure 1.1, students after graduating from lower secondary school can choose either general upper secondary education or secondary vocational education, and this mainly depends on their scores on the upper secondary school entrance examination. The proportion of students flowing into these two types of education is almost the same. Students after secondary vocational education usually try to find a job or follow higher vocational education.

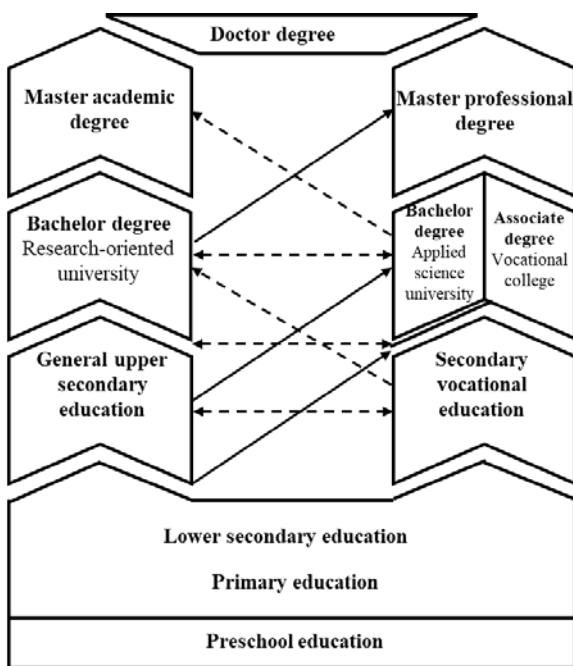


Figure 1.1 An overview of Chinese education system

Adapted from 'Modern vocational education system construction plan' (2014). p.6

In general, Chinese vocational education is typical school-based. Although workplace learning has been integrated into school education recently, it is usually planned in the last year. Thus, school-based learning is still the main way for vocational students to obtain occupational knowledge and skills. The curriculums in school are normally created or designed as syntheses of theoretical and practical modules in which

vocational teachers have to fulfil different roles simultaneously, such as those of lecturer, mentor, and career instructor. In this context, the concept of ‘Dual qualified teachers’ has been popular in Chinese vocational education, which means that vocational teachers are supposed to keep dual competencies and identities pertaining to ‘teaching’ and ‘work’ (The State Council of the People's Republic of China, 2005). Therefore, how to promote vocational teachers’ dual competence has become important for improving the quality of vocational education. Compared to pedagogical knowledge and skills, occupational knowledge and skills are more difficult to keep up to date. This is because the former is easier to be acquired and updated based on teachers’ teaching work and school-based learning activities, while the latter is usually situated in the world of work. As Andersson and Köpsén (2018) stated, ‘The conditions VET teachers face as they seek to develop industry currency are complex as current vocational knowledge is situated in specific work-life practices separated from the practice of school’ (p.318).

1.2.2 Work placement in Chinese vocational education

Policy In 1996, the supreme law of Chinese vocational education named ‘The Law on Vocational Education of the People's Republic of China’ claimed that industrial companies are supposed to provide learning opportunities for vocational teachers. This is the first document that referred to work placement. Then, in 2004, seven central departments including the Ministry of Education of the People's Republic of China jointly published ‘Some suggestions on developing work on vocational education’, which addressed the importance of engaging in industry workplace for vocational teachers and firstly initiated a general regulation for conducting work placement. In 2006, the Ministry of Education of the People's Republic of China released ‘Some suggestions on the implementation of the regulation for work placement of secondary vocational teachers’ which indicated that novice vocational teachers have to undertake work placement for at least three months before teaching. After that, in 2011, the Ministry of Education of the People's Republic of China published ‘Some suggestions on promoting vocational teachers’ education and training’, in which it pointed out that vocational teachers have to conduct work placement for at least two months within every two years. This regulation was adapted into ‘six months within each five-year period’ in the ‘Regulation for work placement of vocational teachers’ which was published in 2016 by seven central departments and

‘one month annually’ in ‘The implementation plan of national vocational education reform’ which was published in 2019 by the State Council of the People’s Republic of China. Recently, in 2021, in the document ‘The action for developing the competence of vocational teachers’ enacted by the Ministry of Education of the People's Republic of China, it was noted that the current places and settings for national work placement need to be enriched and vocational teachers ought to attend work placement for at least one month annually.

Implementation With the guidance of the Chinese government, work placement has been implemented nationwide. Mostly vocational teachers undertake their work placement during summer or winter breaks, which is due to the lack of teachers who can take over their teaching work. Vocational teachers usually have three ways to look for an appropriate company or association for work placement. First, they could seek by themselves through social media or their network, such as going to friends’ companies. Second, they could agree to the arrangement of their school, which often has some cooperation with a few companies. Third, they could also register in national or municipal projects of work placement, which can provide them with company options, such as ‘National projects of work placement for vocational teachers’ and ‘Shanghai work placement project of secondary vocational teachers’. Although vocational teachers are not able to get salaries from companies, they can get subsidies for transportation or meals from their school or the government. Although vocational teachers are assigned to a certain post, most of them cannot be fully qualified because of their limited occupational experience. During work placement, vocational teachers are usually faced with various opportunities to learn, and these learning opportunities can be quite different within and across companies and occupations.

1.3 Conceptual framework

To shape vocational teachers’ professional learning in the context of work placement, we applied four types of theories which concerned different research questions. Concretely, firstly, a motivational theory called ‘expectancy-value theory’ (Eccles et al., 1983) was used as a framework to understand vocational teachers’ motivational beliefs for work placement. Secondly, the prior models of workplace learning activities were employed to characterise vocational teachers’ learning approaches in work placement. Thirdly, a model of teacher learning outcomes from Harland and

Kinder (2014) was utilised to investigate vocational teachers learning outcomes from work placement. Fourthly, the previous frameworks on the transfer of learning were drawn upon to probe into factors predicting vocational teachers' learning transfer from work placement to school. We will explain each of them below.

1.3.1 Teacher learning motivation: Expectancy-value theory

Apart from external factors, teachers' motivation for professional learning is employed as another vital predictor of their engagement or achievements. Among all kinds of theoretical perspectives, the expectancy-value theory has been widely adopted to outline the motivational beliefs of adults, including teachers. It indicates that an individual's choice, persistence, and achievement can be understood by a person's expectancy for success and task value. The expectancy component addresses how well individuals believe they can do on upcoming tasks, while the task value component means how valuable they consider those tasks to be.

Specifically, the expectancy for success can be defined as a personal or efficacy expectation. Eccles et al. (1983) showed in their model that an individual's perception of competence is highly influenced by his or her expectancy belief. Furthermore, a substantial amount of literature does not distinguish between ability belief, i.e., appraisal of one's ability to master a task and expectancy for success. Therefore, more and more scholars have utilised ability beliefs (self-efficacy) to represent the expectancy for success. For example, Bergey, Parrila, and Deacon (2018) measured students' academic self-efficacy as an expectancy variable. Task value can be defined as how a task meets individuals' needs. Eccles et al. (1983) proposed multiple components, including attainment value, intrinsic value, utility value and cost. Attainment value means the importance of doing well on a task, intrinsic value refers to the enjoyment gained from doing a task, utility value refers to the usefulness of doing a task, and cost refers to what the individual gives up to do a task. In recent years, the cost was preferred to be separated from task value by researchers (Jiang, Rosenzweig, & Gaspard, 2018; Kosovich et al., 2015).

1.3.2 Workplace learning activities

Work placement entails a special professional development programme in which vocational teachers' learning deviates from both teachers' learning in school workplace and professionals' learning in an industrial workplace. Still, theoretical

models and empirical findings from teachers' learning in the school workplace and professionals' learning in an industrial workplace could provide useful insights to understand vocational teachers' learning in work placement.

In general, teachers' professional learning can be formal and informal, and it can occur in different contexts. Concretely, formal learning often takes the form of professional development activities that are organised by the school, by scholars, or by the government and can be organised both inside and outside school. Informal learning mainly occurs within the school workplace. Compared to formal learning, informal learning is more connected to teachers' routine work and is more commonly experienced as engaging. Meirink, Meijer, and Verloop (2007) reviewed previous studies and generated five categories of teachers' learning activities in the school workplace: 1) learning from doing, 2) learning from experimenting, 3) learning from reflecting, 4) learning from others with interaction, and 5) learning from others without interaction. Similarly, learning activities carried out by professionals as learners within an industrial workplace can be also formal and informal. Formal learning within an industrial workplace is usually situated in a professional training setting, provided by employers. Informal learning within industrial workplaces can be considered as work-based learning. Nikolova et al. (2014) classified work-based learning activities into four categories, i.e., learning through reflection, learning through experimentation, learning from colleagues, and learning from supervisors.

1.3.3 Teacher learning outcomes: A model of learning outcomes

Learning outcomes of teachers refer to the changes in their cognition or behaviour which result from participating in various kinds of learning activities (Hoekstra et al., 2009). A well-known assumption is that teachers' changes in behaviour often follow changes in their cognition (Harland & Kinder, 2014; Opfer, 2016). The model of Harland and Kinder (2014) was constructed in the context of continuing professional development for teachers, or in-service education and training settings (INSET). Harland and Kinder (2014) distinguish nine types of learning outcomes: (a) material and provisionary outcomes—physical resources teachers get from INSET; (b) informational outcomes—facts and news relevant to the curriculum, management and implications for practice; (c) new awareness—teachers' perceptual or conceptual shifts; (d) value congruence outcomes—teachers' personalised perspectives which are in line with INSET designers' views of 'good practice'; (e) affective outcomes—

emotional changes during INSET situation; (f) motivational and attitudinal outcomes—teachers’ motivation to apply the ideas obtained from INSET; (g) knowledge and skills—teachers’ deeper understanding related to teaching content; (h) institutional outcomes—collective effect on teacher groups; and (i) impact on practice—intentional changes in practice. Harland and Kinder (2014) also proposed a hierarchy among these types of outcomes, as shown in Table 1.1. In their model, the impact on practice is deemed the ultimate outcome with respect to behaviour, which can be obtained directly or through indirect paths influenced by the other outcomes.

Table 1.1 A sequence of INSET outcomes.

INSET input			
3rd order	Provisionary	Information	New awareness
2nd order	Motivation	Affective	Institutional
1st order	Value congruence		Knowledge and skills
Impact on practice			

1.3.4 Transfer of learning

Transfer of learning is defined as ‘the effective (generalisation) and continuing (maintenance) application in the job environment of the skills, knowledge and conceptions gained in a staff development context’ (De Rijdt et al., 2013, p.49). A few influencing factors of learning transfer have been identified in previous work. For instance, Baldwin and Ford (1988) divided the factors affecting the transfer of training into three categories: 1) training-input factors, including trainee characteristics, training design, and work environment; 2) training-output factors, consisting of learning and retention; 3) conditions of transfer. Lim and Johnson (2002) identified two main dimensions: 1) individual characteristics, which include motivation toward transfer and level of technical competence; 2) work environment, which can be classified into the individual level and organisational level work environment. Subedi (2004) conclusively showed that the factors influencing transfer can be classified as trainee characteristics, training design and delivery characteristics, and organisational or workplace environment characteristics.

In the field of education, De Rijdt et al. (2013) identified many influencing and moderating factors in the transfer of learning via literature review. The influencing

variables are divided into three constructs, including learner characteristics, intervention design, and work environment, which were in line with most previous literature. This model could be a general framework to understand teachers' transfer of learning.

1.4 Outline of this Dissertation

This dissertation aims to provide insight into vocational teachers' professional learning in work placement, which consists of learning motivation, activities, goals, outcomes, and factors predicting the transfer of learning. As shown in Table 1.2, to better understand vocational teachers' learning in work placement, the first study focuses on investigating vocational teachers' learning activities and outcomes in all various contexts with a systematic literature review (Chapter 2). A total of 54 related studies published from 2010 to 2020 were analysed. The learning context was analysed to distinguish vocational teachers' learning activities, while the model of learning outcomes developed by Harland and Kinder (2014) was used to frame vocational teachers' learning outcomes.

After a general exploration of vocational teachers' professional learning, we moved our target to their professional learning in a specific programme referring to work placement. Since vocational teachers' learning process in work placement has been under-investigated, we believe that a deep and comprehensive exploration is needed. Therefore, the second study (Chapter 3) is aimed at exploring the relationship between vocational teachers' motivational beliefs and their engagement in the context of work placement. The teaching experience was also examined as a moderating factor. A large-scale sample of 456 secondary vocational teachers answered the questionnaire.

In the third study (Chapter 4), vocational teachers' learning activities, goals, and outcomes in work placement are probed from a qualitative perspective. We invited 27 secondary vocational teachers to participate in our interview after completing their work placement. In this interview, they were asked to talk about their learning experience during work placement and their intention on how to make use of that learning experience.

To further understand vocational teachers' benefits from work placement, a longitudinal observation seemed necessary. We thus investigated the impact of work placement on vocational teachers' teaching and other practices in school within a longer period (Study4, Chapter 5). Of the 27 participants in the third study, 18

participated in the following interview after completing work placement for around a semester. We strived to ask them to report the real changes in their school practice resulting from work placement for the past semester. A part of the data linked to vocational teachers' intentions to change from Chapter 4 was integrated into this study, which could reveal more insights into both vocational teachers' intentional and actual changes in their school practice after work placement. Moreover, the factors influencing vocational teachers' changes in their school practice were also captured based on vocational teachers' experience. Although vocational teachers' changes and influencing factors were captured, they were obtained from a small-scale group.

To provide further evidence, we employed a quantitative way to examine vocational teachers' changes in school practice and their predicting factors which were generated from the fourth study (Study5, Chapter 6). Data was collected using a questionnaire which was answered by 372 participants.

Finally, in chapter 7, we report the main conclusions from each study, and then we discuss the general findings and the implications of this dissertation.

Table 1.2 Schematic overview of the studies

Chapter	Research focus	Research type	Measurement instruments	Participants	Time of data collection
2	Vocational teachers' professional learning activities and outcomes in all various of contexts	Systematic literature review	N/A	N/A	January 2010-August 2021
3	Relationship between vocational teachers' motivational beliefs and engagement in work placement	Quantitative	Questionnaire	426 secondary vocational teachers	February-March 2020
4	Vocational teachers' learning activities, goals, and outcomes in work placement	Qualitative	Interview Digital profile	27 secondary vocational teachers	August-September 2020
5	Impact of work placement on vocational teachers' school practice and factors that influence its impact	Longitudinal ; Qualitative	Interview	18 secondary vocational teachers	January 2021
6	Factors predicting vocational teachers' transfer of learning from work placement to school	Quantitative	Questionnaire	372 secondary vocational teachers	March 2022