



Universiteit  
Leiden  
The Netherlands

## Professional learning of vocational teachers in the context of work placement

Zhou, N.

### Citation

Zhou, N. (2023, March 1). *Professional learning of vocational teachers in the context of work placement*. ICLON PhD Dissertation Series. Retrieved from <https://hdl.handle.net/1887/3566841>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3566841>

**Note:** To cite this publication please use the final published version (if applicable).

# Appendices



**Appendix A. Studies coded by learning activities and outcomes (Chapter2)**

|                                | Learning activities                            |                                               |                                    | Learning outcomes          |                                        |                    |                  |                                      |                        |               |                  |
|--------------------------------|------------------------------------------------|-----------------------------------------------|------------------------------------|----------------------------|----------------------------------------|--------------------|------------------|--------------------------------------|------------------------|---------------|------------------|
|                                | Pre-defined professional development programme | Self-directed/ initiated activities in school | Collaborative activities in school | Industry -based activities | Knowledge Teaching and skills practice | Affective outcomes | Value congruence | Motivational and attitudinal beliefs | Institutional outcomes | New awareness | Student outcomes |
| 1.Alhanachi et al. (2021)      |                                                |                                               | +                                  |                            | +                                      | +/-                | +                |                                      |                        | +             |                  |
| 2.Andersson et al. (2018)      | +                                              | +                                             |                                    | +                          | +                                      | +                  |                  |                                      | +                      |               |                  |
| 3.Andersson and Köpsén (2015)  | +                                              |                                               |                                    | +                          |                                        |                    |                  |                                      |                        |               |                  |
| 4.Andersson and Köpsén (2018)  | +                                              | +                                             |                                    | +                          | +                                      | +                  |                  |                                      | +                      |               |                  |
| 5.Andersson and Köpsén (2019)  |                                                |                                               |                                    | +                          | +                                      | +                  |                  | +                                    | +                      |               | +                |
| 6.Bound (2011)                 | +                                              |                                               |                                    |                            |                                        |                    | +                | +                                    |                        |               |                  |
| 7.Bouwman et al. (2019)        | +                                              |                                               | +                                  |                            |                                        |                    |                  |                                      |                        |               |                  |
| 8.Broad (2016)                 | +                                              |                                               | +                                  | +                          | +                                      | +                  | 0                |                                      | +                      |               |                  |
| 9.Bükkí and Fehérvári (2021)   |                                                |                                               | +                                  |                            |                                        |                    |                  |                                      |                        |               |                  |
| 10.Castano-Muñoz et al. (2018) | +                                              |                                               |                                    |                            |                                        |                    |                  |                                      |                        |               |                  |
| 11.Chatigny et al. (2012)      | +                                              | +                                             |                                    | +                          |                                        | +                  |                  |                                      |                        |               |                  |
| 12.Cochrane and Narayan (2011) | +                                              |                                               |                                    |                            | +                                      | +                  | +                |                                      |                        |               |                  |
| 13.Csikós et al. (2018)        | +                                              | +                                             | +                                  |                            |                                        |                    |                  |                                      |                        |               |                  |
| 14.De Jong et al. (2021)       |                                                |                                               | +                                  |                            | +                                      | +                  |                  |                                      |                        |               |                  |



(Continued)

|                                                            | Learning activities                            |                                               |                                    | Learning outcomes          |                      |                   |                    |                  |
|------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|------------------------------------|----------------------------|----------------------|-------------------|--------------------|------------------|
|                                                            | Pre-defined professional development programme | Self-directed/ initiated activities in school | Collaborative activities in school | Industry -based activities | Knowledge and skills | Teaching practice | Affective outcomes | Value congruence |
| 28.Oude Groote Beverborg, Slegers, Endedijk, et al. (2015) |                                                | +                                             |                                    |                            |                      |                   |                    | -                |
| 29.Oude Groote Beverborg et al. (2020)                     |                                                |                                               | +                                  |                            |                      |                   |                    | +                |
| 30.Runhaar et al. (2010)                                   |                                                | +                                             | +                                  |                            |                      |                   |                    |                  |
| 31.Runhaar et al. (2014)                                   |                                                | +                                             | +                                  |                            |                      |                   |                    | +                |
| 32.Sandal (2021)                                           | +                                              |                                               |                                    |                            | +                    | +                 | +                  | +                |
| 33.Sandford et al. (2011)                                  |                                                | +                                             | +                                  |                            |                      |                   |                    |                  |
| 34.Saunders (2012)                                         | +                                              | +                                             |                                    |                            |                      | +                 | +                  |                  |
| 35.Saunders (2013)                                         | +                                              | +                                             | +                                  |                            |                      | +                 | +                  |                  |
| 36.Schaap and De Bruijn (2018)                             |                                                |                                               | +                                  |                            |                      | +                 |                    | +/-              |
| 37.Schmidt (2019)                                          |                                                |                                               |                                    | +                          |                      |                   |                    |                  |
| 38.Sirk et al. (2016)                                      | +                                              | +                                             | +                                  | +                          |                      |                   |                    |                  |
| 39.Smets and Struyven (2020)                               | +                                              |                                               |                                    |                            |                      | +                 | +                  | +                |
| 40.Sumaryanta et al. (2019)                                | +                                              |                                               |                                    |                            | +                    |                   |                    |                  |

(Continued)

|                                 | Learning activities                            |                                               |                                             | Learning outcomes    |                   |                    |                  |                                      |                        |               |                  |   |
|---------------------------------|------------------------------------------------|-----------------------------------------------|---------------------------------------------|----------------------|-------------------|--------------------|------------------|--------------------------------------|------------------------|---------------|------------------|---|
|                                 | Pre-defined professional development programme | Self-directed/ initiated activities in school | Collaborative Industry activities in school | Knowledge and skills | Teaching practice | Affective outcomes | Value congruence | Motivational and attitudinal beliefs | Institutional outcomes | New awareness | Student outcomes |   |
| 41. Tigelaar and Sins (2020)    | +                                              |                                               |                                             | 0                    |                   |                    |                  |                                      |                        |               |                  |   |
| 42. Vangrieken et al. (2016)    |                                                |                                               | +                                           |                      |                   |                    |                  |                                      | +                      |               |                  |   |
| 43. Verberg et al. (2013)       | +                                              |                                               |                                             | +                    | +                 | +                  |                  |                                      |                        | +             | +                |   |
| 44. Verberg et al. (2015)       | +                                              |                                               |                                             |                      |                   |                    |                  |                                      |                        | +             |                  |   |
| 45. Virkkula and Nissilä (2014) |                                                |                                               |                                             | +                    | +                 |                    |                  | +                                    | +                      |               |                  |   |
| 46. Voerman et al. (2015)       | +                                              |                                               |                                             |                      | +                 |                    |                  |                                      |                        |               |                  |   |
| 47. Warwas and Helm (2018)      |                                                |                                               | +                                           |                      | +                 |                    |                  |                                      |                        |               |                  |   |
| 48. Watzek and Mulder (2019)    |                                                |                                               | +                                           |                      |                   |                    |                  |                                      |                        |               |                  |   |
| 49. Widmann and Mulder (2020)   |                                                |                                               | +                                           |                      |                   |                    |                  |                                      | +                      |               |                  |   |
| 50. Wijnia et al. (2016)        |                                                |                                               | +                                           |                      | +                 |                    |                  |                                      | +                      |               |                  |   |
| 51. Winberg and Pallitt (2016)  | +                                              |                                               |                                             |                      | +                 |                    | +                |                                      |                        |               |                  |   |
| 52. Winters et al. (2012)       | +                                              |                                               |                                             |                      | +                 |                    |                  |                                      |                        |               |                  |   |
| 53. Zeggelaar et al. (2018)     | +                                              |                                               |                                             | 0                    | +                 | +                  |                  |                                      |                        |               |                  |   |
| 54. Zeggelaar et al. (2020)     | +                                              |                                               |                                             | 0                    |                   | +                  |                  |                                      |                        |               |                  |   |
| Totals                          | 32                                             | 19                                            | 26                                          | 12                   | 15                | 25                 | 9                | 9                                    | 5                      | 13            | 5                | 3 |

## Appendix B: Questionnaire (Chapter 3)

Dear participants,

The aim of work placement is keeping up-to-date with your vocational knowledge and skills. In order to improve the effectiveness of work placement and study how vocational teachers' can be supported in work placement, ICLON Leiden University and CDIBB Tongji University are conducting a research project.

This questionnaire is part of the research project, which asks your perceptions of motivation and engagement toward work placement. It is expected that the questionnaire will take 10-15 minutes to complete. Your input is very valuable to us as a research team and can contribute to future work placement of vocational teachers.

Your participation in this research is voluntary and you may also withdraw consent at any time. The information provided will be used solely for the purpose of this research project. The results of the questionnaire will be treated confidential and results will always be made anonymous when reported. The data will be kept securely in Leiden University. If you have any questions or suggestions, feel free to send e-mail to this address: [n.zhou@iclon.leidenuniv.nl](mailto:n.zhou@iclon.leidenuniv.nl).

1. Are you female or male? (      )  
A. Female                                  B. Male
2. How old are you? \_\_\_\_\_
3. What is the highest level of formal education you have completed? (      )  
A. Diploma of secondary vocational school      B. Senior college degree  
C. Bachelor                                  D. Master                                  E. Doctorate
4. How many years of teaching experience do you have? \_\_\_\_\_
5. How many years of occupational experience do you have before becoming a teacher?  
\_\_\_\_\_
6. What subject do you teach? \_\_\_\_\_
7. When was the last time you attended work placement? \_\_\_\_\_
8. How many days do you plan to do work placement in the next year? \_\_\_\_\_

***This part is your perception of task value and self-efficacy for work placement. Please indicate below in what extent you think it's applicable with the following items: from 1 (It's not applicable to me at all) to 7 (It's completely applicable to me).***

1. Doing well in work placement will be important for my future career.
2. What I learn in work placement helps me in my teaching.
3. Having experience of work placement is valuable because it will help me in my future career.
4. I'm certain I can master the skills being presented in work placement.
5. The things I learn in work placement are practical for me to know.
6. I like work placement.
7. It is important to me to be someone who does well in work placement.
8. I believe I will learn a lot in work placement.
9. What I learn in work placement is so important for me.
10. What I am learning in work placement is exciting to me.
11. To succeed as a vocational teacher, work placement is necessary.
12. Doing well in work placement is an important part of who I am.
13. What I am studying in work placement fascinates me.
14. Experience with work placement will be useful for me later in life.
15. I enjoy what I am learning in work placement.
16. I'm confident I can do an excellent job in work placement.
17. I'm certain I can understand the most work content presented in work placement.
18. It is important to me to be a person who have experience of work placement.
19. I enjoy work placement.
20. Having experience of work placement is an important part of who I am.
21. Being someone who does well in work placement is important to me.
22. I think I will do well in work placement.

***This part is your perception of cost for work placement. Please indicate below in what extent you think it's applicable with the following items: from 1 (It's not applicable to me at all) to 7 (It's completely applicable to me). (\* means the items after EFA were remained for further analysis)***

1. I have to sacrifice much to be in work placement.
- \*2. Work placement is exhausting.
3. Work placement is much work.



- \*4. Work placement demands much of my time.
- 5. I can't spend as much time doing the other things that I would like because I am doing work placement.
- \*6. Work placement requires much effort.
- \*7. Work placement is stressful.
- 8. Work placement requires me to give up many other activities I value.
- 9. Work placement takes much time.
- 10. Doing work placement causes me to miss out on many other things I care about.
- \*11. I have to put much energy into work placement.
- \*12. Work placement is frustrating.
- \*13. I worry much about work placement.

***This part is your perception of engagement for work placement. Please indicate below in what extent you think it's applicable with the following items: from 1 (It's not applicable to me at all) to 7 (It's completely applicable to me).***

- \*1. During work placement, I express my opinions.
- 2. During work placement, I ask questions.
- 3. In work placement, I try to make all the different ideas fit together and make sense of these.
- \*4. In work placement, I participate in all discussions.
- \*5. I try hard to do well in enterprise.
- \*6. In work placement, I feel curious about what we are learning.
- \*7. I pay attention in work placement.
- \*8. In work placement, I try to relate what I'm learning to what I already know.
- \*9. I show what I like or what I don't like during work placement.
- \*10. I offer suggestions about how to make the work placement better.
- 11. Work placement is fun.
- 12. I tell my mentor what I am interested in.
- \*13. When I work on something in work placement, I feel interested.
- \*14. In work placement, I work as hard as I can.
- \*15. In work placement, I listen to my mentor very carefully.
- \*16. I enjoy learning new things in work placement.
- \*17. In work placement, I try to connect what I am learning with my teaching experiences.

\*18. In work placement, I make up my own examples to help me understand the important concepts I study.

## **Appendix C: Interview outline (Chapter 4)**

### **Introduction**

Thank you for participating in this interview today. I'm Na Zhou, the principal investigator of this study. It's a pity that we have to conduct this interview online instead of face to face because of the COVID-19 situation. I hope you won't feel any uncomfortable. As introduced before in email/WeChat, this study focuses on vocational teachers' learning process with work placement. In this interview, I would like to know your learning experience with work placement which was just completed one week ago. This interview will last around 45 minutes. The information you provide in our interview will be treated confidential and results will be made anonymous when reported. Our talks in this interview will not affect the assessment of your performance in work placement and you are free to withdraw at any time without giving any reason and without any negative consequences. Please feel free to share your opinions and experiences as there are no correct or wrong answers.

Now, I'm going to ask your permission to record our conversation. This recording will only be used for research, and if you want to stop recording during our talk for any reason, we can pause it at any time.

### **Interview Questions**

Firstly, I would like to know some background information about you.

- 1) What subject do you teach?
- 2) How long have you been teaching?
- 3) Do you have occupational experience before becoming a teacher?
- 4) How many times have you attended work placement?
- 5) How many days do you undertake this work placement?

Secondly, could you please talk a little about your learning experience with work placement which was just ended? For example, what did you do and what was your role? Did you attend particular learning activities? Do you still remember your first impression when you arrived at the workplace?

Thanks for your sharing, based on your experience, now I want to ask you some detailed questions.

*Learning activities in work placement*

- 1) Could you choose a typical day and describe what you did on that day?
- 2) Could you talk about what ways you used to learn in work placement?
- 3) What ways do you think are important to you and why?

*Perceived learning goals and outcomes*

- 1) What did you aim to learn before participation in work placement?
- 2) What have you learned from work placement?
- 3) In these what you have learned, which do you think is important to you?
- 4) How do you think this learning experience will influence your teaching practice?

**Concluding remarks**

Now, that's all my questions. Before we conclude this interview, is there something about work placement you want to share, which was not mentioned yet?

Thank you very much for your sharing. I will summarise the recording and send the text to you by email to check whether this is complete and correct. This interview will only be used for the research, will not influence your assessment in work placement and won't be shared with others except my research team members.

## **Appendix D: Interview outline (Chapter 5)**

### **Introduction**

Thank you for participating in this interview today. I'm Na Zhou, the principal investigator of this study. It's a pity that we have to conduct this interview online instead of face to face because of the COVID-19 situation. I hope you won't feel too uncomfortable. It has been around half a year since the last interview, in which we talked about your experience with your latest work placement. This time, we would like to know your perceptions of possible changes in your practice during the past semester. The interview will last around 45 minutes. The information you provide in our interview will be treated confidential and results will be made anonymous when reported. Our talks in this interview will not affect the assessment of your performance in work placement and you are free to withdraw at any time without giving any reason and without any negative consequences. Please feel free to share your opinions and experiences as there are no correct or wrong answers.

Now, I'm going to ask your permission to record our conversation. This recording will only be used for research, and if you want to stop recording during our talk for any reason, we can pause it at any time.

### **Interview Questions**

- (1) Could you reflect on what you did during work placement last time and summarise what you remember of it?
- (2) Could you please introduce a little about your teaching subjects in this semester? For example, teaching goals, teaching content, and teaching environment.
- (3) Could you talk a little about your students? Such as their grades, learning characteristics, future career.

### *Changes in behaviors*

- (1) Do you think your last experience with work placement was useful for your teaching in this semester?

If response: yes

- 1) Could you elaborate a little why you think it was useful? Also, were there any

changes in your teaching practice due to this work placement? How do you apply what you have learned from work placement to your teaching practice in this semester?

Probes: Probes are from the 'intentions for practice' of the interviews in Chapter 4. For example: You mentioned you would like to do xxx in the last interview, did you do that in this semester?

2) Why do you perform these changes?

3) Apart from your teaching practice, is there any other change?

4) Based on these changes, which changes do you think important?

If response: no

1) Why do you think it not useful?

*Factors influencing making changes*

From your sharing, it appears that you have changed a lot/little in your teaching practice after work placement. What factors do you think facilitating or hindering your changing or applying?

*Suggestion*

For the future work placement, what suggestions do you have?

### **Concluding remarks**

Now, that's all my questions. Before we conclude this interview, is there something about work placement you want to share, which was not mentioned yet?

Thank you very much for your sharing. I will summarise the recording and send the text to you by email to check whether this is complete and correct. This interview will only be used for the research, will not influence your assessment in work placement and won't be shared with others except my research team members.

## Appendix E: Questionnaire (Chapter 6)

Dear participants,

The aim of work placement is keeping up-to-date with your vocational knowledge and skills. In order to improve the effectiveness of work placement, ICLON Leiden University and CDIBB Tongji University are conducting a research project.

This questionnaire is part of the research project. The questions are focused on your experiences with using what you have learnt in work placement in your school practice. It is expected that the questionnaire will take 10-15 minutes to complete. Your input is very valuable to us as a research team and can contribute to future work placement of vocational teachers.

Your participation in this research is voluntary and you may also withdraw consent at any time. The information provided will be used solely for the purpose of this research project. The results from the questionnaire will be processed anonymously and results will always be made anonymous when reported. The data will be kept securely in Leiden University. If you have any questions or suggestions, feel free to send e-mail to this address: n.zhou@iclon.leidenuniv.nl.

1. Are you female or male? (      )  
A. Female                      B. Male
2. How old are you? \_\_\_\_\_
3. What is the highest level of formal education you have completed? (      )  
A. Diploma of secondary vocational school      B. Senior college degree  
C. Bachelor                      D. Master                      E. Doctorate
4. How many years of teaching experience do you have? \_\_\_\_\_
5. How many years of occupational experience do you have before becoming a teacher? \_\_\_\_\_
6. What subject do you teach? \_\_\_\_\_
7. When was the last time you attended work placement? \_\_\_\_\_
8. How many days did you attend for the last time? \_\_\_\_\_

***In this section we ask you to indicate what you have learnt in the latest work placement and how you use what you have learnt in your school practice. With regards to what did you learn in your latest work placement? Please provide some***

**examples in your own words.**

---



---



---

***Below, for each statement, please select the answer that best fits your experience with using what you have learnt in work placement in your school practice by using the following scale 1 (It's not applicable to me at all) to 5 (It's very applicable to me).***

1. I adapted my teaching content based on what I learned in this work placement.
2. I will keep using the adapted teaching content in my teaching.
3. I used some resources (cases, videos, guidebooks, etc.) got from this work placement in my class.
4. I will keep using these resources in my class.
5. I provided career information to students in my classes based on this work placement.
6. I will keep providing career information to students in my classes based on this work placement.
7. I organised activities aimed at developing my students' occupational competences based on this work placement.
8. I will keep organising these activities.
9. I shared my experience of this work placement to support my colleagues in school.
10. I will keep sharing my experience of this work placement with my colleagues.
11. I used my experience with this work placement to contribute to school development, such as developing new curricula and strengthening school-company cooperation.
12. I will keep using my experience of this work placement to contribute to school development.

***In this section, we ask you which factors influence you to keep using in your school practice what you have learnt in your latest work placement. Please indicate below to what extent you agree with the following items: 1 (Strongly disagree) to 5 (Strongly agree).***

1. My school supervisor meets with me regularly to work on problems I may be having in trying to use in school what I learnt from this work placement.
2. My school supervisor meets with me to discuss ways to apply this work placement



in school.

3. My school supervisor helps me set realistic goals for my performance as a teacher based on this work placement.

4. My colleagues at school appreciate my using what I learned in this work placement.

5. My colleagues at school encourage me to use what I have learned in this work placement.

6. In my school, my colleagues expect me to use what I learned in this work placement.

7. I'm allowed to try out what I learned from this work placement in my school.

8. The resources needed to use what I learned in this work placement are available in my school.

9. I get opportunities to use what I learned in this work placement in my school.

10. The equipment, materials, tools, etc. used in work placement are very similar to those I use in my school.

11. What I have learned in this work placement is very similar to what I teach.

12. I like the way this work placement seems so much related to my school work.

13. I don't have enough time to try to use this work placement in my school.

14. Trying to use this work placement takes much energy away from my other school work.

15. There is too much happening at school for me to try to use this work placement.

16. I never doubt my ability to keep using what I transferred from this work placement in my school.

17. I am sure I can overcome obstacles in my work as a teacher that hinder me to keep what I transferred from this work placement.

18. In my teaching, I feel very confident in keeping what I transferred from this work placement in the face of difficult or taxing situations.

19. I found my job performance as a teacher improved because of my transfer from this work placement to my school.

20. When I transferred from this work placement to my school, my students, colleagues, or supervisors always showed their interest.

21. My transfer from this work placement to my school always produced good results.

22. I feel that I'm closer to being a 'dual-qualified teacher' because of my transfer from this work placement to my school.

# Curriculum Vitae

Na Zhou was born on 25th January 1994, in Qingdao (China). After graduating from upper secondary education at Jiaonan No. 1 Middle School in 2012, she studied Management at East China University of Science and Technology (Shanghai, China) and obtained her bachelors' degree in 2016. Subsequently, she completed a Master degree of Management in 2019 at Tongji University (Shanghai, China). In 2019 August, Na started her PhD research at ICLON—Leiden University Graduate School of Teaching, the Netherlands. In her PhD research, Na focused on Chinese vocational teachers' professional learning in the context of work placement. At the same time, she worked as a research assistant in the Institute of Vocational and Technical Education at Tongji University.

During her PhD programme, Na attended courses in her research topic provided by the Dutch Interuniversity Centre for Educational Research (ICO). She published four chapters of the dissertation (Chapter2 to Chapter5). Chapter 6 has also been submitted for publication. She has presented her research during the following conferences: ICO International Spring School 2021, the annual meeting of the American Educational Research Association (AERA) 2022, European Conference on Educational Research (ECER) 2022.

# Publications

## Scientific Publications

Zhou, N., Tigelaar, D. E., & Admiraal, W. (2022). Vocational teachers' professional learning: A systematic literature review of the past decade. *Teaching and Teacher Education*, 119, 103856. <https://doi.org/10.1016/j.tate.2022.103856>

Zhou, N., Tigelaar, D. E., & Admiraal, W. (2022). The relationship between vocational teachers' motivational beliefs and their engagement in work placement. *Journal of Vocational Education & Training*, 1-20. <https://doi.org/10.1080/13636820.2022.2066560>

Zhou, N., Tigelaar, D. E., & Admiraal, W. (2022). Factors influencing the impact of work placement on vocational teachers' school practice. *Educational Studies*, 1-20. <https://doi.org/10.1080/03055698.2022.2069462>

Zhou, N., Tigelaar, D. E., & Admiraal, W. (2021). Understanding vocational teachers' professional development in work placement: learning goals, activities, and outcomes. *Studies in Continuing Education*, 1-19. <https://doi.org/10.1080/0158037X.2021.1960496>

## Manuscripts Submitted for Publication

Zhou, N., Tigelaar, D. E., Wang, J., & Admiraal, W. (Submitted for publication) Factors predicting vocational teachers' transfer of learning: A quantitative study in the context of work placement

## Presentations

Zhou, N., Tigelaar, D., & Admiraal, W. (2021, March). The relationship between vocational teachers' motivational beliefs and their engagement in work placement. Paper presented at the online ICO International Spring School (ISS), the Netherlands.

Zhou, N., Tigelaar, D., & Admiraal, W. (2022, April). Understanding vocational teachers' professional development in work placement: learning goals, activities, and outcomes. Paper presented at the online annual meeting of the American Educational Research Association (AERA), the USA.

Zhou, N., Tigelaar, D., & Admiraal, W. (2022, September). Factors influencing the impact of work placement on vocational teachers' school practice. Paper presented at the European Conference on Educational Research (ECER), Yerevan.

# Acknowledgements

In August 2019, I flew to the Netherlands and started my academic life as a PhD candidate. In this wonderful journey, I experienced many sweet and warm moments, such as papers being accepted, friends party, flying trips. Of course, I also got lots of tough times, in particular, the outbreak of COVID-19 ever made me at a loss of what to do in my life and work. But, no matter those good or blue days, I never felt afraid and stopped my steps because of your support, company, and love. Now, I would like to express my sincere appreciation to you!

I would first thank my promotor Professor Wilfried Admiraal, who is a knowledgeable, insightful, and modest researcher, as well as the best tour guide of my research journey. During the past three and half years, we had communications through more than sixty meetings and countless emails. Every discussion, your insights always enlighten and benefit me a lot. I also learned from you how to face and settle any difficulties in research with a positive attitude. In addition, you are also a person who is passionate for life. I enjoy reading ‘wekelijks berichtje’ written by you (although it’s Dutch, I always translate it into English), in which you often share your dogs, trips, and much other interesting stuff. This also inspires me to think about how to pursue a good balance of my work and life in the future.

I would further thank Dr Dineke Tigelaar, who is not only my supervisor but also my lovely friend. In this research journey, you were always patient and careful with any of my questions, even if some of them might be a little silly. And you provided me with a lot of valuable comments and suggestions, which of course improved the quality of my work. I learn from you about what a responsible and thoughtful supervisor should be like, which will be helpful for me if I have an opportunity to supervise others in my future career. You also enriched my life in the Netherlands, such as you gave me a sightseeing tour of your living town. The pictures we dressed in Cheese lady clothes together was one of my favourite pictures in the Netherlands.

Thanks to all ICLON colleagues. I cherish the memory of every happy hour, every research group meeting, and every small talk in the office or in the hallway. You

provide me with not only academic but also cultural and emotional support. I would like to particularly thank my Chinese colleagues Linyuan Wang, Xu Liu, Xiaohua Jia, and Xin Zhang. It is all of you that make my life in the Netherlands rich and colourful. Outside the ICLON, I would like to thank my colleagues at the Institute of Vocational and Technical Education, Tongji University. In particular, I owe my thanks to my master's supervisor Professor Jiping Wang. You gave me so much support and guidance during my PhD studies. And thanks my pal Hui Tang. It is my luck to have you to share our research and daily life all the time.

To my family, you are who I care about the most. My dear mother, father, and sister, you give me all of your love on my way of growing up. You always encourage me to try anything I want and respect every decision that I made. My dear boyfriend Xinglin Jin, a kind, gentle, and warm man, I am so lucky to hold your hand on this journey. As you said, we know each other more than anyone else and confront the difficulties together during our PhD processes.

Besides, I would like to thank myself, a girl who always held her destiny in her own hands. I know all of what you experienced on this journey and I'm glad to see that you make great progress. Although the future is not predictable, please do know, I will be with you all the time.

In the end, I send my blessing to all I mentioned above with the words from the movie 'Soul', it is 'I am going to live every minute of it'.

Na Zhou  
Shanghai



**Universiteit  
Leiden**  
ICLON

## **Leiden University Graduate School of Teaching**

### **ICLON PhD Dissertation Series**

- Hoeflaak, A. (1994). *Decoderen en interpreteren: een onderzoek naar het gebruik van strategieën bij het beluisteren van Franse nieuwsteksten.*
- Verhoeven, P. (1997). *Tekstbegrip in het onderwijs klassieke talen.*
- Meijer, P.C. (1999). *Teachers' practical knowledge: Teaching reading comprehension in secondary education.*
- Zanting, A. (2001). *Mining the mentor's mind: The elicitation of mentor teachers' practical knowledge by prospective teachers.*
- Uhlenbeck, A.M. (2002). *The development of an assessment procedure for beginning teachers of English as a foreign language.*
- Oolbekkink-Marchand, H.W. (2006). *Teachers' perspectives on self-regulated learning: An exploratory study in secondary and university education.*
- Henze-Rietveld, F.A. (2006). *Science teachers' knowledge development in the context of educational innovation.*
- Mansvelder-Longayroux, D.D. (2006). *The learning portfolio as a tool for stimulating reflection by student teachers.*
- Meirink, J.A. (2007). *Individual teacher learning in a context of collaboration in teams.*
- Nijveldt, M.J. (2008). *Validity in teacher assessment: An exploration of the judgement processes of assessors.*
- Bakker, M.E.J. (2008). *Design and evaluation of video portfolios: Reliability, generalizability, and validity of an authentic performance assessment for teachers.*
- Oonk, W. (2009). *Theory-enriched practical knowledge in mathematics teacher education.*
- Visser-Wijnveen, G.J. (2009). *The research-teaching nexus in the humanities: Variations among academics.*
- Van der Rijst, R.M. (2009). *The research-teaching nexus in the sciences: Scientific research dispositions and teaching practice.*

- Platteel, T.L. (2010). *Knowledge development of secondary school L1 teachers on concept-context rich education in an action-research setting.*
- Kessels, C.C. (2010). *The influence of induction programs on beginning teachers' well-being and professional development.*
- Min-Leliveld, M.J. (2011). *Supporting medical teachers' learning: Redesigning a program using characteristics of effective instructional development.*
- Dobber, M. (2011). *Collaboration in groups during teacher education.*
- Wongsopawiro, D. (2012). *Examining science teachers pedagogical content knowledge in the context of a professional development program.*
- Belo, N.A.H. (2013). *Engaging students in the study of physics: An investigation of physics teachers' belief systems about teaching and learning physics.*
- De Jong, R.J. (2013). *Student teachers' practical knowledge, discipline strategies, and the teacher-class relationship.*
- Verberg, C.P.M. (2013). *The characteristics of a negotiated assessment procedure to promote teacher learning.*
- Van Kan, C.A. (2013). *Teachers' interpretations of their classroom interactions in terms of their pupils' best interest: A perspective from continental European pedagogy.*
- Dam, M. (2014). *Making educational reforms practical for teachers: Using a modular, success-oriented approach to make a context-based educational reform practical for implementation in Dutch biology education.*
- Hu, Y. (2014). *The role of research in university teaching: A comparison of Chinese and Dutch teachers.*
- Vink, C.C. (2014). *Mapping for meaning: Using concept maps to integrate clinical and basic sciences in medical education.*
- De Hei, M.S.A. (2016). *Collaborative learning in higher education: design, implementation and evaluation of group learning activities.*
- Louws, M.L. (2016). *Professional learning: what teachers want to learn.*
- Moses, I. (2017). *Student-teachers' commitment to teaching.*
- Veldman, I. M.J. (2017). *Stay or leave? Veteran teachers' relationships with students and job satisfaction.*
- Chen, D. (2017). *Intercultural identities of English language teachers: An exploration in China and the Netherlands.*
- Vereijken, M.W.C. (2018). *Student engagement in research in medical education.*
- Stollman, S.H.M. (2018). *Differentiated instruction in practice: A teacher perspective.*

- Day, I.N.Z. (2018). *Intermediate assessment in higher education*.
- Huisman, B.A. (2018). *Peer feedback on academic writing*.
- Tran, T.T.Q. (2018). *Cultural differences in Vietnam: Differences in work-related values between Western and Vietnamese culture and cultural awareness at higher education*.
- Van Ginkel, G.V.M. (2018). *Making mentoring match: Mentor teachers' practical knowledge of adaptive mentoring*.
- Wieringa, N. (2019). *Teacher knowledge and lesson design: Understanding and supporting biology teachers' decision-making while designing context-based lessons*.
- Vossen, T.E. (2019). *Research and design in STEM education: What do students and teachers think about the connection?*
- Van Kampen, E. (2019). *What's CLIL about bilingual education? A window on Content and Language Integrated Learning pedagogies*.
- Den Ouden, J.A.J. (2020). *Zachtjes schudden aan de boom: Een onderzoek naar rationales en kernpraktijken van eerstegraads docenten Godsdienst/Levensbeschouwing gericht op de levensbeschouwelijke identiteitsontwikkeling van hun leerlingen*.
- Vogelzang, J. (2020). *Scrum in secondary chemistry education: A methodology to support teachers and to scaffold students*.
- Kop, P.M.G.M. (2020). *Graphing formulas by hand to promote symbol sense: Becoming friends with algebraic formulas*.
- Lamers-Reeuwijk, A.M. (2020). *Teaching and professional development in transnational education in Oman*.
- De Vrind, E. (2020). *The SpeakTeach method: Towards self-regulated learning of speaking skills in foreign languages in secondary schools: an adaptive and practical approach*.
- De Jong, L.A.H. (2021). *Teacher professional learning and collaboration in secondary schools*.
- Zhang, X. (2021). *Teachers' teaching and learning motivation in China*.
- Wang, J. (2021). *Technology integration in education: Policy plans, teacher practices, and student outcomes*.
- Guo, P. (2021). *Online project-based higher education: Student collaboration and outcomes*.
- Jin, X. (2021). *Peer feedback in teacher professional development*.
- Keijzer-Groot, R. (2021). *Vocational identity of at-risk youth: Tailoring to support*



*career chances.*

Rumiantsev, T. (2022). *Collaborative learning in conservatoire education: catalyst for innovation.*

Galikyan, I. (2022). *Learner–learner interaction in digital learning environments: What and how are we measuring?*

De Boer, E. (2022). *Towards An Ecological Approach to Teacher Professional Development: How preservice biology teachers direct their learning routes in authentic classroom settings.*

Kroneman, M. (2022). *Peer education as an opportunity for practicing respect for sexual and gender diversity.*

Le, T.T.T. (2022). *Towards a democratic school: Experience and viewpoints of stakeholders in Vietnamese secondary schools.*

Zhou, N. (2023). *Professional learning of vocational teachers in the context of work placement*