

**The Role of Expertise in Relation to Professional Teacher Identity: A Study Amid
Emergency Remote Teaching in the Netherlands**

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Abstract

This study sampled Dutch secondary education teachers to investigate the relationship between their level of expertise and sense of professional teacher identity amid emergency remote teaching. Professional teacher identity encompassed the following six domains: teacher self-efficacy, job satisfaction, occupational commitment, motivation, self-image, and emotions. This study employed a mixed-method design, respectively involving an online questionnaire ($N = 81$) and interviews ($N = 5$). The questionnaire comprised a previously validated scale for each domain of professional teacher identity, resulting in a total of 55 items.

Through analysis of variance, mean differences between novice and expert teachers were detected based on each domain of professional teacher identity. To elucidate these relationships, the moderator variables age and teacher-tracking were added. Statistically significant main effects revealed differences between novice and expert teachers on the domains of self-efficacy, motivation, self-image, and emotions. Moreover, statistically significant interaction effects revealed age moderates the relationship between expertise and self-efficacy, while teacher-tracking moderates the relationship between expertise and occupational commitment. The results imply further support is required from school administrators and policymakers, particularly for early-career teachers who struggle with their sense of professional teacher identity amid emergency remote teaching.

Keywords: professional teacher identity, emergency remote teaching, teacher development

The Role of Expertise in Relation to Professional Teacher Identity: A Study Amid Emergency Remote Teaching in the Netherlands

Following the COVID-19 outbreak, all Dutch educational institutions closed their doors on March 16, 2020 (Rijksoverheid, 2020a). This required a shift from a regular classroom setting to what Hodges et al. (2020) describe as *emergency remote teaching* (ERT). ERT, as opposed to online teaching, is different in a manner that ERT was realised with minimum resources and scant preparation time. Subsequently, concerns about maintaining the quality of education surfaced. Remarkably, much of the present work has studied the impact of ERT on students (e.g., Kecojevic et al., 2020; Lyons et al., 2020), whereas scarce research has investigated the impact on teachers (Kim & Asbury, 2020). Notwithstanding the evident value of student-related research, one must not overlook teachers who play an essential role in education.

Since ERT, pressure and additional job requirements of teachers have mounted (Rappanta et al., 2020). Workload and other stress factors, which were already emerging issues before the pandemic (Skinner et al., 2021), seem progressively worrisome during ERT. This ‘new’ way of working has inevitably affected the way in which teachers perceive teaching, the profession, learning, and themselves in the midst of this. The crux in the context of the present paper lies at the fact that changing job requirements and conditions inherent to ERT, have the potential to impede the development of teachers’ professional identity. *Professional teacher identity* (PTI) is defined as ‘how they perceive themselves as teachers and what factors contribute to these perceptions’ (Beijaard et al., 2000, p.749). Researching PTI is timely and provides a profound understanding of what it means to be a teacher restricted to the context of ERT.

In particular, early-career teachers struggle with establishing a stable sense of PTI. Their PTI is often destabilised by contextual factors such as school rules and norms. Hong

(2010) found patterns that suggest early-career teachers, who struggle with their professional identity, subsequently show high inclinations to leave the profession. It is thus relevant to distinguish between teachers' level of expertise. Researchers who study teacher experience or early-career teacher retention most frequently use three to five years to discern between novice and experienced teachers (Palmer et al., 2005; Smith & Ingersoll, 2004). Therefore in line with this premise, a cut-off point of five years' experience discerned between novice and expert teachers.

The purpose of this study is to provide policymakers and school administrators with an insightful knowledge base to further support teachers' PTI development. This is invaluable, since there is a dearth of research on the topic thus far. Moreover, when teachers do not receive adequate support, there is an increased risk of them leaving the field (Bolhuis et al., 2016; Skinner et al., 2021). Both in the Netherlands and globally, teacher attrition has been problematic over the past few decades (Ministerie van Onderwijs Cultuur en Wetenschap, 2020). According to recent figures, teacher attrition is most challenging in secondary education as opposed to primary and higher education (Rijksoverheid, 2020b). If nothing happens, the number of fulltime job vacancies in Dutch secondary education rises to approximately 1200 in 2027.

Professional Teacher Identity

PTI has gained increasing attention over the past decade (e.g., Hanna et al., 2019; Skinner et al., 2021). Whereas previous research predominantly concentrated on pedagogical competence (i.e., how to teach), recent studies have prioritised the person behind the teacher (e.g., Beauchamp & Thomas, 2009; Buchanan, 2015). Concurrent with this shift to a social perspective on teaching, most contemporary encyclopaedias and teacher handbooks have recognised PTI as a prominent feature of teacher development (Norton & Toohey, 2011). Most studies investigated what factors influence PTI (e.g., Berger & Lê Van, 2019); fewer studies

investigated the outcomes of PTI. The ones that did study the outcomes, established relationships between teachers with a strong sense of their PTI and tendencies to remain in the teaching profession (Chong et al., 2011).

Hitherto, there is no consensus regarding the conceptualisation of PTI. Hanna et al. (2019) conducted a meta-analysis on quantitative instruments, concluding on six (i.e., self-image, motivation, commitment, self-efficacy, task perception, and job satisfaction) PTI domains – also referred to as components, dimensions, or indicators. Canrinus et al. (2011) concluded four (i.e., self-efficacy, change in motivation, commitment, and job satisfaction). Despite discrepancies among researchers who aim to conceptualise PTI, it is commonly accepted the concept cannot simply be possessed by someone. Rather PTI appears to be bound to continuous change over the course of one's teaching career (Beijaard et al., 2004), and hence is more dynamic. Additionally, its dynamic character is strongly influenced by interaction with the environment (Buchanan, 2015).

In the present paper, PTI is defined as 'how teachers perceive themselves as teachers and what factors contribute to these perceptions' (Beijaard et al., 2000, p.749). The conceptualisation used within this study commences with the framework of Canrinus et al. (2011), who sampled over 1000 Dutch secondary education teachers. They proposed a four-domain structure: self-efficacy, job satisfaction, occupational commitment, and change in motivation (Figure 1). To achieve deeper understanding of the concept of PTI, this study has extended the four-domain conceptualisation by the addition of two domains, namely self-image and emotions (Figure 2).

Figure 1*Four-domain Conceptual Model of PTI*

Note. This model derives from previous research by Canrinus et al., 2011, *European Journal of Psychology of Education*, 27(1), p.123. Copyright 2011 by Canrinus et al.

Figure 2*The Proposed Six-domain Structure of Professional Teacher Identity*

The Six Domains of Professional Teacher Identity

Self-image is the way in which teachers perceive themselves and relates to Roger's (1959) *self-theory*. Rogers presents the need for congruence between a person's self-image and ideal self, in order for individuals to develop. Self-image relates to teachers' perceptions of themselves, and so insights into self-image enrich the understanding of PTI. Besides, *emotions* – which can be defined as sets of psychological states that affect mindset and behaviour, and their influence in teaching have gained more attention over the past few years (e.g., Iza-dinia, 2015; Zhang, 2019). Additionally, Canrinus et al. (2011) state 'It would be contributing to the further understanding of the process of interaction between teachers and their context when further research relates teachers' emotions to teachers' professional identity on a larger scale' (p. 128). The following section comprises the conceptualisation of each PTI domain.

Teacher self-efficacy can be defined as 'individual teachers' beliefs in their own abilities to plan, organise, and carry out activities required to attain given educational goals' (Skaalvik & Skaalvik, 2007, p. 612). Teacher self-efficacy has frequently been advanced through the theoretical framework of self-efficacy, which is a widely investigated concept in predominantly social studies (Bandura, 1997). Teacher self-efficacy refers to the way teachers deliver instruction, which in turn impacts the way student learn and behave. Tschannen-Moran and Woolfolk Hoy (2001) argue the concept is divided into: instructional strategies, classroom management, and student engagement. Furthermore, it is most malleable during the initial stages of one's professional teaching career, whereas this becomes more rigid over time. This proposition has been corroborated in other studies (e.g., Wolters & Daugherty, 2007). Given these points, it is crucial to investigate teacher self-efficacy as a domain of PTI.

Job satisfaction relates to the degree to which teachers are (dis)satisfied with their job (Astrauskaite et al., 2011). Some theories on job satisfaction, such as Herzberg's (1959) moti-

vation-hygiene theory, highlight external influences like autonomy and support. Other theories, such as Staw and Ross's (1985) dispositional approach, attribute job satisfaction to individuals' dispositional features. So, the motivation-hygiene theory posits job satisfaction is mostly situational, whereas the dispositional approach argues job satisfaction originates in intrinsic characteristics. In line with Troesch and Bauer (2017), job satisfaction affects feelings and opinions teachers have about the profession, but also about themselves. Hence job satisfaction, regardless of whether it is stable, influenced by contextual factors or dispositional, plays a role in teachers' sense of their PTI.

Occupational commitment is 'the psychological link between a person and his or her occupation that is based on an affective reaction to that commitment' (Canrinus et al., 2011, p. 119). Regarding this study, occupational commitment is the extent to which individual teachers dedicate themselves to the teaching profession. Previous studies discovered relationships between commitment and job satisfaction (e.g., Landsman, 2001). Furthermore, Thien et al. (2014) observe that committed teacher invest largely in extracurricular activities such as personal development. Therefore, the degree of occupational commitment influences the way in which teachers want to develop and provides an understanding of how teachers position themselves in relation to the profession.

Motivation is a set of principles that drive human behaviour (Atkinson, 1957). This study is interested in what drives teachers' behaviour towards ERT. According to the expectancy-value theory, people base their actions upon the expectancy of success and the value of outcomes (Wigfield & Eccles, 2000). The relationship between expectancy and value is interactive. Motivation helps uncovering one's PTI, because it reveals teachers' actions, and more importantly in context of the present study; what motivates them to adopt ERT or not.

Self-image relates to teachers' perceptions about their own teaching. The present study

argues self-image is pivotal in one's professional identity. The following excerpt is illustrative to this argument:

By implication, therefore, it matters to teachers themselves, as well as to their pupils, who and what they are. Their self-image is more important to them as practitioners than is the case in occupations where the person can easily be separated from the craft. (Nias, 1989, pp. 202-203)

Additionally, self-theory (Rogers, 1959) necessitates the continuous process of development to ultimately achieve self-actualisation. To this end, teachers must be able to reflect upon themselves, because no one else knows how we perceive. Given these points, it is argued PTI and teachers' self-image cannot be seen as separate entities. Rather, these two are interwoven during an ongoing process of becoming and being a teacher (Beijaard et al., 2000).

Finally, emotions are sets of psychological states that affect mindset and behaviour, influenced by internal and external stimulus events (Scherer, 2005). Whereas previously emotions were deemed worthless by policymakers (Constanti & Gibbs, 2004), present research has acknowledged their role in teaching (King & Chen, 2019). Teaching is not only a technical enterprise, rather it is inseparably linked to teachers' personal state of minds. Zembylas (2005) states speaking about emotions helps teachers understanding themselves, which provides opportunities for teacher development. Therefore, elucidating current emotional states among secondary school teachers yields more insightful outcomes into their PTI.

Professional Teacher Identity and Expertise

According to Hong (2010), early-career teachers are especially susceptible to changing contexts. This observation is consistent with Berliner's (1988) model of teacher development, in which the early-career or novice teacher is portrayed as someone who is particularly vulnerable to the demanding tasks and continuously changing contextual factors inherent to

teaching. For example, first-year teachers predominantly conform themselves to environmental rules and norms (Hong, 2010). The problem here is that this surface-level behaviour is not rooted in their own ideas and values and thus destabilises their personal professional identity. This line of reasoning makes it especially interesting to investigate how ERT plays a role in the development of these early-career teachers as opposed to expert teachers. To distinguish between early-career and expert teachers, a cut-off point of five years' experience in secondary education was set. This is concurrent with much of the research on teacher retention and teacher experience (Palmer et al., 2005; Smith & Ingersoll, 2004). Therefore, the present study bestowed the label expertise upon the group of teachers with over five years' experience and labelled the group with fewer than five years' experience as novice teachers.

Professional Teacher Identity and Age

Previous research found positive relationships between age and domains of PTI, such as commitment and motivation. For instance, Buelens and Van der Broeck (2007) posited age plays a significant role in employee commitment and motivation. Additionally, Kooij et al. (2011) found that age-related factors negatively influence older workers' motivation to continue work. More importantly, the Dutch secondary education setting has attracted many second-career teachers over the past years. These second-career teachers are older as opposed to their first-career counterparts. The question is whether older, yet sometimes still novice teachers, can utilise prior work experiences to establish a solid PTI. Hence, to elucidate the relationship between expertise and PTI, this study incorporated age as a moderator variable.

Professional Teacher Identity and Teacher-tracking

Teacher-tracking is the allocation of teachers to students of different academic levels (Finley, 1984). Kelly (2004) argued teacher-tracking plays an important role in teachers' work experiences. Besides, the differentiation-polarisation theory (Hargreaves, 1967) assumes

lower-track students react differently towards certain situations. Additionally, tracking students leads to polarisation between students from different tracks. These differences relate to emotions, attitudes, stress levels, and behaviour. According to Kelly, lower-track students focus largely on preserving certain social identities within a classroom setting (p. 199). Subsequently, these behaviours affect teachers' sense of satisfaction and efficacy. Therefore, including teacher-tracking as moderator variable assists in attaining a more comprehensive view on the relationship between expertise and PTI.

The Present Study

The present study has two aims. First, to examine the relationship between teachers' level of expertise and establishing a PTI amid ERT. Second, to advance theory by adding self-image and emotions as domains of PTI. Research question one examines the relationship between teachers' level of expertise and their sense of PTI. Research questions two and three concentrate on the moderator variables age and teacher-tracking, which elucidate the relationship between expertise and PTI. The fourth research question examines the six-domain questionnaire on PTI.

1. What is the difference in Dutch secondary education teachers' sense of their professional identity between novice and expert teachers
2. Does age moderate the relationship between Dutch secondary education teachers' sense of their professional teacher identity and level of expertise?
3. Does teacher-tracking moderate the relationship between Dutch secondary education teachers' sense of their professional teacher identity and level of expertise?
4. How well does the proposed six-construct model (teacher self-efficacy, job satisfaction, occupational commitment, motivation, self-image, and emotions) measure teachers' professional identity?

Methods

Participants

Following the priori G Power analysis for the analysis of variance test, 90 participants were required with sufficient statistical power ($\beta = .80$), a medium effect size ($\eta^2 = .09$), and a commonly used error probability ($\alpha = .05$) (Faul et al., 2007). For the moderator analysis, 190 participants were required ($\beta = .80$; $\eta^2 = .09$; $\alpha = .05$). The initial sample encompassed 135 participants. Inclusion criteria read: divulging age, experience, teacher-track, and having completed the questionnaire. After selection based on the aforementioned criteria, 85 participants were retained. However, four participants were regarded as outliers based on pre-established conditions (see Results), resulting in a final sample of $N = 81$.

Sociodemographic statistics of the 81 participants are represented in table 1. The sample was female-dominated, which is unrepresentative of the entire Dutch secondary education gender ratio, which is about 1:1 (Onderwijs in Cijfers, 2017). As for age, most of the participants were between 40 and 50 years old. Most of the participants were expert teachers. In terms of teacher-tracking, all three groups were fairly equally represented. The pseudonyms and sociodemographic statistics of the five teachers who partook in the interview are represented in table 2. The sample comprised four novice and one expert teacher. The sample was versatile in respect to subject matter, teaching hours, and teacher-tracking. Concerning age, the sample was limited to teachers between 23 and 31 years old.

Table 1

Sociodemographic Characteristics of Online Questionnaire Participants

Variable	<i>n</i>	%
Gender		
Female	56	69
Male	24	30
Other	1	1

	<i>n</i>	%
Age		
20-30 years old	20	25
30-40 years old	16	20
40-50 years old	28	35
> 50 years old	17	21
Teacher-tracking		
Pre-vocational track	30	37
Senior general track	24	30
Pre-university track	27	33
Employment status		
0-5 teaching hours	5	6
5-10 teaching hours	26	32
10-15 teaching hours	27	33
15-20 teaching hours	18	22
> 20 Teaching hours	5	6
Expertise		
Novice	30	37
Expert	51	63

Note. Total sample $N = 81$.

Table 2

Sociodemographic Characteristics of Interviewees

Pseudonym	Gender	Experience	Subject Matter	Teaching Hours	Age	Track
Gerard	Male	6	Mathematics	14	31	Havo
Marloes	Female	3	English	12	24	Vmbo
Joske	Female	3	Biology	21	26	Vmbo
Hamza	Male	1	English	16	23	Vwo
Niels	Male	3	Geography	24	24	Havo/vwo

Note. Experience = in years. Teaching hours = clock hours on a weekly basis.

Research Design

This study employed a mixed-methods design, respectively involving a quantitative and qualitative phase. According to Creswell's (2003) categorisation, this study can be classified as a 'quantitative dominant sequential triangulation research'. This means the present

study prioritised quantitative data, whereas qualitative data assisted in explaining and interpreting quantitative data. The quantitative design was cross-sectional, with one group of teachers. The rationale for a mixed-method approach is the versatility of PTI. Much of the earlier work set out to measure the concept qualitatively, (e.g., Lee, 2013). More recent work has designed questionnaires to cover the concept (e.g., Hanna et al., 2019). However, after a literature review, it was concluded neither a mere qualitative, nor quantitative approach suffices. Therefore, for the purpose of breadth and depth of understanding the concept of PTI, interviews alongside the questionnaire were employed (Ivankova et al., 2006).

Procedure

This study adopted a nonprobable purposive method to recruit participants for the questionnaire. Purposive sampling involves finding participants by setting selection criteria, based on the researcher's judgment and aim (Etikan et al., 2016). This meant recruitment of merely secondary school teachers in the Netherlands. Recruitment strategies involved contacting the researcher's personal networks through social media platforms, such as LinkedIn and Facebook. Additionally, participants were asked to share the online questionnaire with colleagues. Before filling out the questionnaire, participants read the information letter (Appendix A) and subsequently filled out the informed consent form (see Appendix B). Qualtrics, a survey tool, was used to process and distribute data. Concerning the interviews, this study adopted a non-random purposive sampling strategy. In total, five teachers partook in the interviews. Participants received the information letter and informed consent form through email. Thereafter participants filled out the informed consent form and sent it back, which was a condition for participation. The interviews were conducted and audio recorded using Microsoft Teams.

Measures

For each domain of PTI, a previously validated scale was employed. This meant six subscales, which accounted a total of 55 items (Appendix C). To uphold psychometric qualities of the scales, meticulous adaption took place. Only words that described context were changed (i.e., ‘university’ became ‘school’). Furthermore, participants were asked to keep in mind ERT. The original scales employed different scoring options, ranging mostly from five-point to nine-point scales. In line with the majority of studies, but opposing their neutral-option choice, a six-point Likert scale was employed. Students were asked to rate each item as *totally disagree* (1), *disagree* (2), *slightly disagree* (3), *slightly agree* (4), *agree* (5), or *totally agree* (6). The neutral option underwent omission since it significantly increases the number of people who pretend to have no preference, but in fact do (Bishop, 1987; Dunlop et al., 2012). The questionnaire was tested during a pilot. As a result of the pilot, minor item reformulations took place. For example, the prepositional phrase ‘veer off’ was replaced with the verb ‘distracted’, since the former might be unfamiliar to Dutch teachers. Table 3 displays an overview of the original scales, including modifications, and internal consistency scores derived from this study’s data.

Table 3

Overview of the Selected Scales for the Domains of Professional Teacher Identity

Domain	Original Instrument	Subscales	Modifications	Cronbach’s α
TSE	<i>Short Form of the Teachers’ Sense of Self-efficacy Scale</i> (TSES) (Tschannen-Moran & Woolfolk Hoy, 2001).	Instruction (4 items) Management (4 items) Engagement (4 items)	Questions ‘Why’ underwent adaption to ‘I am able to ..’.	$\alpha = .93$
JS	<i>Short Index of Job Satisfaction</i> (SIJS) (Judge & Klinger, 2008).	No subscales (5 items)	The original scale consisted of 18 items (Brayfield & Rothe, 1951). The SIJS was adopted completely.	$\alpha = .83$

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JS	<i>Short Index of Job Satisfaction</i> (SIJS) (Judge & Klinger, 2008).	No subscales (5 items)	The original scale consisted of 18 items (Brayfield & Rothe, 1951). The SIJS was adopted completely.	$\alpha = .83$
OC	<i>Commitment to Teaching Scale</i> (Thien et al., 2014).	Commitment to teaching (3 items) Commitment to the profession (4 items)	Only included the subscales Commitment to Teaching and Commitment to Profession. Item two 'I sometimes lie awake at night, thinking about the next day at work' was removed since it decreased Cronbach's α .	$\alpha = .77$
Mot	<i>Cooperative Learning Implementation Questionnaire</i> (CLIQ) (Abrami et al., 2004).	Expectancy (4 items) Perceived-value (4 items) Perceived-cost (7 items)	Omitted the item specific to cooperative learning 'Peer interaction helps students obtain a deeper understanding of the material'.	$\alpha = .81$
SI	<i>Professional Identity Questionnaire</i> (PIQ) (Abu-Alruz & Khasawneh, 2013)	No subscales (8 items)	Adopted completely.	$\alpha = .72$
Emo	<i>Maslach Burnout Inventory</i> (MBI) (Maslach et al., 2008).	Strain (5 items) Frustration (3 items)	Adopted completely.	$\alpha = .86$

Note. TSE = Teacher Self-efficacy. JS = Job Satisfaction. OC = Occupational Commitment.

Mot = Motivation. SI = Self-image. Emo = Emotions.

Questions for the semi-structured interview were based on the six domains of PTI.

Semi-structured interviews offer a flexible approach by not rejecting pre-assumptions, while still adhering to prior theoretical understandings (Schmidt, 2004). Additionally, this enabled the option to ask probing questions, allowing the interviewer to completely grasp the participants' perspective. Initially, interview questions were formulated in English. However, the

choice was made to conduct interviews in Dutch. Doing so increased the reliability of the interviews, since teachers feel more comfortable and can provide a deeper understanding through their native tongue. Both the English and Dutch version can be found in appendix D. Interviews lasted between 20 to 35 minutes. It should be noted that the small sample size has impact on the extent to which one can generalise the findings, since every teacher's perspective is unique (Maher et al., 2018).

Data Analysis

Statistical analyses were performed using *Statistical Program for Social Sciences* (SPSS), version 26 for Windows. For each domain of PTI – self-image, teacher self-efficacy, job satisfaction, occupational commitment, motivation, and emotions, a summed score based on the items was calculated. To investigate research question one, six one-way analysis of variance tests were run. Additionally, research question two and three were investigated through the univariate analysis command in SPSS, including both self-image and emotions as moderator variables.

Concerning research question four, a confirmatory factor analysis (CFA) and subsequent exploratory factor analysis (EFA) were run in Rstudio, version 1.4. The CFA tested the proposed six-factor solution, whereas the EFA explored the underlying factor structure. The CFA is a structured equation model that measures the relationship between latent variables, also known as factors, and the observed item scores (Brown & Moore, 2012). The chi-squared test (i.e., goodness-of-fit test) of the CFA model compared the sample outcomes to the model-implied population; with a non-significant result indicating a good fit and vice versa. This study used the following fit indices: Tucker Lewis Index (TLI), Confirmatory Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA); with the latter preferably resulting in $p < .05$, and the TLI and CFI resulting in $> .95$ (Shi & Maydeu-Olivares, 2019).

The interviews were manually transcribed in Word and coded in NVivo 12 Pro. To ensure reliability, data were analysed through three sequential coding stages, namely open coding, axial coding, and selective coding (Glaser & Strauss, 1967). Through open coding, relevant parts of data were identified and labelled with a code. Open codes between the different interviews were matched and altered where necessary. In the axial coding phase, open codes were further refined, aligned, and categorised (Williams & Moser, 2019). Through the axial coding phase, *constant comparison* was used. Constant comparison refers to cross-referencing between the different open codes and refining these to come up with interrelating concepts. In the latter phase, general themes from the axial codes were derived and compared to the priori codes.

Results

Based on the approach that item scores were not allowed to deviate more than three standard deviations from the interquartile range (Hoaglin et al., 1986), four outliers were removed from the data set. These participants violated the cut-off point for multiple outcome variables. This meant the final sample comprised 81 participants. Thereafter, the outcome variables self-efficacy, job satisfaction, occupational commitment, motivation, self-image, and emotions were all checked for normally distributed scores, based on skewness and kurtosis values between -2 and 2 (George & Mallery, 2010). The assumption of homoscedasticity was violated for the one-way analysis of variance test for the outcome variable self-efficacy. However, since group sizes were > 30 and the largest standard deviation did not exceed the smallest standard deviation times two, results could still be interpreted (Aarts & Wouters, 2018). Thereafter, further assumptions regarding linearity and independent observations were satisfied.

Descriptive Statistics

The average score on teacher self-efficacy was 51.93 ($SD = 10.56$), with scores ranging from 12 to 72. Regarding job satisfaction, participants had a mean score of 22.40 ($SD = 4.05$), with a score range from five to 30. The mean score for occupational commitment was 28.14 ($SD = 4.73$), with a score range from six to 36. This implies most teacher showed a high degree of commitment to the teaching field. On average, participants scored a 48.07 ($SD = 10.33$) on motivation, with scores ranging from 15 to 90. This finding implies participants were only moderately motivated to work in ERT. A mean score of 37.47 ($SD = 4.83$) was scored on the variable self-image, with scores ranging from eight to 48. The mean score for emotions was 26.19 ($SD = 7.27$), with scores ranging from eight to 48.

A summary of all Pearson correlations between the outcome variables can be found in table 4. Noteworthy are the negative correlations between the domain emotions and the others. Namely, emotions are negatively correlated to teacher self-efficacy, $r(79) = -.25, p = .03$; job satisfaction, $r(79) = -.51, p < .001$; occupational commitment, $r(79) = -.29, p = .01$; motivation, $r(79) = -.35, p < .001$; and self-image, $r(79) = -.25, p = .02$. A reason for this is that a low score on emotions indicates a more stable PTI, whereas for the other domains this is the opposite.

Table 4

Pearson Correlation of Outcome Variables

Variables	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.
1. Teacher self-efficacy	51.93	10.56	-					
2. Job satisfaction	22.40	4.04	.31*	-				
3. Occupational Commitment	28.14	4.73	.08	.46**	-			
4. Motivation	48.07	10.33	.63**	.35**	.15	-		
5. Self-image	37.47	4.83	.37**	.32*	.37**	.22	-	
6. Emotions	26.19	7.27	-.25*	-.51**	-.29**	-.35**	-.25*	-

Note. * $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Analysis of Variance

The goal of determining the effect of expertise on the six domains of PTI was realised by performing one-way analysis of variance measures, comparing the means. Table 5 displays the outcomes of these statistical tests. There was a statistically significant difference in teacher self-efficacy scores between the expert and novice groups, $F(1, 79) = 20.33, p < .001$; with a large effect size (Cohen, 1988, pp. 278-280). Thereafter, a statistically significant difference in motivation scores for expert and novice teachers was detected, $F(1, 79) = 4.92, p = .03$; with a medium effect size. Moreover, a significant effect was found for mean scores on self-image, $F(1, 79) = 4.18, p = .04$; with a medium effect size. Finally, a statistically significant effect was found for the mean scores on the variable emotions, $F(1, 79) = 4.92, p = .03$; with a medium effect size.

Table 5

Means, Standard Deviations and One-Way ANOVA Statistics for Study Variables

Variable	Expert			Novice			<i>F</i> -ratio	η^2
	<i>M</i>	95% CI	<i>SD</i>	<i>M</i>	95% CI	<i>SD</i>		
TSE	55.57	[53.65, 57.49]	6.83	45.73	[40.95, 50.52]	12.82	20.33**	.21
JS	22.71	[21.53, 23.88]	4.17	21.87	[20.44, 23.30]	3.83	.81	.01
OC	28.25	[26.92, 29.59]	4.76	27.93	[26.15, 29.71]	4.76	.09	<.01
Mot	49.98	[47.48, 52.48]	8.88	44.83	[40.40, 49.27]	11.89	4.92*	.06
SI	38.29	[36.99, 39.60]	4.63	36.07	[34.23, 37.90]	4.91	4.18*	.05
Emo	24.78	[22.59, 26.97]	7.72	28.19	[25.93, 30.46]	6.17	4.92*	.05

Note. Total $N = 81$ ($n = 51$ for expert and $n = 30$ for novice condition). ANOVA = analysis of variance. CI = confidence intervals. TSE = Teacher Self-efficacy. JS = Job Satisfaction. OC = Occupational Commitment. Mot = Motivation. SI = Self-image. Emo = Emotions. η^2 = the proportion of explained variance.

* $p < .05$. ** $p < .01$.

Interaction Effects

Moderator analyses were performed to determine moderating effects of the variables age and teacher-tracking on the relationship between expertise and PTI. A statistically significant interaction effect was established for the age x expertise model on the outcome variable self-efficacy, $F(3, 73) = 2.73, p = .05$; with a medium-large magnitude effect, $\eta^2 = .10$. Moreover, a statistically significant interaction was concluded for the teacher-tracking x expertise model on the outcome variable occupational commitment, $F(2, 75) = 6.14, p < .01$; with a medium-large magnitude of effect, $\eta^2 = .14$. Table 6 shows pairwise comparisons for the significant interaction effects detected in this study. Interestingly, the discrepancy between novice and expert teachers between the age of 20 to 40 is more aggravated compared to the discrepancy for the 40 to > 50 years old.

Table 6

Means and Standard Deviations for Self-efficacy as a Function of Expertise x Age and for Occupational Commitment as a Function of Expertise x Teacher-tracking

Variable	Expertise	Self-Efficacy			Occupational Commitment		
Age		<i>M</i>	95% CI	<i>SD</i>	<i>M</i>	95% CI	<i>SD</i>
20-30	Novice	47.94	[43.72, 52.17]	2.12			
	Expert	58.00	[47.95, 68.05]	5.05			
30-40	Novice	28.50	[19.79, 37.21]	4.37			
	Expert	52.75	[47.72, 57.78]	2.52			
40-50	Novice	49	[42.42, 55.58]	2.52			
	Expert	56.81	[53.01, 60.61]	1.91			
> 50	Novice	50.00	[37.69, 62.31]	6.18			
	Expert	55.60	[51.10, 60.10]	2.26			
Teacher-tracking							
Vwo	Novice				32.86	[29.47, 36.24]	1.70
	Expert				27.60	[25.60, 29.60]	1.00
Havo	Novice				27.38	[24.21, 30.54]	1.59
	Expert				27.75	[25.51, 29.99]	1.12
Vmbo	Novice				25.93	[23.62, 28.25]	1.15
	Expert				29.67	[27.36, 31.98]	1.16

Note. Self-efficacy as a function of Expertise x Teacher Tracking and Occupational Commitment as a function of Expertise x Age are not represented due to non-significant effects.

Confirmatory and Exploratory Factor Analysis

To examine the six-domain questionnaire on PTI, a CFA was performed. This meant the 55 items from the questionnaire were fitted into a six-factor solution. The chi-squared test resulted in a p-value that was significant, $X^2(1415, N = 81) = 2571, p < .01$. This indicated a poor fit. Moreover, the indices confirmed the poor fit; both CFI and TLI yielded respectively .58 and .56, whereas the RMSEA was .10. The internal consistency was good ($\alpha = .85$). The six factors accounted for .38 of the total variance, which is poor. The standardised factor loadings of the questionnaire are represented in table 7.

Thereafter, an EFA determined the actual number of underlying constructs (Yong & Pearce, 2013). The nine-factor model test showed a good fit. The chi-squared test was non-significant, $X^2(1026, N = 81) = 1100.80, p = .52$. Besides, the fit indices showed great results, with TLI and RMSEA yielding respectively .90 and .03. To enhance interpretation of the nine-factor model, factors were rotated via oblique rotation. However, the EFA did not determine a clear structure. For example item commitment 3 ‘I enjoy emergency remote teaching’ loaded on factor 2 ($\lambda = .31$) and factor 4 ($\lambda = .41$).

Table 7

Standardised Factor Loadings Derived from Confirmatory Factor Analysis

Item	Factor Loadings					
	1	2	3	4	5	6
TSE1	.82					
TSE2	.74					
TSE3	.76					
TSE4	.72					
TSE5	.79					
TSE6	.85					
TSE7	.83					
TSE8	.68					
TSE9	.81					
TSE10	.61					
TSE11	.64					
TSE12	.43					

Item	Factor Loadings					
	1	2	3	4	5	6
Job1		.77				
Job2		.92				
Job3		.36				
Job4		.81				
Job5		.74				
Com1			.39			
Com2			-.09			
Com3			.57			
Com4			.80			
Com5			.88			
Com6			.71			
Com7			.65			
Mot1				.80		
Mot2				.71		
Mot3				.40		
Mot4				.52		
Mot5				.48		
Mot6				.49		
Mot7				.41		
Mot8				.51		
Mot9				-.21		
Mot10				.36		
Mot11				.36		
Mot12				.57		
Mot13				.39		
Mot14				.52		
Mot15				.66		
Self1					.66	
Self2					.64	
Self3					.69	
Self4					.11	
Self5					.51	
Self6					.72	
Self7					.36	
Self8					.56	
Emo1						.81
Emo2						.83
Emo3						.87
Emo4						.57
Emo5						.71
Emo6						.38
Emo7						.60
Emo8						.42

Note. Factor loadings above .30 are bold. TSE = Teacher Self-efficacy. Job = Job Satisfaction.

Com = Occupational Commitment. Mot = Motivation. Self = Self-image. Emo = Emotions.

Qualitative Findings

The interviews provided a rich and discursive perspective of teachers' sense of their professional identity during ERT; complementing the previously collected questionnaire results. The context of ERT and its implications were discussed in more detail through participants' experiences, which would have been impossible through merely analysing the questionnaire data. The most relevant findings are discussed in the following two sections that respectively discuss overall differences and similarities between expert and novice teacher(s).

Overall Differences

Regarding self-efficacy, the expert teacher (Gerard) felt confident and proficient to impact the way in which the ERT environment is run. He regards himself an effective teacher, despite being restricted to ERT. Marloes on the other hand, came across more disoriented. She frequently mentioned the lack of grip on the situations that she encounters in her daily teaching. Interestingly, both teachers teach in the same context, namely from their home desk. However, Gerard oozed more confidence while continuously emphasising his strong points. While Marloes did the opposite, mainly mentioning negative situations and a dearth of control.

As for self-image, Gerard did not view himself a different teacher in ERT. He attributed this to the consistency in his teaching, which students have become familiar with over the past few years. Gerard stated 'If you are a good teacher in the classroom, and you have your pedagogical story in order, then it does not matter that you then switch to digital'. Niels struggled more when asked about his self-image. He found that in a regular classroom environment, he spent much of his lesson time solidifying good relationships with students. This, he was not able to do in ERT, and so regarded himself as a completely different teacher.

Regarding occupational commitment, two tendencies were identified. Joske and Niels were adamant to remain a teacher, whereas Gerard, Marloes, and Hamza were tentative. It

seemed the latter trio focussed more on the hampering factors in ERT, such as the transition from an active to sedentary job. Whereas the former duo were confident that ERT was only temporary.

Concerning motivation, Marloes and Hamza appeared susceptible to the changing context of ERT, whereas others remained more rational. Discouraging elements of ERT that were mentioned multiple times were: the lack of interaction (both colleague and student), the isolation at home, and the absence of informal talks with students. Some participants were more intrinsically motivated than others. For instance, Joske stated ‘So, I actually wanted to do so much myself to get a good picture of the students. While others (colleagues) were more like “This is just the situation, I accept it” ’.

None of the participants mentioned that their overall level of job satisfaction is low in the context of ERT. This could be due to the fact all participants tried to make the best out of a bad situation. They somehow deal with this way of teaching, because there is no alternative and they all see themselves as professionals who need to cope with the current situation.

Overall Similarities

Finally, all participants felt they were becoming increasingly frustrated with the additional, mostly administrative, tasks inherent to ERT. They rather solely focus on teaching. In terms of energy, all participants mentioned increased mental requirements, but a decrease in physical expenditure. The following quote from Joske accurately sums up the morale ‘Online teaching consumes less energy, however, regular teaching gives more energy’.

Discussion

The present study investigated the relationship between the domains of PTI and expertise levels among Dutch secondary education teachers, incorporating the moderator variables age and teacher-tracking. Besides, a 55-item questionnaire was constructed to measure the six

domains. The results demonstrate that scores on four PTI domains (i.e., self-efficacy, motivation, self-image, and emotions) are significantly different between novice and expert teachers. Besides, age significantly moderates the relationship between expertise and self-efficacy, while teacher-tracking significantly moderates the relationship between expertise and occupational commitment. The six-domain questionnaire shows poor psychometric qualities. The following sections discuss the most relevant findings more elaborately.

Self-efficacy and Expertise

Regarding research question one, the results reveal teacher self-efficacy among expert teachers is significantly higher compared to novice teachers. The qualitative data show the expert teacher effortlessly extrapolates regular teaching experiences to ERT. Instead, novice teachers struggle and radiate a sense of scepticism towards their own teaching pedagogies; feeling insecure about the aspects of ERT they cannot influence. This result is in line with previous research (Hong, 2010; Tschannen-Moran & Woolfolk Hoy, 2001). Hong found early-career teachers less confident in their ability to explain concepts and to manage a group of students. This is where the context of ERT emerges, whereby it seems only logical to assume that these common early-career pitfalls recognised by Hong, have exacerbated because of the restrictive interaction possibilities in ERT (Kim & Asbury, 2020). Therefore, the results of this study provide further evidence of the notion that teacher self-efficacy is related to experience and contextual factors, as posed by Tschannen-Moran and Woolfolk-Hoy. The distinctive feature of the present study is that it corroborated these earlier works in an ERT setting, which seems to aggravate the existing gap in teacher-self efficacy between novice and expert teachers.

Concerning research question two, the results reveal age moderates the relationship between expertise and teacher self-efficacy. Precisely, teachers in their early adulthood (20 to 40 years old) struggle with a low sense of self-efficacy, whereas the discrepancy between

novice and experts decreases once teachers enter their middle adulthood (40 to 60 years old). A possible explanation for this finding is that older teachers, despite still being novice teachers, have gained confidence in their own ways of working through previous jobs. There is empirical work that supports the notion that these second-career teachers show more self-efficacy (e.g., Weinmann-Lutz et al., 2006). However, caution based on this interaction effect is warranted, since age a quasi-moderator (Sharma et al., 1981). As opposed to a pure moderator, a quasi-moderator is also independently related to the outcome variable, making the interaction effect less discerning.

Regarding research question three, teacher-tracking does not significantly influence the relationship between expertise and teacher self-efficacy. So, regardless of the level of students they teach, teachers feel a sense of self-efficacy or not. This finding is not haphazard, because previous research by Hargreaves (1967) describes how teacher-tracking affects teachers, which is through classroom and student-teacher interaction. Both levels of classroom and student-teacher interaction are clearly less emergent, since ERT is mediated through technology (Jones & Kessler, 2020).

Self-image and Expertise

Additionally, the results indicate that self-image among expert teachers is significantly higher compared to novice teachers. So, there is a larger gap between novice teachers' current view of themselves and their ideal-selves as a teacher (Rogers, 1959). This finding is alarming since a low sense of self-image hampers teachers' professionalisation and the way they teach (Fransson et al., 2019). The quantitative data show novice teachers have a hard time regarding themselves as members of a community of teachers. This is in line with earlier work by Beijgaard et al. (2000), who showed that self-image changes over time and is bound to context. Thus, the proposition that novice teachers struggle viewing themselves as ideal teachers does

not seem haphazard. However, this would imply that expert teachers struggle with the contextual changes too.

Hence what is compelling is that whereas self-image among novice teachers appears to change alongside the shift to the ERT context, the interview data reveal self-image for the expert teacher has remained stable throughout the transition to ERT. This contradicts previous works on self-image (e.g., Fransson et al., 2019), who found that when teachers were forced to work in a new environment, their previous experiences were nullified. A possible explanation for this study's contradictory finding lies at the fact that, despite the contextual difference between regular teaching and ERT, expert teachers disregard these and focus on the factors that have remained similar. This suggests a more positive coping strategy employed by expert teachers as opposed to novice teachers. Furthermore, neither the variable age nor teacher-tracking significantly moderates the relationship between expertise and self-image.

Emotions and Professional Teacher Identity

The quantitative data reveal novice teachers are more emotional than expert teachers. However, more important is that the present study aimed to comprehend the role of emotions in PTI. The qualitative data reveal patterns that indicate emotions indeed play a role in PTI, regardless of teachers' level of expertise. This was expected, since emotions play an inseparable role in teaching and learning (King & Chen, 2019). According to Zembylas (2005), the exploration of emotions unfolds possibilities for enhanced self-knowledge, which in turn provides space for development. All five teachers that were interviewed spoke candidly about their emotional states. This observation is in line with what King and Chen call the individualist culture in Western society, whereby the emphasis is on the self and maintaining independence from others. To this end, it is important for individuals to speak openly about topics such as emotions to develop. Thus, it seems that for emotions not to impede the development of a PTI, they need to be discussed with others. The need for ventilation seems especially urgent in

Western societies (King & Chen, 2019), which applies to the Dutch sample in the present study.

The Professional Teacher Identity Questionnaire

The present study's data do not verify the anticipated six-domain structure. In fact, the exploratory factor analysis favours a 9-factor structure. A possible explanation for this contradictory finding is this study disregarded the subscales from the original scales. For instance, the scale on motivation, based on the value-expectancy theory (Wigfield & Eccles, 2000), distinguished between three factors relating to motivation (i.e., expectancy, perceived-value, and perceived-cost. This also applied for the scales self-efficacy (3 subscales), occupational commitment (2 subscales) and emotions (2 subscales). It appeared numerous items loaded on more than one factor, which means it is impossible to determine a clear structure based on the 9 factors.

Concurrently, some of the items, despite being classified into a different subscale, are nearly identical. For example, 'I find real enjoyment in my work' and 'I enjoy emergency remote teaching' were linked to job satisfaction and occupational commitment respectively. An explanation for this nearly typical question for the domains of occupational commitment and job satisfaction derives from the dearth of consensus on how commitment and satisfaction relate to each other. Some are absolute, such as Eid and Larsen (2008), who clearly distinguish between occupational commitment and job satisfaction as two separate entities. Thien et al. (2014) declare commitment as one of the influential factors of job satisfaction, though in the same manuscript occupational commitment is mentioned more ambiguously being associated with job satisfaction. Contrarily, Canrinus et al. (2011) determined that both relational and salary job satisfaction influence occupational commitment. This implies that forms of satisfaction are conditional for occupational commitment. In closing, there is evidence to believe

that certain PTI domains intercorrelate (Canrinus et al., 2011, Thiem et al., 2014). This makes for the unambiguous 9-factor structure that was determined by the EFA.

Limitations

A limitation of the present study is it did not entirely grasp the intercorrelating relationships between the domains of PTI, such as (in)direct effects. Such outcomes would have yielded more in-depth insights. It can be assumed there are intercorrelating patterns based on previous research (e.g., Berger & Lê Van, 2019), but also because this study's data showed tendencies. For instance, the correlations revealed there are indeed intercorrelating relationships between the domains. This makes the limitation an opportunity for any future researcher looking to unravel the complicated concept of PTI.

A second limitation is the present study failed to accomplish a satisfactory number of participants to perform the statistical analyses. The results of the G Power Analysis showed that for satisfactory power to be achieved, more participants were needed for the interaction effects and factor analyses (Mundfrom et al., 2005). Moreover, a larger number of participants would have made it possible to distinguish between more levels of expertise. This study was limited to the distinction between novice and expert teachers, whereas other studies (e.g., Al-Ahdal & Al-Awaid, 2014) included multiple levels of expertise, also in line with Berliner's (1988) model on teacher development.

A final limitation is that this study speaks about high and low levels of PTI, with high being better than low. This classification does not do justice to the complexity of the concept, whereby the shaping of is as, or even more important. The reason for this limitation lies in the fact that PTI was measured at one point in time. In the literature review, words such as 'shaping' and 'developing' were mentioned multiple times, which the present study failed to capture.

Future Research

A possibility for expanding the present study in future research lies in increasing the number of expertise levels to make more specific distinctions in their relationship with PTI. One way of doing so, similar to this research, is based on years of experience (e.g., Berliner, 1988). However, other methods such as criterion-based expertise could be employed (e.g., Moallem, 1998). To achieve this, a higher number of participants is desirable.

A second possibility lies in research that employs a longitudinal approach, discerning both within and between teacher populations. This type of study makes it possible to look at the process of developing and shaping a PTI, instead of being limited to measures at one point in time. For instance, there is currently a shift from ERT to more hybrid types of education in the Netherlands. It would be valuable to capture and assess such transitions, which can yield new insights into how PTI is developed. Contextual factors, such as specific features of ERT in this study, ought to be considered. To this end, it is recommended to work with both quantitative as well as qualitative data to get a better sense of how identity is shaped and what factors influence this.

Practical Implications

Despite its limitations, the present study has yielded various valuable insights into secondary school teachers' PTI. Novice teachers, as opposed to expert teachers, struggle more with certain domain of PTI amid ERT. For this reason, further support needs to be provided to novice teachers. This could be done by speaking to them, since the interviews yielded rich and in-depth narratives of how teachers felt about ERT in combination with their PTI. Moreover, since expert teachers struggle less, as was indicated by the expert teacher interview and questionnaire data, maybe this can solve the issue. Namely by assigning each novice teacher a personal mentor, which is a common method in teacher support (Clandinin et al., 2015).

Conclusion

Taking together, PTI is a prevalent concept in teacher education research and has been the centre of a plethora of studies over the past two decades. The present mixed-method study showed four out of six domains of PTI significantly differ between novice and expert teachers in times of ERT. This result implies novice teachers are experiencing a hard time shaping their PTI, because they score lower on the domains, also known as indicators. Therefore, teacher support needs to be intensified. If schools fail to do so, there is a serious risk of these teachers leaving the field, adding to the emerging problem of teacher shortages (Bolhuis et al., 2016). Furthermore, the proposed six-domain structure of PTI showed poor psychometric qualities. Nevertheless, this should not prevent future researchers from using the instrument since this was the first time it was employed. Therefore, there is much room for advancement through preferably larger sample sizes and a critical revision of some of the items.

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Appendix A – Information Letter

Title of the study: The Role of Expertise in Relation to Professional Teacher Identity: a Study amid Emergency Remote Teaching in the Netherlands

Document version date: 14/01/2020

Information letter

Dear participant,

With this letter, we would like you to partake in this research paper on teachers' professional identity. At the time you receive this letter you are probably (still) teaching from home, which must have become really challenging. However, amid such troubled times, doing research is more important than ever. With this study we aim to gain insight into the professional identity of secondary teachers during the Covid-19 pandemic. The following section briefly explains the background of the study and discusses the research questions. Thereafter, some procedural information is shared.

Study background

In the wake of the current Covid-19 pandemic, being a teacher is even more taxing than it was before. Having to switch from physical to online teaching is undoubtedly a very challenging task. Therefore the aim of this study is to shed light upon the perspective of secondary schools teachers. More specifically, I am interested in how the transition to online education has shaped your professional identity. The leading research question states: *'How is the current way of emergency remote teaching influencing the professional teacher identity among Dutch secondary school teachers?'* Besides, we aim to investigate the relationship between professional identity and expertise/experience. In other words *'Does the shift to online education have a bigger impact on less experienced teachers.'* Hopefully finding answers to these questions will lead to advice that can be used by school management teams and/or policymakers.

Confidentiality of data processing

The results of this study (and so data) will be made public, through the repository of Utrecht University. This means that results could be used by other researchers, to the end of a follow-up study for instance. However, the study will request only personal data which we consider relevant in the light of this study (for example, we ask you to share your experience in the field of teaching). We need this data in order to be able to answer the research question

properly or to be able to contact you for follow-up research. This personal data will be stored on a different computer than the research data itself (the so-called raw data). The computer on which your personal details is stored is secured to the highest standards, and only researchers involved will have access to this data. The data itself will also be protected by a security code. Your data will be stored for at least 10 years. This is in accordance with the guidelines provided by the VSNU Association of Universities in the Netherlands. Please refer to the website of the Authority for Personal Data: <https://autoriteitpersoonsgegevens.nl/nl/onderwerpen/avg-europese-privacywetgeving>, for more information about privacy.

Voluntary participation

Participation in this study is voluntary. You can end your participation in the study at any time, without any explanation and without any negative consequences. If you end your participation, we will use the data collected up to that point, unless you explicitly inform us otherwise. Before you can start with the questionnaire, we ask you to sign the informed consent form (which is an online form too).

Independent contact and complaints officer

If you have any questions or comments about the study, please contact Drs. Despoina Georgiou.

If you have an official complaint about the study, you can send an email to the complaints officer at klachtenfunctionaris-fetcsocwet@uu.nl.

Additional information regarding the study

If you would like to gain additional information, please contact me through email: b.ap-pel@students.uu.nl. Note that this research is conducted in light of a student dissertation for Utrecht University, thus making it a student research.

Kind regards,

Brendan Appel (Postgraduate student in Educational Sciences)

Appendix B – Informed Consent Form

Title of the study: The Role of Expertise in Relation to Professional Teacher Identity: a Study amid Emergency Remote Teaching in the Netherlands

Document version date: 14/01/2020

I volunteer to participate in this research project conducted by Brendan Appel from Utrecht University. I understand that the project is designed to gather information about emergency remote teaching due to COVID-19.

I understand that this research study has been reviewed and approved by the Faculty Ethics Review Board (FERB) for Studies Involving Human Subjects: Behavioral Sciences Committee at the Utrecht University. For research problems or questions regarding subjects, the Institutional Review Board may be contacted through klachtenfunctionarisfetsocwet@uu.nl

I have been fully informed, through the information letter, about the study's purpose and the manner in which the data will be handled.

The participant may withdraw from the study without any explanation or consequences at any given time.

Name:

Signature:

Appendix C – PTI Questionnaire

Questionnaire Professional Teacher Identity Including Reliability and Construct Validity

Scores

	α	λ	Original Scale
<i>Construct 1: Self-image</i>	.94	-	
1. I am committed and dedicated to the teaching profession	.83		Abu-Alruz & Khasawneh, (2013)
2. I have a strong passion for teaching	.81		
3. I enjoy sharing my ideas and experiences with other teachers in my school	.81		
4. I can only see myself as a teacher working in a secondary school setting	.79		
5. I enjoy the social recognition I get as a teacher	.77		
6. My students and colleagues regard me as an effective teacher	.77		
7. I promote harmonious and collaborative staff relationships to enhance the quality of work	.77		
8. I feel part of a community of teachers	.76		
<i>Construct 2: Self-efficacy</i>	-	-	
<i>Sub-construct: instruction</i>	.86	-	
9. I am able to use a variety of assessment strategies	.73		Tschannen-Moran &
10. I am able to provide an alternative explanation or example when students are confused	.75		Woolfolk Hoy, (2001)
11. I am able to craft good questions for students	.63		

12. I am able to implement alternative strategies in the classroom	.73	
<i>Sub-construct: management</i>	.86	-
13. I am able to control disruptive behaviour in the classroom	.83	
14. I am able to get children to follow classroom rules	.66	
15. I am able to calm a student who is disruptive or noisy	.63	
16. I am able to establish a classroom management system with each group of students	.61	
<i>Sub-construct: engagement</i>	.81	-
17. I am able to get students to believe they can do well in schoolwork	.75	
18. I am able to help my students value learning	.69	
19. I am able to motivate students who show low interest in schoolwork	.64	
20. I am able to assist families in helping their children do well in school	.62	
<i>Construct 3: Job Satisfaction</i>	.87	-
21. I feel fairly satisfied with my present job	.69	Brayfield & Rothe,
22. Most days I am enthusiastic about my job	.92	(1951)
23. Each day at work seems like it never ends	.57	
24. I find real enjoyment in my work	.	
25. I consider my job to be rather unpleasant	.73	
<i>Construct 4: Occupational Commitment</i>	-	-

<i>Sub-construct: Commitment to Teaching</i>	.73	-
26. I used to be more ambitious about my work than I am now	.63	Thien et al. (2014)
27. Sometimes I lie awake at night thinking ahead to the next day's work	.61	
28. I enjoy emergency remote teaching	.72	
<i>Sub-construct: Commitment to Profession</i>	.71	-
29. If I could get a job different from being a teacher and paying the same amount, I would take it.	.77	
30. If I could do it all over again, I would not choose to work in the teaching profession	.75	
31. I am disappointed that I ever entered the teaching profession	.72	
32. The best decision that I have ever made was to become a teacher	.68	
<i>Construct 5: Motivation</i>	-	-
<i>Sub-construct: Expectancy</i>	.79	-
33. I believe I can implement emergency remote teaching successfully	.72	Abrami et al. (2004)
34. I understand emergency remote teaching well enough to implement it successfully	.72	
35. The amount of emergency remote teaching training I have received has prepared me to implement it successfully	.73	

36. My training in emergency remote teaching has NOT been practical enough for me to implement it successfully	.76	
<i>Sub-construct: Perceived-value</i>	.80	-
37. Emergency remote teaching enhances the learning of low-ability students	.77	
38. Emergency remote teaching enhances the learning of students of all ability-levels	.77	
39. Emergency remote teaching narrows the gap between high-achieving and low-achieving students	.75	
40. Emergency remote teaching better promotes students' problem solving skills than whole class instruction	.64	
<i>Sub-construct: Perceived-cost</i>	.79	-
41. The costs of implementing emergency remote teaching outweigh its benefits	.50	
42. Implementing emergency remote teaching takes too much preparation time	.64	
43. Implementing emergency remote teaching takes too much class time to cover the content I need to teach	.72	
44. Engaging in emergency remote teaching interferes with students' academic progress	.71	
45. If I use emergency remote teaching, the students tend to get distracted.	.69	

46. Using emergency remote teaching is likely to create too many disciplinary problems among my students	.61	
47. If I use emergency remote teaching, my classroom is too noisy	.65	
<hr/> <i>Construct 6: Emotions</i>		- -
<hr/> <i>Sub-construct: Strain</i>		.78 -
48. I feel emotionally drained by my work	.87	Maslach et al. (2008)
49. I feel used up at the end of the day	.86	
50. I feel 'burned out' from my work	.69	
51. I feel I am working too hard in my job	.49	
52. I feel fatigued when I have to get up in the morning to face another day on the job	.44	
<hr/> <i>Sub-construct: Frustration</i>		.75 -
53. Working with students directly puts too much stress on me	.67	
54. I feel frustrated about my job	.54	
55. Working with people all day is really a strain for me	.44	
<hr/>		
<i>Note.</i> α = Cronbach's Alpha derived from the original scales. λ = Factor loadings derived from the original scales		

Appendix D – Interview Questions

English Interview Questions for Professional Teacher Identity

Introductory Questions / Demographics

How old are you?

How long have you been working as a teacher?

How long have you been working as a teacher for this school?

What subject(s) do you teach?

How many hours do you teach weekly?

In what city/village/region do you teach?

Self-image

How would you describe yourself as a teacher, and how has this changed during the shift to emergency remote teaching?

Motivation

How has the way you view / experience emergency remote teaching affected your level of motivation?

What are features of emergency remote teaching that (de)motivate you?

Occupational Commitment

How has the way you are committed to the teaching profession changed over the period of transitioning to emergency remote teaching?

Self-efficacy

How has the way in which you provide instruction changed as opposed to regular (physical teaching?)

How do you regulate student behaviour in emergency remote teaching?

Job Satisfaction

How well are you satisfied with the current way of working?

Emotions

Have you felt more frustrated recently? If so, could you give an example?

How has delivering emergency remote teaching affected your energy levels?

Dutch Interview Questions for Professional Teacher Identity

Introductie

Hoe lang werk je als docent in het onderwijs?

Hoe lang werk je voor de school waar je nu werkt?

Welk vak geef je?

Hoeveel uur per week geef je les? En hoe lang duren de uren?

In welke regio geef je les?

Self-image

Hoe zou jij jezelf omschrijven als docent (ben je bijvoorbeeld een echte pedagoog, een didacticus)?

In hoeverre kan je dit imago voortzetten tijdens het geven van onlineonderwijs? Zie je dit nu anders bijvoorbeeld.

Motivation

Wat zijn aspecten van het onlineonderwijs die jou (de)motiveren?

Hoe weeg je de kosten tegen de baten af? Als er al baten zijn in jouw ogen?

Occupational Commitment

Hoe heeft het verzorgen van onlineonderwijs impact gehad op jouw commitment tegenover het docentschap? Heb jij bijvoorbeeld de neiging om een andere baan te kiezen.

Self-efficacy

Hoe is jouw opbouw van de lessen verandert t.o.v. fysiek onderwijs (zet je andere methode in, bijvoorbeeld meer filmpjes/kortere lessen oid?)

Hoe zou je jouw klassenmanagement beschrijven? Hoe ga je om met grensoverschrijdend gedrag tijdens een online les?

Job Satisfaction

Hoe heeft deze manier van werken invloed op jouw baantevredenheid? Lig je bijvoorbeeld 's nachts vaak wakker, of ga je met tegenzin naar je werk?

Emotions

Heb je het idee dat je vaker gefrustreerd bent?

In hoeverre kost het verzorgen van online onderwijs jou meer of minder energie?