Variance of Teacher Identity in First-Year School Teachers: The Roles of Gender, Taught Subject, and Grade Level Taught

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Abstract

Although the antecedents of teacher identity have been well investigated over decades, the role of demographic variables in teacher identity variance has received relatively little research attention. The study explored how teacher identity (grounded in a four-indicator model comprising occupational commitment, teacher self-efficacy, job satisfaction, and motivation to teach) might differ on three key demographics: gender, taught subject, and grade level taught. To reduce possible noise from other demographic constructs (e.g., age, tenure, and job level), participants were recruited from a cohort of 464 first-year school teachers in Mainland China. Using multiple analytic techniques, findings indicated that female teachers were less committed to the teaching occupation than were male teachers. Those teaching social sciences in primary schools showed lower levels of occupational commitment and teacher self-efficacy than did those teaching sciences at secondary schools. Implications and suggestions are provided.

Keywords: Teacher identity, Gender, Taught subject, Grade level taught

Introduction

Teacher identity is teachers' self-awareness of who they are as professionals in the teaching occupation (Timoštšuk & Ugaste, 2010). Researchers argue that teacher identity stands at the heart of the teaching profession and makes a difference in beginning teachers' career development (Hong, 2010; Sachs, 2005). Much research (e.g., Day et al., 2007; Robinson & McMillan, 2006; Stenhouse, 1975) has thus mainly focused on how teacher identity is held accountable for outcome variables (e.g., curriculum reforms, student achievement, and policy implementation). Although a handful of studies (e.g., Beijaard et al., 2000; Kelchtermans, 2005; Tsui, 2007) explore either internal or external antecedents of teacher identity, such as emotions and personal life stories as internal constructs or learning environment and school context as external constructs, the role of demographic variables in teacher identity is still relatively under-researched.

Some prior research (e.g., Aftab & Khatoon, 2012; Sadeghi et al., 2021; Yucel & Bektas, 2012) has recognized demographic constructs (e.g., age, gender, tenure, and job level) as potential predictors of job satisfaction, organizational commitment, or teaching agency. For example, Yucel and Bektas (2012) found that teachers' age moderated the relationship between their job satisfaction and organizational commitment. Mason and Chik (2020) observed that language teachers' gender identities interacted with their age identities, thus shaping their teacher identities. However, given that interpretations and conceptualizations of teacher identity vary in previous studies, there is still a dearth of comprehensive understanding of teacher identity and its variance grounded in important demographic variables.

The teaching profession is a female-dominated field, particularly at primary and secondary education levels (Basu & Kundu, 2022). Also, as noted by some researchers (Helms, 1998), secondary school teachers know

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their subject matter better than primary teachers, who do so with the children. The current study therefore aimed to explore whether and how teacher identity might differ based on three key demographics, i.e., gender, taught subject, and grade level taught. Such knowledge is important simply because school-level policy and guidance could be provided catering to the specifics of different teacher groups. Among others, early-career teachers (15 years of teaching experience) warrant first aid given that they are faced with extremely harsh situations of sink or swim (Varah et al., 1986). To minimize the possible effect of other confounding demographic variables like age, tenure, or job level, this study surveyed a cohort of nearly 500 first-year school teachers in the Chinese Mainland using self-reported data and multiple analytic strategies.

Literature Review

Conceptualization of teacher identity

Research on teacher identity is fairly recent, spanning merely two decades (Cox et al., 2012). Conceptualizations of teacher identity in the literature generally adopt three lenses: a) the ontological lens; b) the lens of professionalism; and c) the lens of interactionism.

Following the ontological lens, the role of individual differences in teacher identity receives attention. Kelchtermans (1993) compares teacher identity to the professional self, which comprises five components: "self-image", "self-esteem", "job motivation", "task perception", and "future perspective" (pp. 449–450). Cooper and Olson (1996) assert that teacher identity arises from teachers' personal knowledge of pupils and their own constructions of knowledge. Echoing Cooper and Olsen's (1996) point, Coldron and Smith (1999) purport that being a teacher is a matter of being seen as a teacher by himself or herself and by others" (p. 712). Obviously, conceptualizations in this line allow for teachers' inner traits and self-construction but overlook teachers' professional aspects (e.g., class management, teaching methods, and practical expertise).

Through the lens of professionalism, the term *teachers' professional identity* is favored (Anha, 2013; Beijaard et al., 2004). Tickle (2000) proposes the term "professional characteristics" as a substitute for teacher identity. Beijaard (1995) categories teacher identity into three parts: subject matter, relationship with pupils, and self-conception of the teaching role. Some other researchers approach this professional knowledge from a personal angle. For example, Clandinin (1992) argues that teachers' professional knowledge survived a process of construction and reconstruction as they "live out... [their] stories and retell and relive them through processes of reflection" (p. 125). However, the issue of how professional identity relates to personal practical knowledge is left unaddressed.

Through the interactionist lens, conceptualizations of teacher identity are liable to relate individual differences to social factors. Lasky (2005) surmises that teacher identity is a self-definition of commitment, knowledge, values, and beliefs, the evolution of which is apt to be shaped by school context, curriculum change, and politics. In a supportive tone, Menter (2010) notes that teacher identity should be looked at from both sociological and psychological perspectives. Day (2011) also contends that a stabilized sense of professional identity relates to teachers' abilities in terms of emotional management. Noticeably, though personal and contextual factors intertwine in this string, professional aspects of teachers, to some degree, find no place in these conceptualizations.

Synthesizing conceptualizations through the three aforementioned lenses, the current study adopted Dworet's (1996) conceptualization that teacher identity is "different views that individuals have about themselves as teachers in general and how [these views change] over time and in different contexts" (p. 101). This conceptualization takes into account teachers' inner affiliation with the teaching profession (self-sameness), differentiation from non-teachers (self-otherness), and fluctuations of self-identification as a result of contextual and temporal changes.

A four-indicator model of teacher identity

As suggested in the literature, teacher identity is so complex and varied that an all-inclusive measure is unlikely. Alternatively, a vast body of research has examined teacher identity as a composite of different selected components, such as teacher beliefs, cognitive knowledge, agency, and teacher role (Burn, 2007; Graham & Phelps, 2003). To profile teacher identity in a comprehensive landscape, Canrinus et al. (2012) conceptualize a model with four principal constructs: teacher self-efficacy, occupational commitment, job satisfaction, and motivation to teach. The current study adopted this model of teacher identity for three reasons.

To begin with, this study looked at teacher identity as a composite construct entailing personal, professional, and contextual dimensions. This compound comes to terms with Canrinus and colleagues' (2012) claim that these four aforementioned indicators are "constructs currently under influence of both the person and context in which the teachers work" (p. 116). Second, Canrinus et al.'s (2012) choice of these four indicators is in consonance with Day's (2002) finding. Through a meta-analysis of research on teacher identity studies over two decades, Day (2002) found that "to understand teachers' professionalism, it is necessary to take account of the importance to these of self-efficacy, the level of motivation, job satisfaction, and commitment, and the relationship between these and effectiveness" (p. 684). Third, these four indicators have been intensively studied separately or in diverse combinations across decades, relating to teacher behaviors, teachers' professional development, students' academic achievements, and teacher burnout (Badri et al., 2013; Federici & Skaalvik, 2012).

Li (2016) later validated the robustness and internal consistency of this four-indicator model. Recently, Li et al. (2022) verified the measurement invariance of this model over time. In the current study, teacher self-efficacy is conceptualized as teachers' perceived competence in terms of executing and managing classroom instructions, dealing with various relationships, and getting involved in making decisions. Friedman and Kass's (2002) theorization was adopted, which taps into teacher self-efficacy from three aspects: relationship self-efficacy, classroom self-efficacy, and leadership self-efficacy. For occupational commitment, this study followed one of the best-established theoretical models, i.e., the three-component model proposed by Meyer and colleagues (1991; 1993): normative commitment, affective commitment, and continuance commitment. Normative commitment refers to a sense of accountability and obligation to an organization. Affective commitment delineates "the employee's emotional attachment to, identification with, and involvement in" (1991, p. 67) an occupation. Continuance commitment concerns a weighing of opportunity cost (the benefit lost due to the choice of an alternate) and sunk cost (the cost that has been paid and cannot be recovered) if leaving an organization. As regards job satisfaction, Hoppock's (1935) classical definition was followed, which understands it as "any combination of psychological, physiological, and environmental circumstances that causes a person truthfully to say, 'I am satisfied with my job'" (p. 47). This definition highlights the interactions between individual teachers and the work context (Bakker et al., 2003). Finally, motivation was referred to as a compound of interrelated emotions and beliefs that invoke, concentrate, and maintain one's engagement in an activity. This conceptualization, on the one hand, recognizes motivation as a mindset or attitude (Evans, 1998), and on the other hand, demonstrates that motivation is a continuum of engagement varying in depth and duration (Sinclair et al., 2006).

Gender differences in teacher identity

Gender differences have been found in relation to almost all the four indicators of teacher identity conceptualized in the current study. However, the findings are not consistent. For example, Aydin et al. (2011) and (2012) found that male teachers scored higher in both overall organizational commitment and job satisfaction. Their studies carried out meta-analytic strategies on these between 2005 and 2009, involving over 1,800 teachers in Turkey. Day et al. (2006) also observed that in England, male teachers' overall view of their continuing professional development (a construct of teacher self-efficacy) was minimally more positive than their female counterparts. Similarly, Klassen and Chiu's (2010) study found that female teachers perceived lower classroom management self-efficacy than did their male counterparts. Their study sampled 1,430 practicing teachers in Canada. Strun and Murray's (2019) study in the USA concluded that male teachers were superior to females in their abilities to lead and manage classroom teaching. However, Sloane and Williams' (2000) study in the UK indicated that women teachers were more satisfied with their teaching jobs than men, in spite of lower pay. In Çoğaltay's (2015) meta-analysis, which involved 30 studies on 11,724 teachers in Turkey, teachers' occupational commitment was not found to differ by gender. In Moses et al.'s (2016) study, Tanzanian female student-teachers reported significantly stronger commitment to teaching than did their male counterparts. These inconsistent findings in the literature warrant further investigation into the role of gender in teacher identity.

Disciplinary differences in teacher identity

Little is reported on subject-specific teacher identity differences in the literature. Findings are inconsistent, moreover. For example, Joolideh and Yshodhara's (2009) study revealed no significant taught-subject difference in organizational commitment among high school teachers in India and Iran. However, Busch et al. (1998) found that in Norway, participants working in the science field (i.e., engineering) had significantly lower occupational commitment than those in the social sciences field (i.e., nursing and teacher education). They further observed that those in the nursing program were significantly more satisfied with their jobs than their counterparts in the teacher education program, while those in the teacher education and nursing programs scored

significantly higher in teacher-student self-efficacy and occupational commitment than participants in the engineering programs. Contrary to Busch et al.'s (1998) finding, Gökyer (2018) found that in Turkey, high school science teachers exhibited higher levels of commitment in comparison to their counterparts teaching social sciences. Moreover, prior studies are either small-scale case studies or have mainly focused on research practice differences in different disciplines while practically overlooking teachers' perceptions of their own teaching performance and motivation to teach (Neumann, 2001; Nevgi et al., 2004).

Grade level differences in teacher identity

The role of grade level taught (e.g., primary or secondary school levels) in teacher identity has not received much research attention, either. Of the limited research in the literature, findings are still inconsistent. For example, in Hustler et al.'s (2003) study in England, primary school teachers reported having a bigger say in participating in setting the school agenda (i.e., leadership self-efficacy) than did those teaching in secondary school. Likewise, Day et al.'s (2006) study indicated that British primary school teachers exhibited higher efficacy rates than secondary school teachers in terms of continuing professional development. Differently, Marston's study in the USA (2010) revealed that, in comparison to university academics, primary school teachers tended to have a lower level of perceived rapport with administrators (i.e., leadership and relationship self-efficacies). Marston did not further find a significant difference in job satisfaction among three levels of teachers (i.e., elementary, high school, and college professors). However, existing studies in the literature are limited in number and do not compare across elementary, junior high, and senior high school levels.

Methods

Ethical considerations

The current was permitted by the Human Research Ethics Committee for Non-Clinical Faculties at the researchers' university. All the participants were aged above 18. Their rights were legitimized through their endorsement on a consent form that provided thorough knowledge about their benefits and rights upon participation, as well as about the intent and duration of the present research. Moreover, the participants were reassured about safety concerns (e.g., how the inventories would be stored and how their responses would be kept confidential). Finally, it was also articulated that participation in the current study was totally voluntary; as such, the participants' decision to withdraw at any time would have no consequence at all.

Participants and procedures

Data were collected via email among 738 first-year school teachers in Mainland China. A total of 464 (122 males and 342 females; aged 22.74 ± .65 years) returned questionnaires were found valid. They finished their first year of teaching in over 400 different schools. Among them, 297 (64%) were teaching in senior high schools, 144 (31%) in junior high schools, and 23 (5%) in elementary schools. The basic profiles of the participants are shown in Table 1.

Table 1. Profile of participants

		N	*%*
Gender	male	122	26.34
	female	342	73.73
Taught subject	social sciences	242	52.24
	science	222	47.78
Grade level taught	primary schools	23	5.01
	junior high schools	144	31.09
	senior high schools	297	64.04
Total		464	100

Measure

Demographics

In the meantime, data on gender, grade level taught, and taught subject were collected. Based on literature reviewed (Chan et al., 2010; de Jong et al., 2013), grade level taught comprised three layers (primary, junior high, and senior high schools), and taught subjects were aggregated into two major domains, i.e., science

(including chemistry, physics, computer science, and math) and social sciences (including history, English, Chinese, and politics). Details can be seen in Table 1.

The inventory for teacher identity
The Inventory for Teacher Identity (ITI; Canrinus et al., 2011) comprised 35 items measuring four dimensions of teacher identity. The first dimension assessed teacher self-efficacy with 18 items: relationship self-efficacy (6 items), classroom self-efficacy (6 items), and leadership self-efficacy (6 items). The second dimension consisted of 12 items measuring occupational commitment: continuance commitment (3 items), normative commitment (3 items), and affective commitment (3 items). The third dimension was used four times to evaluate job satisfaction. The fourth dimension was a single-item part determining teachers' motivation to teach; it is of note that the stand-alone single item was originally used to capture the change of teacher identity in Canrinus et al.'s (2012) study with good performance; we thus also followed suit. The ITI has exhibited robust internal consistency ranging from .70 to .90 (Li, 2016; Li et al., 2022). Details of the dimension distributions can be seen in Table 2.

Table 2. Item distribution of the inventory for teacher identity

Subscale		Item (No.)	Example Item
Teacher self-efficacy	Relationship self-efficacy	6	I believe I enjoy a good rapport with the administrators at school.
	Leadership self-efficacy	6	I have no difficulty making demands of the school administration.
	Classroom self-efficacy	6	I think I can be very creative in my work with students.
Occupational commitment	Affective commitment	4	I am proud to be in the teaching profession.
	Continuance commitment	4	Changing professions now would be difficult for me to do.
	Normative commitment	4	I would feel guilty if I left teaching.
Job satisfaction		4	Working as a teacher is extremely rewarding.
Motivation to teach		1	I have a drive for the teaching job.

Data analysis
Data collected at the two measurement occasions were analyzed via SPSS 22.0. First, data were screened for accuracy, missing data, outliers, and univariate normality (Tabachnick & Fidell, 2013). Second, the inventory was validated. Regarding internal construct reliability, rather than Cronbach's coefficient alpha, the composite reliability (CR) was calculated, which represents comparatively true reliability that might otherwise be underestimated by Cronbach's α (Hair et al., 2010). The cut-off score of CR is usually .70 (Hair et al., 2010). For validity, a CFA was performed for the ITI (Van Prooijen & Van Der Kloot, 2001).

To explore possible differences based on demographic factors (i.e., gender, taught subject, and grade), a two-step analytic procedure was performed following Meyers et al.'s (2013) recommended approach. First, a series of one-way MANOVA were performed on the eight key variable dimensions. Next, two measures of post hoc analyses were adopted only if significant differences were revealed. One was an independent sample t-test to look into gender and teach subject differences in these dimensions. The other was multiple-group comparison for grade level taught, where Bonferroni correction was adopted to reduce family-wise Type I error, as suggested by many researchers (e.g., Hair et al., 2010; Tabachnick & Fidell, 2013). Significance levels were hence adjusted by dividing the alpha value (generally .05) by the number of comparisons (α/n).

Results

Descriptive statistics
As summarized in Table 3, the data collected by the ITI were normally distributed, where values of skewness and kurtosis were mostly negative and mean values were generally above the middle point: skewness = -.50 ~ .34; kurtosis = -.61 ~ .34; mean = 2.84 ~ 4.66.

Table 3. Descriptive statistics on the ITI dimensions

Teacher identity	Range	Mean	SD	Skewness	Kurtosis
job satisfaction	1.00-6.50	2.99	1.23	.34	-.61
affective commitment	1.00-7.00	4.19	1.42	-.13	-.56
continuance commitment	1.00-7.00	4.09	1.27	-.21	-.19
normative commitment	1.00-7.00	4.28	1.32	-.11	-.41

classroom self-efficacy	1.33-7.00	4.53	.94	-.27	.34
leadership self-efficacy	1.00-6.50	2.84	1.32	.50	-.48
relationship self-efficacy	1.67-7.00	4.83	.96	-.23	-.15
level of motivation	1.00-7.00	4.66	1.44	-.32	-.32

Psychometric properties

Results of the CFA yielded a marginally acceptable model fit: x^2 (506, $N = 464$) = 1379.56, $p < .001$, GFI= .84, RMSEA = .06, CFI = .91, and NFI = .87. Minor modifications were therefore executed, where covariance was added to error terms of four pairs of items (i.e., Items 9 and 10; Items 31 and 34; Items 23 and 24; Items 29 and 30), for the x^2 values to drop noticeably, for example, by 85.80 when setting free error terms of Items 9 and 10. This time, model fit improved: x^2 (502, $N = 464$) = 1157.71, $p < .001$, GFI = .88, RMSEA = .05, CFI = .93, and NFI = .90. The CR values were .85 (job satisfaction), .93 (affective commitment), .78 (continuance commitment), .84 (normative commitment), .90 (classroom self-efficacy), .94 (leadership self-efficacy), and .78 (relationship self-efficacy).

Demographic differences in teacher identity

As Table 4 shows, statistically significant gender differences were identified in teacher identity ($F_{8, 455} = 4.42$; Wilk's $\lambda = .93$; $p < .001$; partial $\eta^2 = .07$). Results of *post hoc* analysis found that male participants scored higher on two scales (i.e., job satisfaction and continuance commitment) and did so on two other scales (i.e., classroom self-efficacy and leadership self-efficacy).

Statistically significant differences were also found arising from teacher identity ($F_{8, 455} = 1.98$; Wilk's $\lambda = .97$; $p = .047$; partial $\eta^2 = .05$). Independent sample t-tests that followed confirmed taught subject differences in affective commitment and continuance commitment. Specifically, participants teaching science scored significantly higher in both of the two dimensions than did their counterparts teaching social sciences.

Grade level taught statistically contributed to four dimensions of teacher identity ($F_{16, 908} = 2.23$; Wilk's $\lambda = .93$; $p = .004$; partial $\eta^2 = .04$). However, in *post hoc* analyses, with the significance level corrected to roughly .017 (.05/3), significant differences were further confirmed in only two dimensions: normative commitment and relationship self-efficacy. Specifically, the participants teaching in primary schools scored lower on the scale for normative commitment, compared with their counterparts teaching in either junior high schools ($M_{\text{difference}} = .92$; $p = .005$) or senior high schools ($M_{\text{difference}} = .82$; $p = .011$). On the scale for relationship self-efficacy, however, the participants teaching in junior high school scored higher than did those in senior high school ($M_{\text{difference}} = .29$; $p = .009$).

Table 4. Differences in teacher identity based on gender, taught subject, and grade level taught

Source	Teacher Identity	Sum of Squares	df	Mean Square	F	Partial η^2	*Post hoc*
Gender	Job satisfaction	16.44	1	16.44	11.09	.02***	Male > Female
	Continuance commitment	7.19	1	7.19	4.47	.01*	
Taught subject	Classroom self-efficacy	8.32	1	8.32	9.50	.02**	
	Leadership self-efficacy	33.17	1	33.17	19.91	.04***	
	Affective commitment	11.77	1	11.77	5.87	.01**	Science > Social sciences
	Continuance commitment	14.95	1	14.95	9.40	.02**	
Grade level taught	Normative commitment	16.90	2	8.45	4.97	.02**	Primary < Junior high
	Relationship self-efficacy	8.05	2	4.03	4.47	.02**	Junior high > Senior high

*Note: * $p < .05$, ** $p < .01$; *** $p < .001$.*

Discussion

This study explored whether gender, taught subject, and grade level would make a difference in teachers' perceived teacher identity in terms of teacher self-efficacy, occupational commitment, job satisfaction, and motivation to teach.

Not surprisingly, significant gender-based differences were observed. This finding was largely in agreement with previous studies where gender was reported to result in differences in teaching-related constructs such as organizational behaviors, teacher effectiveness, and job satisfaction (Aydin et al., 2012; Klassen & Chiu, 2010; Sloane & Williams, 2000). This study further found that male first-year school teachers reported higher job satisfaction, continuance commitment, classroom self-efficacy, and leadership self-efficacy than their female counterparts. This finding partially lends support to Martinez-Leon et al.'s (2018) finding that women teachers tend to report less satisfaction with their teaching jobs than men. On the one hand, problems challenging female school teachers are much more severe in comparison to their male colleagues, including but not limited to workload, emotional stress, work-family imbalance, and shocks from expectation-reality gaps in the teaching career (Kim & Cho, 2014; Voss & Kunter, 2019). At the same time, the onset of the teaching career is oftentimes the period of time when female teachers form families, prepare for pregnancy, or even deliver babies. All these pressures put together add to female teachers' physical and psychological burden, resulting in their low intention to stay in the teaching profession. On the other hand, partly due to the socially biased value attached to males, particularly in such a Confucian Heritage Culture (CHC) in China (Song et al., 2020), female first-year school teachers often find it difficult to win due respect and recognition for their value and abilities. One fact is that, in the CHC-featured schools, male teachers are in general more often trusted with important tasks (e.g., delivering demonstration instructions or designing teaching calendars) or important positions (e.g., head teachers or school team leaders). Lacking trust and opportunities to execute teaching strategies and practice decision-making agency, female teachers are inclined to feel less efficacious in managing classroom instructions and establishing leadership.

The current study found that taught subjects contributed to first-year school teachers' perceived identity on the subscales of affective commitment and continuance commitment. Partly in agreement with Gökyer's (2018) prior finding, science teachers (i.e., those teaching math, physics, chemistry, and computer science) scored higher on these two subscales than did social sciences teachers (i.e., those teaching English, Chinese, history, and politics). Although there is no immediate empirical evidence from the literature, one possibility is that science teachers tend to establish stronger subject affiliations than do social science teachers. Little (1993) found that such academic fields as science often enjoy a higher status stemming from their importance for tertiary institutions. Science teachers thus tend to be proud of their subject specialization and develop a loyalty to what they have learned from universities that closely relates to what they are teaching in schools. According to Little (1993), this subject-based pride and affiliation is a powerful component of professional community that can extend to working organizations, thus giving rise to science teachers' standing commitment to the teaching occupation. Another possibility relates to the Chinese context of educational settings. In higher education, science subjects generally demand conscientiousness and rigor in labs or fields, whereas social science subjects are often associated with repetition and rote learning. According to effort-recovery theory (Meijman & Mulder, 1998), intensive efforts invested to prepare science students for future science teaching careers can relatively arouse their commitment to the occupation where they are executing their science specialization.

Findings also evidenced that teacher identity perceived by first-year teachers varied across grade levels taught. Interestingly, primary school teachers reported having a lower normative commitment than junior high school teachers. The literature lacks empirical evidence to support this finding; however, there is still one possible explanation in terms of work stress and social status. On the one hand, prior studies have repeatedly found that teachers in primary schools perceived a significantly higher stress level than those in secondary schools (Chan et al., 2010; Ling, 2006; Sutton, 1984). Major reasons lie with class cuts and surplus teachers, which might lead to career instability. On the other hand, in the Chinese context, primary school teachers enjoy a relatively lower social status in comparison to those in secondary schools. This is mainly because education in China, in spite of waves of efforts, is still examination-oriented, so that children's academic performance in elementary education is less worrying a source than *gaokao* (the national matriculation exam in the Chinese Mainland) for parents on the whole (Dello-Iacovo, 2009; Li et al., 2019). It is understandable that primary school teachers find themselves in less advantageous positions, receiving less social attention and recognition, so that their emotional attachment to the teaching career and schools might be relatively weaker. In a similar vein, *gaokao* consumes most of the time and passion of teachers of senior high schools, so much so that dealing with all sorts of relationships (with colleagues or students) is not prioritized, and their relationship self-efficacy might have been compromised in consequence. This can at least partly explain why senior school teachers were found to perceive lower relationship self-efficacy than junior school teachers in the current study.

Conclusion

This study aimed to investigate teacher identity differences grounded in gender, taught subject, and grade level. Theoretically, findings contributed to the relevant literature in at least two ways. On the one hand, consistent with previous research (Canrinus et al., 2012; Li, 2016; Li et al., 2022), empirical evidence showed that teacher identity could be comprehensively understood using a four-indicator model. On the other hand, there were marked gendered and subject-specific differences in teacher identity. A distinct disparity also appeared for

teachers teaching at different levels of school. One may question whether these findings are reflective of true variance in teacher identity rather than statistical chance. However, this worry is not necessary in that composite reliability (CR) was adopted to avoid underestimated calculations by Cronbach's (Hair et al., 2010), while Bonferroni correction was undertaken to minimize Type I error (Tabachnick & Fidell, 2013).

To build and retain a strong teacher identity, some practical implications can be suggested. For example, job resources (e.g., collegial support, supervisory guidance, or upward opportunities) should be made immediately accessible to female teachers, particularly at the onset of the teaching career. Advice and support for female teachers' career development and work-family balance should be provided promptly. Equally important, social science subjects (e.g., language, history, or the arts) should be given due importance and recognition society-wide so that teacher candidates at universities can establish a necessary pride in and loyalty to their subject specialism that can extend well into their whole teaching career. Last but not least, policymakers and administrators of varying levels should take measures to strengthen teachers' identification with and emotional attachment to elementary education through, for example, underscoring the importance of elementary education for the average household, the education landscape, and society as a whole, or minimizing the impact of exam orientation so that attention could be at least partially diverted to genuine quality education.

Despite the merits above, there are some limitations to this study. For example, heavy reliance was placed on self-reported data that might relatively lack credibility. Other methods (e.g., interview or observation) could be included in future research for triangulable evidence. As another example, only three demographic variables were investigated in terms of their role in teacher identity, while other equally important demographics (e.g., marital status or social economic status) or individual difference constructs (e.g., personality traits or vocational interest) could also be taken into account in the future.

Author (s) Contribution Rate
All researchers contributed at every stage of the research.

Conflicts of Interest
We declare that we have no financial and personal relationships with other people or organizations that can inappropriately influence our work. Also, there is no professional or other personal interest of any nature or kind in any product, service and/or company that could be construed as influencing the position presented in, or the review of, the manuscript entitled *Variance of Teacher Identity in First-Year School Teachers: The Role of Gender, Taught Subject, and Grade Level Taught*.

Ethical Approval
The research presented in this article was carried out with due consideration to all relevant ethical issues and was approved by the Human Research Ethics Committee at Southwest University.

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