

Constructing a Structural Model of Teachers' Professional Identity

Yu-Shu Raissa Kao¹, Sung-Po Lin²

¹⁻² Department of Educational Policy and Administration,
National Chi Nan University, TAIWAN.

¹yskao@ncnu.edu.tw, ²splin@ncnu.edu.tw

ABSTRACT

This quantitative study measured the professional identity of teachers at elementary and junior high schools in Central Taiwan and applied an analysis framework to test the effects of self-expectation (SE), teachers' duties (TD), and external influential factors (EF) on pedagogy (PE) as well as instructional skills and knowledge (SK) on teachers' citizenship behavior (CB), which were identified as 6 latent concepts of teachers' professional identity. Structural equation modeling techniques were applied to test the associations among variables in a structural model. The results of the data analysis reveal that (a) most of the scores of 22 items were above a rating of 3.75 according to descriptive statistics; (b) SE, TD, and EF exerted a significant direct effect on PE; (c) SE and TD had a significant direct effect on SK; (d) SE, PE, and SK exerted a significant direct effect on CB; and (e) the standardized total effects of SE, TD, and EF on CB were .49, .38, and .09, respectively. Implications for educational practices and future research are provided.

Keywords: Teachers' professional identity, structural equation modeling, Taiwan

INTRODUCTION

The educational system in Taiwan has undergone a series of reforms over the past two decades at both the administrative and instructional levels. Because teachers are front-line education practitioners, they are widely considered to strongly influence the extent to which fundamental change might occur as a result of implemented reform policies (Chang, 2001; Woodbury & Gess-Newsome, 2002). For example, teachers' leadership roles in school, such as their roles in site councils, principal-selection committees, and teacher-evaluation committees, are emphasized by the finding that teachers represent nearly 50% of the members of these groups. In response to consecutive reform efforts, teachers must confront the challenge of constantly clarifying their role as an educational practitioner in schools, namely construction and reconstruction of their professional identity. Therefore, teachers' professional identity in Taiwan has drawn academic attention in recent years. Teaching quality is often the focus of global education reform. However, the criteria for excellence in teaching in Taiwan change according to societal change and economic development. Yang (2008) discovered that constant redefinitions of teaching profession by educational reforms have motivated teachers to construct, deconstruct, and reconstruct their professional identity, including its content, form, and subjects. The internal locus of control, levels of job satisfaction, and sense of achievement of teachers positively affect their professional identity (Yang & Huang, 2009). Other influential factors include teachers' perception of their social status, gender, professional background, positions, and locations of schools (Huang & Wong, 2009). However, Chiang (2008) determined that teachers in Taiwan have superior work conditions, high job security, and a stable income, creating a context in which a particular professional identity develops. This identity serves as an inner mechanism and orients the professional commitment of teachers toward instruction and self-regulation for conforming to

implicit norms. Their interactions with external environments are therefore constrained by that particular professional identity, leading to teachers' lack of enthusiasm for collective movement by a teachers' union. Thus far, Taiwanese empirical studies have shed more light on the effect of factors on teachers' professional identity than on its content. The current study was designed to measure the professional identity of teachers at elementary and junior high schools in Central Taiwan for establishing a model that clarifies the content of teachers' professional identity to further contribute to the definition of professional identity that remains elusive in the academic field.

TEACHERS' PROFESSIONAL IDENTITY

By definition, Beijaard, Meijer, and Verloop (2004) claimed that professional identity involves four characteristics. First, it is instable. People constantly interpret and reinterpret their own experience, mainly about what they aspire to become in their work. The second characteristic is that the application of people's professional knowledge must be corrected in interactions between a person and the work context through negotiation and compromise. Third, in the process of constructing professional identity, people must engage in self-examination and justify their professional experience. Finally, subidentities are formed by individual interpretation filtered by their prior knowledge and beliefs. Masoumpanah and Zarei (2014) indicated that the formative teacher training experience is one of the primary factors influencing the professional identity of teachers and their sense of subject competence. Subidentity formation is related to the self-concept of a person. A person can generate different types of self-concept, resulting in various subidentities.

Professional identity involves a person's self-concept and identity that originate from interpreting and reinterpreting his or her professional experience. Because it is a social construct resulting from interactions among several factors, such as people's subjective experience and critical self-examination, professional identity does not remain in a steady condition (Ivanic, 1997; Pinar, 2012; Wenger, 1998). However, despite its strong instability, certain scholars insist that people strive to maintain personal expectations and goals (Ruohotie-Lyhty, 2013). Pratt, Rockman, and Kaufmann (2006) investigated the professional identity of people by observing the behavior of medical residents in hospitals. They determined that identity is constructed through conflicts between who people are and what they accomplish at work, thus developing various learning processes. In addition, in constructing professional identity, student teachers experience negotiation of their multiple identities as friends, students, and teachers in training. Although within the framework of planned and supervised collaboration between them, most of their conflicts were resolved constructively with the development of their teaching identities (Dang, 2013).

The professional identity of teachers is affected by numerous factors and constructed historically, contextually, and socially (Liou, 2008; Hamilton, 2013). In addition, Friesen and Besley (2013) suggested that those who have a well-rounded sense of personal identity are more likely to be ready to begin the process of constructing a professional identity, which is a developmental and social psychological process. Therefore, constructing teachers' professional identity may involve the interactions of personal values and experience, societal context, organizational culture, and professional experience (van den Berg, 2002). Regarding the transformation of teachers' professional identity, although teachers as professionals have gradually become subjected to external standards and professional codes, their own agency serves as a powerful shield for constructing their professional identity and strengthening their commitment (Thomson & Palermo, 2014). When teachers encounter external pressure, school leaders' use of emotional intelligence and establishment of new norms can facilitate

the transition of teachers' professional identity (Hall & Noyes, 2009). Furthermore, professional development helps enhance or transform teachers' professional identity. The effect works most effectively when the content of professional development is consistent with the knowledge and beliefs of teachers (Tillema, 1995). In addition, the atmosphere of democracy and opportunities for dialogue enable teachers to critically examine different types of ideology (Abednia, 2011). However, the professional socialization of most teachers typically becomes implicit and random after commencing work at schools. Teachers rarely link their professional identity to clearly defined professional norms. Teachers tend to form their professional identity in a local and unique manner (Servage, 2009). Therefore, the effects of schools or districts are often considered substantial. If school leaders can guide teachers in the process of change, the professional identity of teachers would be successfully transformed in a positive direction.

Empirical research has shown that the perception of teachers on their profession and how they want others to perceive their work affect how they use available resources to counteract hardships and how they interpret their own work experience as well as their motivation, efficacy, commitment, and job satisfaction (Day, 2002; Gu & Day, 2007). Moreover, the professional identities of teachers affect how they cognitively and affectively experience their experience. Similarly, their cognitive and affective response to experience can influence their identity construction (Dang, 2013). When the professional identity of teachers involves pedagogy, managing negative emotions caused by external pressure becomes easier for them (Cross & Hong, 2012). Teachers' effectiveness, professional development, and acceptance for reform might also be affected by their professional identity (Beijaard et al., 2000; Masoumpanah & Zarei, 2014). Regarding the effect of education reform on the professional identity of teachers, Day (2002) claims that a highly competitive economy and new right movement have substantially changed school education. Instruction becomes efficiency-oriented, which undermines the identity of teachers and therefore undermines their motivation and efficacy. However, when teachers encounter external pressure, they do not necessarily passively surrender to it. Conversely, teachers develop different coping strategies and actions based on their own professional beliefs, availability of resources, and limitations of their work (Vähäsantanen, Saarinen, & Eteläpelto, 2009). For instance, although teachers endure constant school changes, adherence to their beliefs in caring about the future of students encourages them to establish a favorable relationship with students, instead of fulfilling the school's requirements for performance (Jephcote & Salisbury, 2009). In addition, teachers can learn how to apply expertise to expanding the scope of their professional identity by executing action to influence the entire school (Goodson & Cole, 1994). In summary, the identity of a teacher can be constructed internally because the pressure of the external environment is occasionally immense. Transforming this external pressure necessitates that teachers use their inner strength and professional identity.

According to the literature on the professional identity of teachers, two categories focus on its various aspects: (a) formation and development of teachers' professional identity and (b) identification of characteristics of teachers' professional identity (Rus, Tomşa, Rebega, & Apostol, 2013). Domains that are investigated regarding the professional identity of teachers include teachers' personal life experience, teachers' thinking about instruction, personal values and expectations for the future, and external factors such as teachers' relationships with peers, work environment redesign, organizational structure, the implementation of teaching, education reform, school leadership, and professional development. Regarding the responsibilities of teachers to society and recipients of school education, the ethical aspect of teachers' professional identity should be emphasized (Crigger & Godfrey, 2014). The current study proposes a theoretical framework that illustrates the content of teachers' professional

identity composed of six dimensions: self-expectation, teachers' duties, external influential factors, pedagogy, instructional skills and knowledge, and teachers' citizenship behavior (Figure 1).

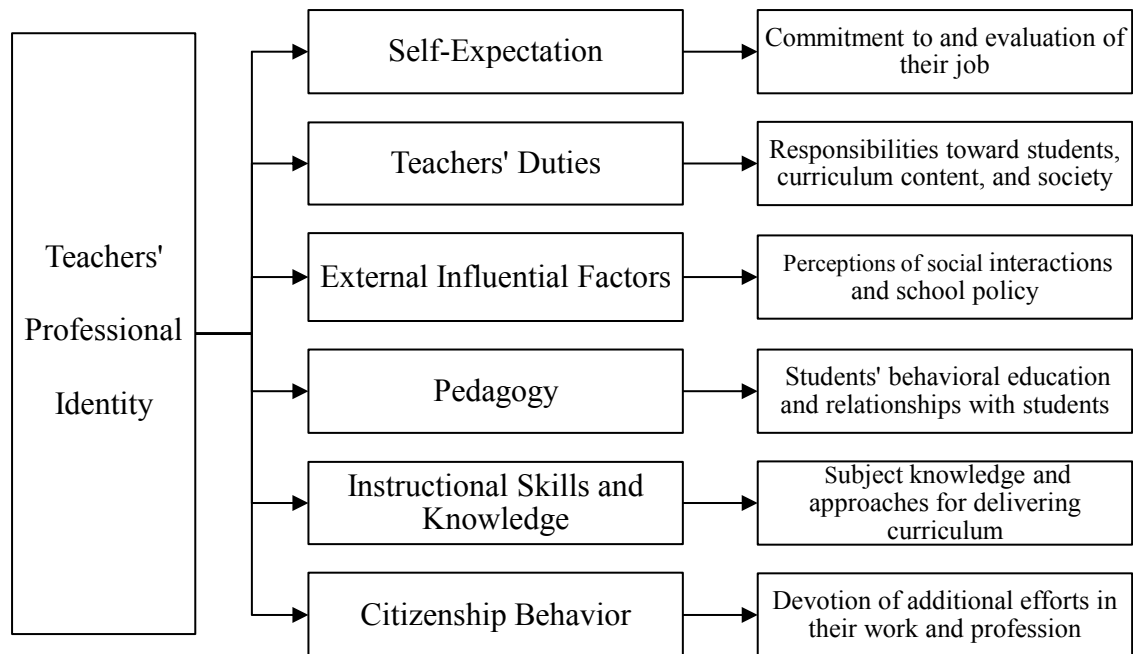


Figure 1. Teachers' professional identity: A theoretical Framework

METHODS

Participants

The participants were 487 teachers from three counties in Central Taiwan and comprised 243 (49.8%) teachers from Taichung City, 78 (16.0%) teachers from Nantou County, and 164 (33.6%) teachers from Changhua County (three cases were missing data). Among the respondents, 128 (26.2%) were from junior high schools and 356 (73.0%) were from elementary schools (four cases were missing data). In total, 153 (31.4%) teachers were men and 332 (68.0%) teachers were women. 64 (13.1%) teachers assumed administrative duties (Table 1).

Table 1. Teachers' background variables

<i>Variable</i>	<i>Level</i>	<i>Number</i>	<i>%</i>	<i>Variable</i>	<i>Level</i>	<i>Number</i>	<i>%</i>
Gender	Male	153	31.4	Age	20-30	21	4.3
	Female	331	68.0		31-40	183	37.6
	Missing value	3	.6		41-50	232	47.6
School	Junior high school	128	26.3		Over 51	49	10.1
	Elementary school	355	72.9		Missing value	2	.4
	Missing value	4	.8	Administrative	No	423	86.9
Total	Total	487			Yes	64	13.1

Framework of Analysis

Based on literature review, this study developed an analysis framework. First, self-expectation (SE), teachers' duties (TD), and external influential factors (EF) are independent variables and affect pedagogy (PE) and instructional skills and knowledge (SK). Second, PE and SK are also independent variables and affect teachers' citizenship behavior (CB). Therefore, in a structural model, SE, TD, and EF are independent variables, whereas PE and SK are intervening variables, and CB is a dependent variable.

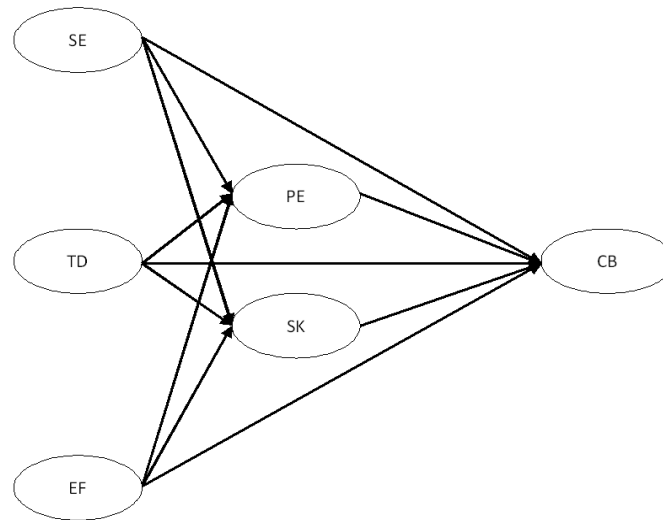


Figure 2. Framework of analysis

Measures

The participants were instructed to respond to 22 items on 5-point Likert scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). As shown in Table 1, 22 items were used to measure the professional identity of teachers. These items were hypothesized to reflect six latent concepts including SE, TD, EF, PE, SK, and CB.

Table 2. Items measuring the latent concepts related to teachers' professional identity

<i>Latent Concepts</i>	<i>Items</i>	<i>Contents</i>
Self-Expectation (SE)	Q01	I hope I can continue to teach for the rest of my life.
	Q02	The reasons that made me become a teacher at first are also the reasons that make me want to continue teaching now.
	Q03	I always wanted to be a teacher, and it is a respectable job to me.
	Q04	The type of teacher that I expected to be is consistent with my current style.
	Q05	Statements regarding my career by others are consistent with what I perceive myself.
Teachers' Duties (TD)	Q06	I think being responsible for curricula and instruction is one of my professional duties.
	Q07	I believe that being responsible for students is one of my professional duties.
	Q08	I believe that being responsible for society is one of my professional duties.
External Influential Factors (EF)	Q09	School policies influence my teaching.
	Q10	Parents' attitudes influence my teaching.

(EF)	Q11	Curriculum policy influences my teaching.
	Q12	Within the scope of professional ethics, I am willing to interact with students actively to establish trust with them.
	Q13	I am willing to discipline students according to the law when they have behavioral problems.
Pedagogy (PE)	Q14	As a teacher, I always lead by example to teach students how to get along with others.
	Q15	I believe that teachers have great influence on the behavior and morality of students.
	Q16	I believe that teachers should be able to use appropriate teaching methods to deliver the content of teaching material.
Instructional Skills and Knowledge (SK)	Q17	I believe that teachers should be able to use appropriate teaching methods to stimulate students' interest in learning.
	Q18	I believe that teachers should be able to teach most students to understand the content of teaching material.
	Q19	I can attempt different teaching methods in class to help students learn.
Teachers' Citizenship Behavior (CB)	Q20	I am willing to expend additional time to help students solve problems in their lives.
	Q21	I am willing to expend additional time to help students solve academic problems.
	Q22	I commit myself extensively to my job as a teacher.

Analytical Methods

This study first generated descriptive statistics and correlations for all of the studied variables. Subsequently, structural equation modeling techniques were applied to test the associations between the variables in the structural model.

RESULTS

The means and standard deviations (SD) for teachers' professional identity are presented in Table 3. Most of the scores reported (all positively written items) were above a rating of 3.75. Table 4 indicates correlations among the 22 items.

Table 3. Means and standard deviations for teachers' professional identity

<i>Latent Concepts</i>	<i>Items</i>	<i>Number</i>	<i>Mean</i>	<i>SD</i>	<i>Latent Concepts</i>	<i>Items</i>	<i>Number</i>	<i>Mean</i>	<i>SD</i>
	Q01	487	4.023	0.810		Q12	488	4.355	0.536
	Q02	486	3.872	0.883	PE	Q13	488	4.299	0.541
SE	Q03	488	4.051	0.755		Q14	488	4.408	0.532
	Q04	488	3.834	0.776		Q15	488	4.182	0.720
	Q05	488	3.750	0.698		Q16	488	4.248	0.519
	Q06	488	4.100	0.594	SK	Q17	486	4.212	0.587
TD	Q07	488	4.191	0.656		Q18	487	3.858	0.693
	Q08	488	4.020	0.699		Q19	488	4.242	0.561
	Q09	488	3.912	0.674		Q20	488	4.057	0.660
EF	Q10	488	3.844	0.714	CB	Q21	487	4.162	0.599
	Q11	486	3.846	0.605		Q22	488	4.139	0.645

Table 4. Correlations among the different items measuring teachers' professional identity

	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22
Q01	1.000																					
Q02	.697	1.000																				
Q03	.695	.694	1.000																			
Q04	.483	.465	.537	1.000																		
Q05	.397	.364	.436	.589	1.000																	
Q06	.280	.251	.262	.233	.200	1.000																
Q07	.356	.303	.355	.303	.220	.584	1.000															
Q08	.249	.273	.328	.264	.220	.502	.475	1.000														
Q09	.085	.146	.148	.123	.086	.147	.041	.217	1.000													
Q10	.007	.019	.022	-.020	-.007	.027	.007	.127	.515	1.000												
Q11	.030	.095	.094	.091	.061	.176	.073	.174	.522	.446	1.000											
Q12	.371	.302	.397	.339	.288	.384	.419	.316	.163	.071	.152	1.000										
Q13	.334	.275	.356	.278	.257	.355	.349	.328	.171	.127	.188	.651	1.000									
Q14	.342	.261	.409	.377	.320	.358	.382	.345	.229	.110	.158	.622	.508	1.000								
Q15	.337	.256	.353	.283	.239	.234	.335	.315	.100	.089	.150	.373	.410	.352	1.000							
Q16	.276	.195	.265	.218	.245	.284	.276	.263	.100	.009	.091	.413	.397	.355	.251	1.000						
Q17	.281	.224	.290	.239	.220	.243	.218	.224	.076	.035	.095	.378	.377	.386	.310	.625	1.000					
Q18	.271	.180	.240	.186	.194	.252	.212	.181	.052	.057	.046	.270	.306	.230	.185	.427	.375	1.000				
Q19	.278	.200	.206	.228	.196	.339	.246	.185	.136	.111	.174	.437	.414	.392	.291	.415	.436	.301	1.000			
Q20	.262	.270	.319	.240	.224	.225	.284	.277	.143	.037	.105	.413	.361	.385	.367	.305	.275	.186	.317	1.000		
Q21	.266	.272	.345	.259	.272	.294	.328	.257	.211	.100	.126	.452	.428	.422	.383	.351	.273	.237	.389	.725	1.000	
Q22	.395	.379	.505	.385	.391	.365	.394	.354	.162	.044	.140	.550	.559	.539	.382	.411	.392	.301	.364	.479	.484	1.000

Tables 5 and 6 present differences in a comparative analysis of the different background variables for teachers' professional identity. Table 5 shows that no significant difference existed between the genders for the six latent concepts of teachers' professional identity. In addition, a significant difference among the ages of the teachers was observed, but a post hoc comparison revealed no significant difference. Table 6 indicates that the elementary school teachers scored higher compared with the junior high school teachers in SE, PE, and SK. Furthermore, the teachers with administrative duties scored higher in TD compared with the other teachers.

Table 5. Analysis results for teachers' professional identity regarding gender and age

<i>Latent Concepts</i>	<i>Gender</i>				<i>Age</i>			
	<i>Level</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>Level</i>	<i>Mean</i>	<i>SD</i>	<i>F</i>
SE	Male	3.893	0.613	-0.267	20-30	3.733	0.643	3.206*
	Female	3.909	0.629		31-40	3.816	0.607	
					41-50	3.965	0.619	
					Over 51	4.033	0.656	
TD	Male	4.100	0.535	-0.067	20-30	3.952	0.425	3.390*
	Female	4.104	0.538		31-40	4.022	0.593	
					41-50	4.168	0.513	
					Over 51	4.170	0.409	
EF	Male	3.895	0.529	0.869	20-30	3.810	0.543	.101
	Female	3.849	0.547		31-40	3.871	0.574	
					41-50	3.871	0.529	
					Over 51	3.850	0.505	
PE	Male	4.330	0.404	0.650	20-30	4.345	0.436	2.516
	Female	4.301	0.472		31-40	4.245	0.460	
					41-50	4.365	0.444	
					Over 51	4.296	0.444	
SK	Male	4.158	0.431	0.626	20-30	4.071	0.337	1.179
	Female	4.131	0.453		31-40	4.108	0.431	
					41-50	4.180	0.459	
					Over 51	4.107	0.476	
CB	Male	4.148	0.517	0.814	20-30	4.286	0.398	2.855*
	Female	4.106	0.541		31-40	4.036	0.562	
					41-50	4.159	0.528	
					Over 51	4.184	0.467	

* $p < .05$

In this study, we used LISREL 8.80 to evaluate the assumption of the structural model and maximum likelihood as the estimation method. In the model tested, the items from each scale were hypothesized to load only onto their respective latent variables.

Table 6. Analysis results for teachers' professional identity regarding different schools and teachers with administrative duties

<i>Latent Concepts</i>	<i>School</i>				<i>Administrative</i>			
	<i>Level</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>Level</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>
SE	Junior high	3.788	0.618	-2.457*	No	3.902	0.621	-.313
	Elementary	3.945	0.621		Yes	3.928	0.649	
TD	Junior high	4.026	0.562	-1.878	No	4.084	0.541	-2.177*
	Elementary	4.130	0.524		Yes	4.240	0.488	
EF	Junior high	3.799	0.566	-1.597	No	3.867	0.535	.036
	Elementary	3.889	0.533		Yes	3.865	0.590	
PE	Junior high	4.209	0.476	-3.083**	No	4.297	0.457	-1.870
	Elementary	4.351	0.438		Yes	4.410	0.419	
SK	Junior high	4.000	0.479	-4.274***	No	4.131	0.449	-1.141
	Elementary	4.193	0.424		Yes	4.199	0.423	
CB	Junior high	4.047	0.522	-1.877	No	4.108	0.541	-1.258
	Elementary	4.149	0.532		Yes	4.198	0.478	

* $p < .05$. ** $p < .01$. *** $p < .001$

The results indicated a reasonable fit to the data and that $\chi^2 = 437.81$ ($df = 192$, $p < .000$), root mean square error of approximation (RMSEA) = .051, goodness-of-fit index = .92, normed fit index = .96, nonnormed fit index = .97, comparative fit index = .98, incremental fit index = .98, and relative fit index = .95. The value of RMSEA was within the range of .05 to .08, and any model yielding a fit index higher than .90 was considered acceptable.

The range of factor loadings for all of the items were .52–.83, and all of the t -values were higher than 1.96. In other words, the amount of variance in the items was explained by all of the latent concepts.

Table 7. Factor loadings of items

<i>Latent Concepts</i>	<i>Items</i>	<i>Loading</i>	<i>t</i>	<i>R²</i>	<i>Latent Concepts</i>	<i>Items</i>	<i>Loading</i>	<i>t</i>	<i>R²</i>
SE	Q01	.77	18.82***	.60	PE	Q12	.81	-	.66
	Q02	.69	15.37***	.48		Q13	.76	17.30***	.57
	Q03	.83	20.92***	.69		Q14	.74	16.79***	.54
	Q04	.68	15.96***	.46		Q15	.52	11.35***	.27
	Q05	.59	13.36***	.35		Q16	.79	-	.63
TD	Q06	.75	17.25***	.56	SK	Q17	.76	14.63***	.58
	Q07	.75	17.29***	.56		Q18	.53	10.65***	.28
	Q08	.65	14.46***	.42		Q19	.57	11.50***	.33
	Q09	.78	16.17***	.61		Q20	.57	-	.33
EF	Q10	.65	13.67***	.43	CB	Q21	.61	15.94***	.38
	Q11	.68	14.17***	.46		Q22	.79	11.97***	.63

SE, TD, and EF exerted a significant direct effect on PE; the standardized coefficients were .37, .47, and .14, respectively. Furthermore, SE and TD had a significant direct effect on SK; the standardized coefficients were .29 and .38, respectively. SE, PE, and SK exerted a significant direct effect on CB; the standardized coefficients were .20, .66, and .18, respectively. Through the significance of the indirect effect of the intervening variables of PE on CB, the standardized coefficients were .24 ($.37 \times .66 = .24$), .31 ($.47 \times .66 = .31$), and .09 ($.14 \times .66 = .09$). Furthermore, through the significance of the indirect effect of the intervening variables of SK on CB, the standardized coefficients were .05 ($.29 \times .18 = .05$) and .07 ($.38 \times .18 = .07$). The total effect was the sum of all of the significant direct and indirect effects. The standardized total effects of SE, TD, and EF on CB were .49 ($.20 + .24 + .05 = .49$), .38 ($.31 + .07 = .38$), and .09, respectively.

Table 8. Significance testing results of the structural model path coefficients

<i>Path</i>	<i>Coefficients</i>	<i>t Values</i>
SE → PE	.37***	6.79
SE → SK	.29***	4.67
SE → CB	.20**	3.16
TD → PE	.47***	8.15
TD → SK	.38***	5.74
TD → CB	.02	0.21
EF → PE	.14**	3.10
EF → SK	.06	1.07
EF → CB	.00	0.05
PE → CB	.66***	7.05
SK → CB	.18**	3.15

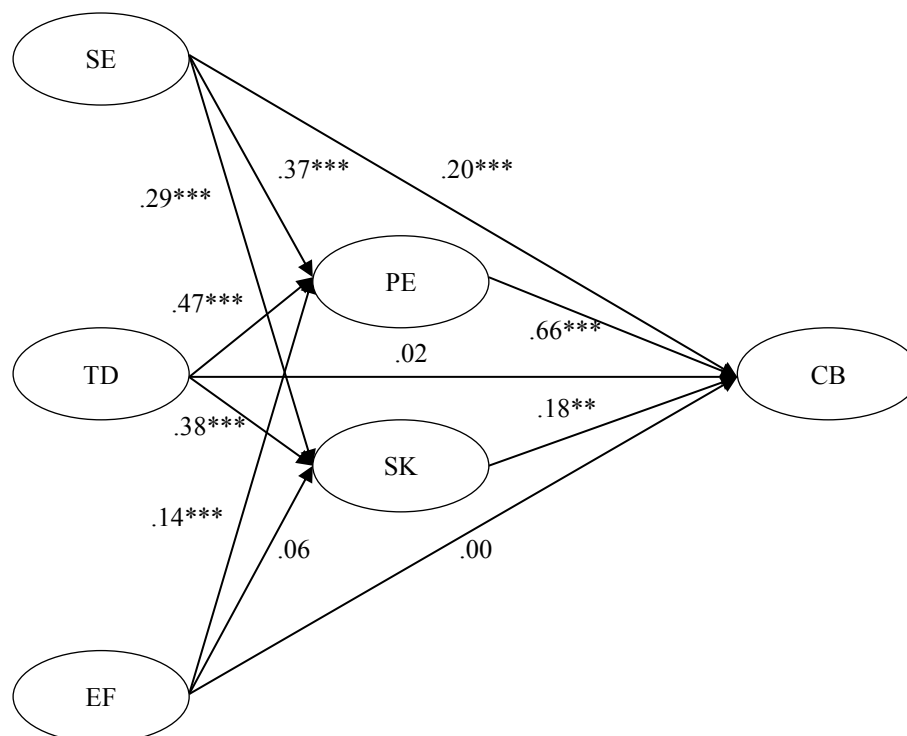


Figure 3. Path coefficients in the structural model

CONCLUSION AND IMPLICATIONS

The findings show that teachers demonstrated above-average identity in the teaching profession and that the background variables did not significantly affect their professional identity, except for age. Teachers' expectations of their profession, their responsibilities toward students, curriculum design, and society, and how they perceive external pressures exerted a significant direct effect on their professional identity for students' behavioral education. Teachers' expectations of their profession, their responsibilities toward students, curriculum design, and society exerted a significant direct effect on the instructional skills and subject knowledge of teachers. Teachers' expectations of their profession, their professional identity for students' behavioral education, and their instructional and subject knowledge had a significant direct effect on their devotion of efforts to their work. Through the significance of the indirect effect of the intervening variables of teachers' professional identity for students' behavioral education and instructional skills and subject knowledge, the effects of teachers' expectations of their profession, their responsibilities toward students, curriculum design, and society, and how they perceive external pressures can therefore be enhanced.

To enhance the professional identity of teachers, transformational leadership may guide teachers in their professional development so that their expectations for their profession and awareness of their own responsibilities toward students, teaching, and society as a whole can be raised. Furthermore, external influences, such as the implementation of policy and timely and specific feedback from parents or administrators, even if these external influences may not directly affect teachers' instruction, can improve the knowledge and skills of teachers for counseling and student discipline. Second, teachers must be provided with opportunities to fully apply instructional skills and subject knowledge in their classroom and their professional authority must be respected so that they can substantially exercise professional power with knowledge and ability for student counseling and discipline. Consequently, teachers can experience a sense of achievement, thus improving teachers' citizenship behavior. Teachers can then demonstrate higher professional identity.

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