

## Article

# Vocational High School Teachers' Identification with Core Competency of 12-Year Basic Education Curriculum Guidelines and Its Pedagogical Transformation - Teaching Experience as Study

Chin-Guo Kuo, Hsi-Chuan Wang \*, Li-De Jiang, and Jiun-Ying Jiang

Department of Industrial Education, National Taiwan Normal University, Taipei 106209, Taiwan; t07019@ntnu.edu.tw (C.-G. Kuo); lid8899@gmail.com (L.-D. Jiang); p162@kpvns.ntpc.edu.tw (J.-Y. Jiang)  
\* Correspondence: teach9213@gmail.com; Tel.: +886-988-895-306

Received: Jun 30, 2022; Accepted: Jul 30, 2022; Published: Sep 30, 2022

**Abstract:** Vocational education is crucial for secondary education in Taiwan. With the rapid development of technology, social change, and industry needs, education change has been processed accordingly. “108 Curriculum Guidelines” indicated the idea and the goal of the curriculum to take core competency as a key aspect in secondary education courses. Thus, it is necessary to explore the relevance between teachers' identification with the core competency of 12-year basic education curriculum guidelines and its pedagogical transformation. Considering the professional knowledge and practical skills of vocational teachers, it is hard to combine them with the core competency into courses for pedagogical transformation. Thus, we analyze the impact of teaching seniority on core competency and its pedagogical transformation by collecting survey data from teachers in vocational schools in Taiwan. Teaching seniority shows a significant difference from the core competency, further affecting pedagogical transformation. Therefore, we propose specific suggestions as follows. First, teachers need to be encouraged to attend workshops to strengthen core competency. Second, course discussion among teachers is required to combine core competencies into courses. Third, the increase of identification to a core competency for senior teachers is demanded to perform pedagogical transformation with teachers' rich experiences.

**Keywords:** Vocational High School Teachers, Core Competency of 12-Year Basic Education Curriculum Guidelines, Identification, Pedagogical Transformation

## 1. Introduction

The education of vocational skills in Taiwan is crucial as its purpose lies in the implementation of technical education to cultivate talents from all walks of life (Ministry of Education (MOE), 2015). With the rapid development of technology, social change, and industry needs, education reform has proceeded accordingly. 12-year Basic Education officially implemented in 2019 emphasized the combination of students' learning and life in terms of curriculum concepts and objectives, and manifested holistic education through practice (MOE, 2014). Therefore, the incorporation of competency is the key aspect of course development and reform along with the focus on course connection, integration, transformation, and the combination of life and learning (National Academy for Educational Research (NAER), 2014a, 2014b; MOE, 2014). Teachers are the key to cultivating students to be lifelong learners equipped with flexibility and adaptability to society (Chang, 2018). School teachers need to respond to course development and curriculum concepts incorporated with core competency, and the most complex course exists in vocational education with general and professional subjects as well as practicums. Teachers' competency and instruction quality is the key to the success of education reform and 12-year basic education (MOE, 2013). Also, teaching experience impacts the identification and pedagogical transformation of core competency. As a result, focusing on vocational high school teachers in various regions of Taiwan, we analyze the impact of teachers' years of experience on the relationship between the identification with the core competency of 12-year basic education curriculum guidelines and its pedagogical transformation.

## 2. Literature Review

### 2.1. Core Competency

Since 1997, Organization for Economic Co-operation and Development (OECD) has continuously conducted cross-countries comparisons of core competency in a variety of fields and found that core competency could be guided through education, cultivated through instructions, and acquired through learning. Meanwhile, OECD also emphasized that the cultivation of core competency was the process of lifelong learning and development (OECD, 2016, 2018). Core competency covered knowledge, ability, and attitude, and was not limited to knowledge and skill of learning subjects, allowing students to be adapted to the current and future challenges in life (NAER, 2014a, 2014b; MOE, 2014).

### 2.2. Identification

Psychologist Sigmund Freud described identification as the process in which an individual unconsciously imitated others (Gautam et al., 2004), and also believed that identification was not only from the action of imitation but the process of internalization (Chen, 1986). Richard Jenkins further explained in the Oxford dictionary that identification was derived from idem which represented the meaning of “identical” (Wang and Hsu, 2006). Chang (2006) also stated that “identification” in English was referred to as individual support of the attitude and behavior of a certain idea and incident. Shashkin and Morris (1984) indicated that identification could be a cognitive component referring to an individual’s opinions of the idea, belief, suggestion, and knowledge, an affective component meaning an individual’s preference and emotional response to a certain belief, and behavioral component standing for an individual’s explicit behavior of supporting certain incident or belief.

### 2.3. Pedagogical Transformation

The transformation was indicated as a changing process of uncertainty, and the changes occurred in the aspects of form, nature, and connotation (Ye, L.-C. 2002). Researchers believed that transformation applied in curriculum and teaching research was the implementation of curriculum practice as well as the concretization of teaching strategies and materials (Mao, 2015). Shulman (1987) suggested that teachers needed to consider students’ characteristics, learning situations, and ways of comprehension, and achieved the purpose of education as well as the understanding of teaching materials through analysis and interpretation, selective representation, and teaching method. Furthermore, the pedagogical transformation was achieved by teachers transforming knowledge into pedagogical activities which must take the balance among learners, learning materials, and teachers into account. There were four phases during pedagogical transformation, including preparation, representation, selection, adaptation, and tailored to student characteristics (Shulman, 1987). Mao (2015) described the transformation as the process of implementation in which teachers put abstract curriculum ideas into practice, which involved four aspects: pedagogical objectives, knowledge and theories, teaching material development, and pedagogical strategies.

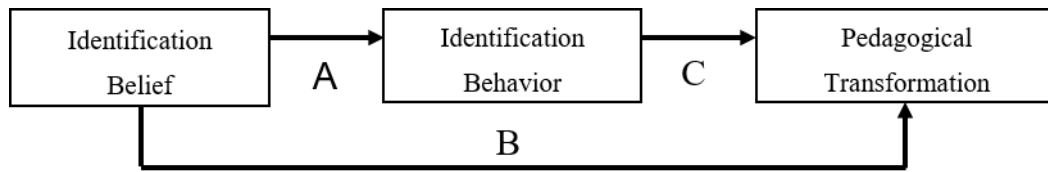
## 3. Research and Implementation

### 3.1. Methods

The tool used to collect data in this study was the survey “Identification with Core Competency of 12-Year Basic Education Curriculum Guidelines and Its Pedagogical Transformation” developed by Jiang (2020). The survey was designed with a Likert 5-point scale with the option from 1: extremely disagree to 5: extremely agree. The study adopted clustering sampling on teachers from public and private vocational high schools in Yilan City, New Taipei City, Taoyuan City, Taichung City, Changhua City, and Nantou City in Taiwan. We gathered 808 effective surveys in total through an online questionnaire survey and analyzed the data with SPSS 23 and AMOS 20.0.

### 3.2. Research Structure

The structure of this study was based on the aforementioned literature review, reducing the dimension, deleting, and reclassifying the collected data. Also, the identification was divided into two aspects: identification belief (4 questions) and identification behavior (3 questions), and pedagogical transformation included only one aspect (6 questions). The research structure is presented in Fig. 1.



**Fig. 1.** Research structure.

The relationship between the variables in the research structure is as follows.

- A: The discussion for identification beliefs and identification behavior on “Core Competency of 12-Year Basic Education Curriculum Guidelines” from teachers with different teaching experiences.
- B: The discussion for identification of belief and pedagogical transformation on “Core Competency of 12-Year Basic Education Curriculum Guidelines” from teachers with different teaching experiences.
- C: The discussion for identification belief and pedagogical transformation on “Core Competency of 12-Year Basic Education Curriculum Guidelines”.
- A+C: The discussion of whether “Core Competency of 12-Year Basic Education Curriculum Guidelines” from teachers with different teaching experiences had moderated mediation effect on the relationship between identification belief and pedagogical transformation.

**4. Data and Statistics Analysis**

*4.1. Sample Data*

In this study, teachers’ teaching experience is mainly discussed in the background variable. The valid samples include 257 teachers (31.8%) who have been teaching for more than 21 years, 166 teachers (20.5%) who have been teaching for 16–20 years, and 165 teachers (20.4%) who have been teaching for 11–15 years, 142 teachers (17.6%) for 6–10 years, and 78 teachers (9.7%) for 5 years.

*4.2. Variable Analysis*

The data collected may not conform to the normal distribution. Kline (1998) claimed that when the absolute value of skew in all observed variables is less than 3, and the absolute value of kurtosis is less than 10, the distribution is normal. As shown in Table 1, all variables in the sample data of this study conform to an univariate normal distribution.

**Table 1.** Univariate and multivariate normality test tables.

Variable	Min	Max	Skew	C.R.	Kurtosis	C.R.
B3	1.000	5.000	-0.729	-2.627	0.277	0.500
B2	1.000	5.000	-0.808	-2.912	0.260	0.469
B1	1.000	5.000	-0.849	-3.061	0.740	1.335
I3	2.000	5.000	-0.641	-2.310	0.026	0.047
I2	2.000	5.000	-0.619	-2.233	-0.298	-0.538
I1	1.000	5.000	-0.942	-3.396	0.436	0.785
C6	2.000	5.000	-0.170	-0.612	-0.862	-1.554
C5	2.000	5.000	-0.303	-1.093	-0.757	-1.365
C4	2.000	5.000	-0.492	-1.774	-0.460	-0.829
C3	2.000	5.000	-0.397	-1.430	-0.417	-0.751
C2	2.000	5.000	-0.276	-0.995	-0.541	-0.975
C1	2.000	5.000	-0.219	-0.790	-0.225	-0.405
Multivariate					79.021	19.037

4.3. Confirmatory Factor Analysis and Reliability and Validity Analysis

Confirmatory factor analysis (CFA) refers to the theoretical verification of the structural model to test whether the scale meets the expected dimensions. The three variables in the structural model of this study are identification belief, identification behavior, and pedagogical transformation. According to CFA analysis, the load of all standardized factors is above 0.63, and the index reliability is 0.4, indicating that the adaptation model is satisfactory as shown in Fig. 2.

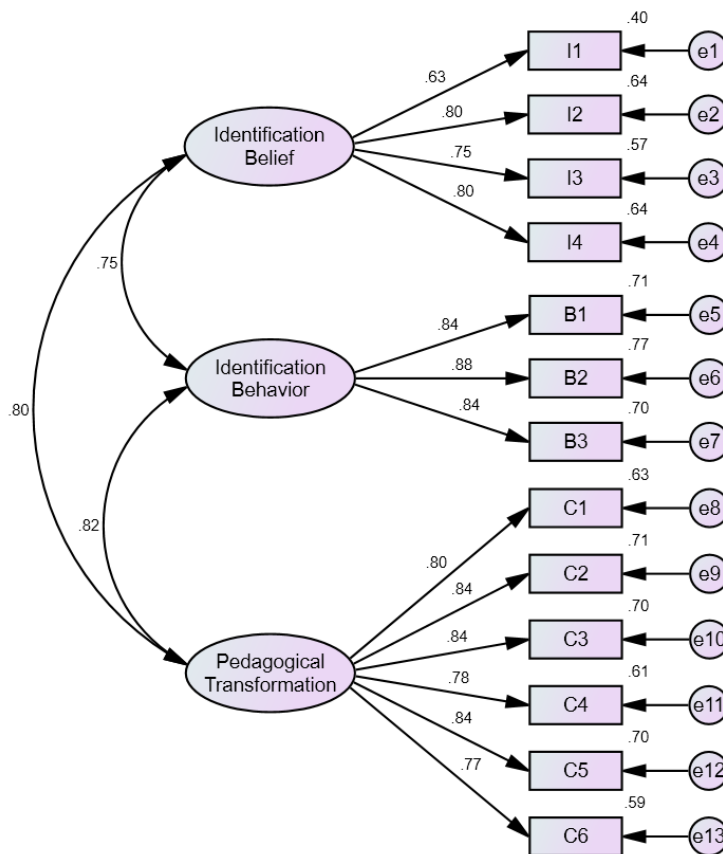


Fig. 2. Confirmatory factor analysis and reliability and validity analysis.

As shown in Table 2, the discriminant validity of the three variables in the current study is identified by the confidence intervals of the correlation coefficients. All confidence intervals do not contain 1 so discriminant validity is demonstrated. Furthermore, the composite reliability (CR) and average variance extracted (AVE) of each variable are used to verify the convergent validity of each variable. According to Table 3, CR is greater than 0.7, and AVE is also greater than 0.5, indicating that the variables used in this study present good convergent validity. In conclusion, the construct validity of the research tool in the current study is acceptable.

Table 2. Confidence interval and discriminant validity of correlation coefficient.

Parameter	Estimate	Lower	Upper
a → b	0.799	0.749	0.844
a → c	0.824	0.755	0.878
b → c	0.746	0.670	0.807

a: Identification Belief; b: Identification Behavior; c: Pedagogical Transformation.

Table 3. Composite reliability and average variance extracted.

Variables	CR	AVE
Identification Belief	0.835	0.560
Identification Behavior	0.889	0.729
Pedagogical Transformation	0.921	0.660

4.4. Structural Model Analysis

We focus on the relationship between identification belief, identification behavior, and pedagogical transformation with the structural model made by AMOS as shown in Fig. 3. The result indicates that the experience of teaching is less than 5 years. This structural model presents an excellent model fit with chi-square 603.239, degree of freedom 310, the ratio of chi-square to degrees of freedom 1.946, GFI 0.901, AGFI 0.854, CFI 0.961, NFI 0.923, TLI 0.950, and RMSEA 0.034. As for AGFI, the value is normally higher than 0.9. The value of AGFI in the current study is 0.854 relatively close to 0.9; however, Hu and Bentler (1995) pointed out that more estimated parameters in the model prevent the value of AGFI from reaching 0.9. Therefore, it is suggested that the value of AGFI could be lowered to 0.8 (MacCallum and Hong, 1997).

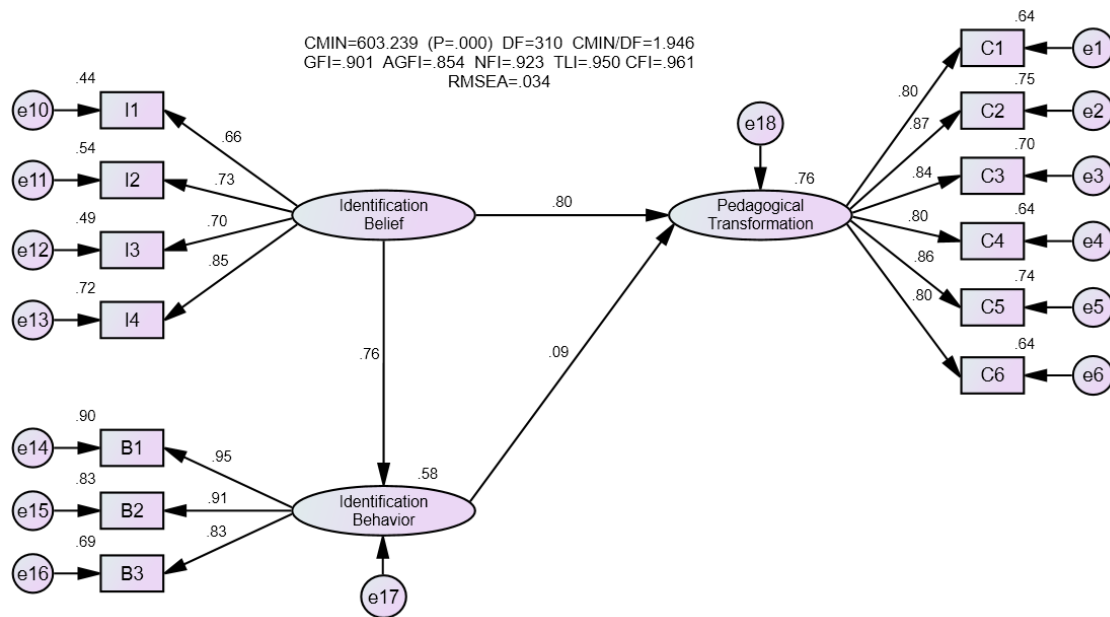


Fig. 3. Standard structural model (teaching experience less than 5 years).

According to the research structure in this study, the prediction path is categorized as direct effect and indirect effect.

- Direct effect analysis

With the estimation analysis of the Bootstrap method, identification and identification behavior, and pedagogical transformation in the group of teaching experience less than five years present significant predictability with the standardized regression coefficient of 0.85 and 0.70. There is no significance between identification behavior and pedagogical transformation, and the range of confidence interval includes zero indicating no significant direct effect. Concerning teaching experience between 11 to 15 years, 16 to 20 years, and more than 21 (inclusive) years, the range of confidence interval of identification belief and identification behavior, identification belief, and pedagogical transformation, and identification behavior and pedagogical transformation in these three groups shows the significant direct effect, indicating that identification belief and identification behavior have direct impacts on pedagogical transformation.

- Moderated mediation effect analysis

The behavior for identification refers to an individual’s explicit behavior toward a certain incident and an idea as discussed in the literature review. Apart from the direct impact of identification beliefs and identification behavior on pedagogy, whether identification belief has an impact on pedagogical transformation through identification behavior is explored. With the Bootstrap method, we also use estimation analysis, and the result is shown in Table 4. The confidence interval for indirect effect in the group of teaching experiences less than 5 years represents insignificance and indicates that identification behavior has no moderated mediation effect on identification belief and pedagogical transformation. The confidence interval for direct effect in the group of teaching experiences between 6 to 10 years shows no significance, but the confidence interval for indirect effect shows significance, indicating that there is a moderated mediation effect and a complete mediating effect. This also explains that there is no direct effect between identification belief and pedagogical transformation in this group. Instead, identification belief is needed to improve identification behavior and enhance pedagogical transformation.

For teachers with teaching experiences between 11 to 15 years, 16 to 20 years, and more than 21 (inclusive) years, the confidence intervals for both indirect and direct effects show significance. Their total effect is also significant. For identification belief and pedagogical transformation in these three groups, identification behavior is the mediator. Identification belief in these three groups has a direct impact on pedagogical transformation, but also identification belief affects pedagogical transformation through identification behavior.

**Table 4.** Standardized regression coefficient for direct relationship.

Teaching Experiences	Parameter	Estimate	Lower	Upper	P
< 5 (inclusive) years	a → b	0.764	0.473	0.914	0.001
	a → c	0.803	0.259	1.406	0.004
	b → c	0.088	-0.535	0.685	0.782
6–10 years	a → b	0.850	0.726	0.936	0.001
	a → c	0.204	-0.224	0.558	0.314
	b → c	0.697	0.346	1.071	0.001
11–15 years	a → b	0.489	0.252	0.702	0.001
	a → c	0.375	0.178	0.538	0.001
	b → c	0.599	0.454	0.769	0.001
16–20 years	a → b	0.846	0.754	0.919	0.001
	a → c	0.626	0.382	0.884	0.001
	b → c	0.330	0.059	0.564	0.020
> 21 (inclusive) years	a → b	0.749	0.644	0.834	0.001
	a → c	0.280	0.080	0.496	0.008
	b → c	0.660	0.437	0.863	0.001

a: Identification Belief; b: Identification Behavior; c: Pedagogical Transformation.

**Table 5.** Moderated mediation effect analysis abstract.

Teaching Seniority	Parameter	Estimate	95% Confidence Interval		
			BC/PC p-value	BC	PC
< 5 (inclusive) years	a → b → c	0.067	Indirect effect 0.734/.613	-0.427-0.579	-0.338-0.615
	a → c	0.803	Direct effect 0.004/0.010	0.259-1.406	0.160-1.264
	a → c	0.870	Total effect 0.001/0.001	0.664-0.984	0.682-0.996
6–10 years	a → b → c	0.592	Indirect effect 0.000/0.001	0.327-1.006	0.295-0.941
	a → c	0.204	Direct effect 0.314/0.305	-0.224-0.558	-0.221-0.560
	a → c	0.796	Total effect 0.001/0.001	0.654-0.908	0.645-0.901
11–15 years	a → b → c	0.293	Indirect effect 0.001/0.001	0.145-0.494	0.143-0.493
	a → c	0.375	Direct effect 0.001/0.002	0.178-0.538	0.169-0.530
	a → c	0.668	Total effect 0.001/0.001	0.527-0.781	0.529-0.783
16–20 years	a → b → c	0.279	Indirect effect 0.015/0.013	0.063-0.486	0.073-0.498
	a → c	0.626	Direct effect 0.001/0.001	0.382-0.884	0.365-0.861
	a → c	0.905	Total effect 0.001/0.001	0.816-0.960	0.814-0.959
> 21 (inclusive) years	a → b → c	0.495	Indirect effect 0.001/0.001	0.334-0.685	0.324-0.670
	a → c	0.280	Direct effect 0.008/0.007	0.080-0.496	0.083-0.499
	a → c	0.775	Total effect 0.001/0.001	0.671-0.854	0.673-0.856

a: Identification Belief; b: Identification Behavior; c: Pedagogical Transformation.

- Multigroup Comparison

The relationship between identification belief and identification behavior, identification belief and pedagogical transformation, and identification behavior and pedagogical transformation showed differences among different groups. As shown in Table 6, the variables have significant Z-scores so parameters between different groups are statistically significant.

**Table 6.** Comparison analysis for multigroup of teaching experiences.

Teaching Seniority	Parameter	6–10 years	11–15 years	16–20 years	> 21 (inclusive) years
		Z-score	Z-score	Z-score	Z-score
< 5 (inclusive) years	a → b	-0.413	-2.159**	-0.110	-0.190
	a → c	-2.347**	-1.859	-0.492	-2.006**
	b → c	3.329***	3.786***	1.67	4.309***
6–10 years	a → b		-2.116**	0.412	0.288
	a → c		1.037	2.329**	0.766
	b → c		-0.674	-2.105**	-0.206
11–15 years	a → b			2.841***	2.551**
	a → c			1.808	-0.317
	b → c			-2.116**	0.698
16–20 years	a → b				-0.114
	a → c				-1.984**
	b → c				2.702***

\*\*  $p < 0.05$ , \*\*\*  $p < 0.001$ ;

a: Identification Belief; b: Identification Behavior; c: Pedagogical Transformation.

## 5. Conclusion and Suggestion

We discussed Taiwan vocational high school teachers' identification of the relationship between core competency of 12-year basic education curriculum guidelines and its pedagogical transformation. Identification is divided into two aspects, including identification belief and identification behavior. In terms of the relationship between identification belief and identification behavior, identification belief and pedagogical transformation, and identification behavior and pedagogical transformation, all variables showed significant effects except for identification behavior and pedagogical transformation in the group of teaching experiences less than 5 years. Identification belief and pedagogical transformation in the group of teaching experiences between 6 to 10 years showed no statistical significance. In addition, identification behavior in the group of 6 to 10 years of teaching experiences was a mediator between identification belief and pedagogical transformation, representing that identification belief affects pedagogical transformation through identification behavior. For the group of teaching experiences between 11 to 15 years, 16 to 20 years, and more than 21 years as the mediator, the identification belief of these three directly affected pedagogical transformation as well as pedagogical transformation through identification behavior.

There are three suggestions proposed in the current study according to the above findings.

- (1) The encouragement of teachers' attendance for relevant workshops. Teachers strengthen their concept of core competency with guidance from workshops and further enhance course design, pedagogical strategies, and learning evaluation for improving students' learning effect.
- (2) The increased ability for incorporating core competency into courses through professional groups. Teachers review and exchange their opinions of the courses with each other in the group and together prepare, observe, give feedback, and study for the courses as well as teaching materials. By doing so, teachers adjust pedagogical strategies but reach self-growth with the times.
- (3) Improvement of identification for core competency with more teaching experiences. According to the analysis of this study, although identification belief and pedagogical transformation in the group of senior teachers generally showed a positive statistical significance, the explanation in the path analysis is relatively insufficient. This is derived from many years of traditional teaching habits. It is difficult for teachers to accept novel educational reforms. Senior teachers are important assets of schools, and their rich teaching experiences are valuable resources for teaching. The practice of pedagogical transformation needs to be implemented with efficiency if the idea of core competency is enhanced and incorporated into the courses.

**Author Contributions:** Conceptualization of this study, Dr. Chin-Guo Kuo and Mr. Hsi-Chuan Wang; Methodology, Dr. Chin-Guo Kuo; Software, Mr. Xichuan Wang; Validation, Dr. Guo, Mr. Xichuan Wang and Mr. Lide Jiang; Mr. Xichuan; Investigation, Mr. Xichuan Wang, Mr. Lide Jiang; Resources, Mr. Xichuan Wang and Mr. Junying Jiang; Data Management, Mr. Xichuan Wang; ; Visualization Mr. Xichuan Wang; Supervision, Dr. Jinguo Guo.

**Funding:** This research did not receive external funding.

**Data Availability Statement:** Not applicable

**Acknowledgments:** This research is thanks to Professor Chin-Guo Kuo for his guidance and leading the correct direction for thesis writing. During the research and writing period, I would like to thank Jiang Lide for assisting in the drafting of the thesis and implementing the questionnaire survey, and I would also like to thank Jiang Junying for providing the questionnaire " Identification with Core Competency of 12-Year Basic Education Curriculum Guidelines and Its Pedagogical Transformation ".

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. Buss, A.M., Chittenden, E.A., & Amarel, M. (1976). *Beyond Surface Curriculum: An Interview Study of Teachers' Understandings*; Boulder, CO: Westview Press.
2. Chang, C.-H. (2006). *The Second Edition of Chang's Psychology Dictionary*; Taipei: Donghua.
3. Chang, W., Ed. (2018). *Future Ability – Literacy - Oriented Teaching and Teaching Manual*; Taipei: Ministry of Education.
4. Chen, Y.-E. (1986). A Study on Residents' Lifestyle, Cultural Participation and Cultural Identity in Urban and Rural Areas. Master's Thesis, Soochow University, Taipei, Taiwan, unpublished.
5. Gautam, T., Van Dick, R., & Wagner, U. (2004). Organizational identification and organizational commitment: Distinct aspects of two related concepts. *Asian Journal of Social Psychology*, 7(3), 301–315.
6. Hu, L., & Bentler, P.M. (1995). Evaluating model fit. In *Structural Equation Modeling: Concepts, Issues and Applications*; Hoyle, R.H., Ed.; Thousand Oaks, CA: Sage, pp. 76–99.
7. Jiang, J.-Y. (2001). A Study on the Relationship between Core Competency Identification and Teaching Transformation of the New Curriculum in Technological High School Teachers. Master's Thesis, National Taiwan Normal University, Taipei, Taiwan.
8. Kline, R.B. (1998). Software review: Software programs for structural equation modeling: Amos, EQS, and LISREL. *Journal of Psychoeducational Assessment*, 16(4), 343–364.
9. MacCallum, R.C., & Hong, S. (1997). Power analysis in covariance structure modeling using GFI and AGFI. *Multivariate Behavioral Research*, 32, 193–210.
10. Mao, J.-R. (2015). Portraying and Constructing a History Teacher's Pedagogical Transformation. *Curriculum & Instruction Quarterly*, 18(4), 57–83.
11. Ministry of Education (MOE). (2013). *Taiwan White Paper on Teacher Education*; Taipei: Ministry of Education.
12. Ministry of Education (MOE). (2014). *Curriculum Guidelines of 12-Year Basic Education General Guidelines*; Taipei: Ministry of Education.
13. Ministry of Education (MOE). (2015). *Technical and Vocational Education Act*; Taipei: Ministry of Education.
14. National Academy for Educational Research (NAER). (2014a). National Core Competency as Core of 12 Curriculum Development Proposal. Available online: [https://www.naer.edu.tw/ezfiles/0/1000/attach/90/pta\\_2560\\_9034730\\_14234.pdf](https://www.naer.edu.tw/ezfiles/0/1000/attach/90/pta_2560_9034730_14234.pdf) (accessed on Nov. 15, 2020).
15. National Academy for Educational Research (NAER). (2014b). National Core Competency as Core of 12 Curriculum Development Guideline. Available online: [https://www.naer.edu.tw/ezfiles/0/1000/attach/93/pta\\_2558\\_5536793\\_14183.pdf](https://www.naer.edu.tw/ezfiles/0/1000/attach/93/pta_2558_5536793_14183.pdf) (accessed on Nov. 15, 2020).
16. Organization for Economic Co-operation and Development (OECD). (2016). *Global Competency for an Inclusive World*; Paris: OECD.
17. Organization for Economic Co-operation and Development (OECD). (2018). *The Future of Education and Skills Education 2030*; Paris: OECD.
18. Shashkin, M., & Morris, W. (1984). Organizational Behavior: Concept, and Experiences. Prentice Hall, Englewood Cliffs, NJ. Sills, D.L. (1968). In *International Encyclopedia of the Social Science*; New York, NY: The Macmillon Company.
19. Stets, J.E., & Burke, P.J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, 63(3), 224–237.
20. Tang, S.-H. (2011). Cross Disciplinary Thinking or Noisy Distraction? The Significance of Transformative Teaching and Its Application in Language Arts and History. *Journal of Textbook Research*, 4(2), 87–120.
21. Wang, J.H., & Hsu, Y.F., Trans. (2006). *Social Identity (Richard Jenkins)*; Taipei: Chuliu.
22. Wilson, S.M., Shulman, L.S., & Richert, A.E. (1987). 150 different ways of knowing: Representations of knowledge in teaching. In *Exploring Teachers' Thinking*; Calderhead, J., Ed.; Sussex, UK: Holt, Rinehart, & Winston, pp. 104–124.
23. Ye, L.-C. (2002). 1-9 Curriculum and Basic Ability Transformation. *Journal of Education Research*, 96, 49–63.



**Publisher's Note:** IIKII stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

**Copyright:** © 2022 The Author(s). Published with license by IIKII, Singapore. This is an Open Access article distributed under the terms of the [Creative Commons Attribution License](#) (CC BY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.