

## Teaching and Learning Conceptions and Teacher Efficacy of Korean Preservice Teachers\*

Na Young Kwon (Professor)<sup>1\*\*</sup>, Dohyoung Ryang (Researcher)<sup>2</sup>

<sup>1</sup>Inha University, [rykwon@inha.ac.kr](mailto:rykwon@inha.ac.kr)

<sup>2</sup>[dratkne@gmail.com](mailto:dratkne@gmail.com)

(Received January 15, 2019; Revised February 20, 2019; Accepted February 28, 2019)

This study aims to examine changes in teaching and learning conceptions and sense of efficacy as well as relationships between them. Data were collected from 121 Korean preservice teachers before and after a 4-week teaching practicum. The results indicated that constructivist conceptions of teaching and learning increased over the practicum period and teacher efficacy shifted as well. In addition, correlations among the constructs were strengthened over the practicum period. Interestingly, constructivist conceptions related to differentiated education were not significant, while traditional conceptions related to teacher-guided lessons were significant after the practicum. These results imply that Korean preservice teachers still place value on the traditional perspective, even though constructivism dominates the current educational policies of Korea.

*Keywords:* constructivism; preservice teachers; teacher efficacy; teaching and learning conceptions; practicum.

MESC Classification: B59

MSC2010 Classification: 97C99

### I. INTRODUCTION

Teacher beliefs have been studied as one of the main topics in teacher education research because there are significant relationships between teachers' beliefs and their teaching practices (Borko & Putnam, 1996; Ernest, 1989; Goddard, 2003). With the contribution of

---

\* This study was supported by the Inha University.

\*\*Corresponding Author: [rykwon@inha.ac.kr](mailto:rykwon@inha.ac.kr)

earlier studies, teacher educators (Richardson, 2003; Swinkels, Koopman, & Beijaard, 2013; Tang & Hsieh, 2014; Whitbeck, 2000) arouse their interest in investigating the development of preservice teachers' beliefs through the Teacher Education Programs (TEPs). Although studies show that preservice teachers' beliefs do not change much during TEPs (Civil, 1993; Pajares, 1992; Richardson, 2003), some researchers insist that TEPs must seek desirable changes in participant teachers' beliefs or teaching practices (cf. Kwon, 2014; Grudnoff, 2011; Tatto, 1998). To investigate such changes in preservice teachers, it is necessary to investigate when and how preservice teachers develop their beliefs under their TEPs.

Field experiences are one of the most valuable components of TEPs (Allen & Wright, 2014; Vick, 2006). Although they vary in intent and approach, field experiences help preservice teachers shift their perceptions of teaching and learning (Ebby, 2000; Hill & Brodin, 2004). Research on the effects of field experiences is crucial to understand teachers and to improve teacher education programs. An international study compared practicum time length among six countries: Bulgaria, Germany, Mexico, South Korea, Taiwan, and the United States. Even if there are systemic and institutional differences, the mean number of weeks of practicum in the Korea-sampled institutions reflected the shortest field experience (only 3.8 weeks) of the six countries (Schmidt, Blömeke, & Tatto, 2011). It would be of interest to understand how such a short period for the practicum works for developing preservice teachers' beliefs about teaching and learning. This study focused on the shift in Korean preservice teachers' beliefs in this special situation.

Some researchers have developed interest in how teachers conceive teaching and learning, in that those perceptions may influence teachers' thoughts and practice (Chan & Elliot, 2004; Cheng, Chan, Tang, Cheng, 2009; Goddard, 2003; Swinkels et al., 2013). Other researchers have been concerned about efficacy beliefs as a factor in encouraging teachers' instructional effectiveness (Bandura, 1997; Goddard, 2003; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998, Tschannen-Moran & Woolfolk Hoy, 2001). However, there is insufficient empirical research associated with the practicum and various types of teachers' beliefs. The present study was an attempt to examine the psychological constructs of Teaching and Learning Conceptions (TLC) and Teacher Efficacy (TE) in Korean preservice teachers.

The development of beliefs is associated with culture-specific educational environments (Chan, 2004; Tang & Hsieh, 2014) and TE thus is subject to cultural influences (Lin & Gorrell, 2001; Kim, Lee, Park, & Park, 2014)). TE shaped by educational environments in different cultures is also related to understanding teachers and teacher commitment (Tschannen-Moran et al., 1998). Therefore, there is a need to incorporate cultural factors in research on teacher efficacy (Ho & Hau, 2004). Pintrich (2003) claimed that discoveries of similarities and disparities in the application of existing theories in different cultures

provide the chance to revise, accommodate, and expand those theories so that they can become more comprehensive. Differences in educational cultures may imply differences in the pattern and strength of TLC and TE. However, there is little information on such relationships in different countries. This study sought to quantitatively examine TLC, TE, and their relationship in Korean educational culture. The following research questions were explored:

- (1) How do TLC and TE of Korean preservice teachers change during their teaching practicum?
- (2) How are TLC related to TE of Korean preservice teachers during their teaching practicum?

## II. BACKGROUNDS

### 1. TEACHING AND LEARNING CONCEPTIONS

Teachers' beliefs are important for understanding instructional practices and improving educational processes (OECD, 2009). In particular, teachers' beliefs about teaching and learning can guide teachers' thoughts and behaviors about teaching and learning (de Vries, Jansen & van de Grift, 2013). Research on preservice teachers has evidenced that conceptions of teaching and learning, referred to as "the beliefs held by teachers about their preferred ways of teaching and learning" (Chan & Elliott, 2004, p. 819), are closely linked to their future practices (Kember & Kwan, 2000; Goddard, 2003; Pajares, 1992).

Teaching and learning conception (TLC) has been characterized by two distinctive perspectives: traditional versus constructivist (Chan & Elliott, 2004; Tondeur, Hermans, van Braak, & Valcke, 2008). This distinction has also been referred to as traditional versus process-oriented (Bolhuis & Voeten, 2004) or reception/direct transmission versus constructivist (OECD, 2009). Constructivist conceptions emphasize an active learning environment and teaching as facilitating the learning process, while the traditionalist view is associated with the teacher transferring knowledge and students receiving it. Based on this conceptual distinction, Chan and Elliot (2004) developed the Teaching and Learning Conceptions Questionnaire (TLCQ) with a sample of Hong Kong preservice teachers.

Chan and Elliot (2004) revealed that Hong Kong preservice teachers neither completely believed in the traditional nor the constructivist conceptions about teaching and learning. However, other research showed that Hong Kong preservice teachers strongly agreed with the constructivist view (Cheng, Tang, & Cheng, 2009). The effect of educational trends at the time of data collection could explain the difference between the two studies. In fact, constructivism has become popular in Hong Kong since 2005. This argument is supported

by the results found in studies with other cultures in which the TLCQ was used. For example, recent studies in Turkey (Aypay, 2011; Yilmaz & Sahin, 2011) revealed that Turkish preservice teachers agreed with the constructivist view more than the traditionalist one. Though constructivism is a factor in current global education, beliefs are affected by culture and educational environment (Choi & Kwon, 2012; Chan, 2004; Tang & Hsieh, 2014). Therefore, studies from different countries can help teacher educators understand preservice teachers' beliefs relevant to their TLC.

## 2. TEACHER EFFICACY

In his cognitive theory of social learning, Bandura (1977, 1997) conceptualized self-efficacy as a type of belief in one's capacity to perform a given task. From this perspective, teacher efficacy (TE) is defined as a teacher's "judgment of his or her abilities to bring desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (Tschannen-Moran & Hoy, 2001, p.783). Researchers have highlighted that TE has an effect on instruction as well as learning outcomes and motivation (Barr, 2005; Herman, 2000; Mojavezi & Tamiz, 2012; Nelson, 2007). Further, teachers with higher levels of efficacy have a tendency to perform better than those with lower levels of efficacy (Enochs, Scharmann, & Riggs, 1995; Tschannen-Moran & Woolfolk Hoy, 2001), and there is a positive correlation between TE and student achievement (e.g., Goddard, 2003). Thus, in order to develop preservice teachers as highly effective educators, it is essential for teacher educators to understand the process of developing preservice teachers' TE.

Although TE is a strong predictor of teachers' practices, it is difficult to measure due to the ambiguity of the notion of the construct (Bandura, 1997; Duffin, French, & Patrick, 2012; Tschannen-Moran & Woolfolk Hoy, 2001). However, most researchers in the field seem to have reached an agreement in developing an instrument for measuring teachers' sense of efficacy (e.g., Chong, Klassen, Huan, Wong, & Kates, 2010; Duffin et. al., 2012; Fives & Buehl, 2010; Knoblauch & Woolfolk Hoy, 2008), and researchers now largely use the Teachers' Sense of Efficacy Scale (TSES) developed by Tschannen-Moran and Woolfolk Hoy (2001). The TSES assesses three areas of teaching efficacy: instructional strategies, student engagement, and classroom management. There is a shortened form of the original TSES that has been used in many studies.

Recently, the TSES has been used in teacher efficacy studies under various circumstances (Knoblauch & Chase, 2014; Moulding, Stewart, Dunmeyer, 2014; O'Neill & Stephenson, 2012). For example, Moulding et al. (2014) found that elementary preservice teachers' sense of efficacy had significant correlations with perceptions of support by mentors during student teaching, and efficacy scores were significantly higher

with higher student achievement. In contrast, Knoblauch and Chase (2014) showed that student teachers' TE increased without regard to school setting (i.e., rural, suburban, and urban) during their student teaching. Further, O'Neill and Stephenson (2012) observed that personal qualities, physiological and affective states, and opportunities to practice behaviour management skills were associated with a higher sense of efficacy.

### III. METHODS

#### 1. PARTICIPANTS

The site for data collection was a university located in a metropolitan area of South Korea. The senior undergraduate and graduate preservice teachers taking a two-credit teaching practice course were invited to complete a survey twice: first in an introductory session before the practicum and second in an evaluation session after the practicum. The students were seeking teaching certificates for the secondary level (7–12th Grade).

One hundred twenty-one students completed the survey twice. Among the participants, 82 were undergraduate seniors majoring in education, 14 were undergraduate seniors not majoring in education, and 24 were graduate students. There were 76 (62.8%) female and 45 (37.2%) male students. Their ages ranged from 21 to 49, with an average age of 23.5 years ( $SD = 3.64$ ).

#### 2. INSTRUMENTS

This study used the Teaching and Learning Conception Questionnaire-Short Form (TLCQ-S) and the Teachers' Sense of Efficacy Scale-Short Form (TSES-S). The TLCQ (Chan & Elliot, 2004) and the TSES (Tschannen-Moran & Hoy, 2001) were properly modified and shortened in the Korean versions as suggested by Alkhateeb (2010) and Mpofo and Ortiz (2009). The TLCQ consisting of 30 items was developed in a sample of Hong Kong preservice teachers. To use the TLCQ in a different culture, the TLCQ-S of 16 items was developed and validated for Korean prospective teachers (Ryang & Kwon, 2014). The TLCQ-S has the two subscales of Constructivist (CON) conceptions and Traditional (TRA) conceptions, each of which has eight items. The TSES has three subscales: Student Engagement (STU), Instructional Strategies (INS), and Classroom Management (CLS). In the present study, the short version of the TSES was modified to the 9-item TSES-S. The items of the TLCQ-S and the TSES-S are provided in Appendix A and B respectively. In Appendix A, the CON items are arranged in odd numbers and the TRA items in even numbers.

## 3. JUSTIFICATION OF THE INSTRUMENTS

The factorial validity of the two instruments was tested by Structural Equation Modelling, realized by LISREL 9.10 (Jöreskog & Sörbom, 2013). The two-factor model of the TLCQ-S seemed to fit well both pre- and post-survey data. The  $\chi^2$  was significant both in pre-survey data ( $\chi^2 = 166.63$   $df = 103$ ,  $p < .001$ ) and in post-survey data ( $\chi^2 = 164.24$ ,  $df = 103$ ,  $p < .001$ ). However, after deleting one item from each subscale (Item 4 in STU, Item 10 in INS, and Item 8 in CLS), the 9 items TSES fit the three-factor model. In fact,  $\chi^2$  was significant in pre-data ( $\chi^2 = 36.89$ ,  $df = 24$ ,  $p = .0450$ ) and in post-data ( $\chi^2 = 35.23$ ,  $df = 24$ ,  $p = 0.0687$ ). Other than  $\chi^2$ , the existence of factor structure is decided by various fit indices (see Table 1). All of these indices met acceptable standards for indicating model fit.

**Table 1.** Fit indices for the instruments

Instrument	Source	RMSEA	GFI	RMR	IFI	NNFI	CFI
TLCQ-S	Pre-	.071	.865	.047	.919	.904	.917
	Post-	.071	.853	.054	.960	.953	.959
TSES-S	Pre-	.067	.942	.025	.953	.926	.950
	Post-	.063	.939	.026	.972	.957	.972

Note. TLCQ-S = TLCQ-Short Form; TSES-S = TSES-Short Form; RMSEA = Root Mean Square of Error Approximation; GFI = Goodness of Fit Index; RMR = Root Mean Square Residual; IFI = Incremental Fit Index; NNFI = Non-Normed fit Index; CFI = Comparative Fit index.

Reliability of the two instruments was analyzed (see Table 2). The internal consistency alpha coefficients for the TLCQ-S total scale and two subscales (CON and TRA) were greater than .70 in both pre- and post-data sets. For the TSES-S, the alpha coefficients of the three subscales (INS, CLS, and STU) were not greater than .7 and the total scale reliability coefficient was above .70 in both data sets. Based on these results, the 16-item TLCQ-S is valid and reliable for use in the present research study. Indeed, by Abell, Springer, and Kamata's (2009) criterion, that the CON and the TRA become a subscale cited in the whole scale TLCQ-S. However, the subscales of the TSES-S did not demonstrate adequate reliability. Therefore, the INS, the CLS, and the STU are not considered subscales but regarded as variables describing the construct TE.

**Table 2.** Alpha coefficients of the scales

	TLC	TRA	CON	TE	INS	CLS	STU
Pre-	.897	.818	.753	.766	.561	.690	.646
Post-	.930	.884	.854	.846	.742	.706	.671

#### 4. DATA ANALYSIS

The TLCQ-S and TSES-S used a 5-point rating scale. The participants' responses were coded by a number from 1 to 5. Using a repeated *t*-test, we investigated the difference in the mean scores between pre- and post-data at the level of the subscales and individual items. We then conducted correlation analyses to examine the relationships between CON, TRA, and TE (Pearson correlation coefficients).

### IV. RESULTS

#### 1. CHANGES IN BELIEFS

The mean score for each scale and each item on the TLCQ-S and the TSES-S were examined (see Table 3). The mean scores for all subscales and most items increased after the practicum, as can be seen in the J – I column of Table 3. A decrease occurred in Item 2 of the TRA subscale, but the magnitude of the difference,  $|-0.01| = 0.01$ , was very small. The mean scores for the conception scales increased little (0.16 for CON, 0.11 for TRA) in comparison to teacher efficacy (0.32 for TE).

**Table 3.** Item and scale means ( $N = 121$ )

	Before practicum		After practicum		J – I
	Mean (I)	SD	Mean (J)	SD	
TLC	3.23	0.339	3.36	0.389	0.13
CON	4.08	0.448	4.24	0.484	0.16
1	3.89	0.825	4.22	0.713	0.33
3	3.98	0.658	4.19	0.675	0.21
5	3.94	0.745	4.1	0.723	0.16
7	4.31	0.705	4.48	0.593	0.17
9	4.23	0.642	4.36	0.606	0.13
11	4.29	0.664	4.36	0.694	0.07
13	3.89	0.883	4.03	0.806	0.14
15	4.07	0.761	4.14	0.675	0.07
TRA	2.38	0.582	2.49	0.728	0.11
2	2.44	0.826	2.43	0.973	-0.01
4	2.28	0.777	2.46	0.904	0.18
6	2.17	0.727	2.29	0.987	0.12
8	2.1	0.898	2.1	1.003	0
10	1.92	0.852	2.04	0.907	0.12
12	2.47	0.923	2.56	1.079	0.09

14	2.8	1.054	3.02	1.033	0.22
16	2.88	0.918	2.97	0.939	0.09
TE	3.51	0.385	3.83	0.425	0.32
INS	3.37	0.512	3.72	0.615	0.35
5	3.45	0.683	3.79	0.744	0.34
9	3.28	0.698	3.59	0.792	0.31
12	3.39	0.723	3.79	0.733	0.4
CLS	3.48	0.516	3.86	0.502	0.38
1	3.4	0.612	3.79	0.604	0.39
6	3.52	0.634	3.88	0.64	0.36
7	3.52	0.72	3.9	0.651	0.38
STU	3.69	0.526	3.92	0.533	0.23
2	3.65	0.642	3.88	0.69	0.23
3	3.79	0.618	4.02	0.612	0.23
11	3.61	0.789	3.85	0.749	0.24

In order to assess whether the changes observed were significant, a paired *t*-test was conducted on the pre- and post-data sets (see Table 4). The change in scores for the CON subscale and TE were significant, while the change for the TRA subscale was not significant. In other words, the preservice teachers' constructivist conception of teaching and learning and sense of efficacy significantly increased after the teaching practicum, whereas their traditionalist teaching and learning conception changed little. Among the eight CON items, five items (1, 3, 5, 7, and 11) showed significant change, while only two TRA items showed change (4 and 14). All items of the TSES-S showed significant change.

**Table 4.** Repeated sample *t*-test for the paired difference

Item	Mean	SD	Std. Error Mean	CI <sup>a</sup>		<i>t</i>	<i>df</i>	<i>p</i> <sup>b</sup>
				Lower	Upper			
TLC	-.131	.423	.039	-.054	-.208	-3.358	120	.001*
CON	-.160	.433	.039	-.238	-.082	-4.067	120	.000*
1	-.331	.934	.085	-.499	-.162	-3.892	120	.000*
3	-.207	.816	.074	-.353	-.060	-2.786	120	.006*
5	-.157	.866	.079	-.313	-.001	-1.994	120	.048*
7	-.174	.760	.069	-.310	-.037	-2.511	120	.013*
9	-.132	.658	.060	-.251	-.014	-2.212	120	.029*
11	-.066	.750	.068	-.201	.069	-.970	120	.334
13	-.140	1.003	.091	-.321	.040	-1.542	120	.126
15	-.074	.887	.081	-.234	.085	-.923	120	.358
TRA	-.098	.721	.066	-.229	.033	-1.478	118	.142
2	.008	1.099	.100	-.190	.206	.083	120	.934
4	-.182	.966	.088	-.356	-.008	-2.070	120	.041*
6	-.116	1.002	.091	-.296	.065	-1.271	120	.206



8	.000	1.140	.104	-.205	.205	.000	120	1.000
10	-.124	1.029	.094	-.309	.061	-1.325	120	.188
12	-.091	1.125	.102	-.293	.112	-.889	120	.376
14	-.215	1.112	.101	-.415	-.015	-2.125	120	.036*
16	-.091	1.190	.108	-.305	.123	-.840	120	.402
TE	-.318	.422	.038	.242	.394	-8.283	120	.000*
INS	-.344	.639	.057	-.458	-.231	-6.004	120	.000*
5	-.331	.746	.068	-.465	-.196	-4.875	120	.000*
9	-.306	1.015	.092	-.489	-.123	-3.313	120	.001*
12	-.397	.831	.076	-.546	-.247	-5.248	120	.000*
CLS	-.377	.548	.050	-.476	-.279	-7.581	120	.000*
1	-.397	.769	.070	-.535	-.258	-5.675	120	.000*
6	-.355	.694	.063	-.480	-.231	-5.636	120	.000*
7	-.380	.819	.074	-.528	-.233	-5.105	120	.000*
STU	-.231	.574	.052	-.335	-.129	-4.436	120	.000*
2	-.223	.821	.075	-.371	-.075	-2.988	120	.003*
3	-.231	.761	.069	-.368	-.094	-3.344	120	.001*
11	-.240	.837	.076	-.390	-.089	-3.150	120	.002*

Note. <sup>a</sup> 95% confidence interval of the difference (pre - post); <sup>b</sup> Two-tailed

## 2. CORRELATIONS AMONG THE SUBSCALES

To identify the relationships between the three constructs (constructivist conceptions, traditional conceptions, and teacher efficacy), Pearson's correlation analyses were conducted before and after the practicum (Table 5). There was no significant correlation between the CON and TRA subscales before the practicum, whereas after the practicum there was a significant relationship ( $r = -.222$ ). Additionally, the correlation between the CON subscale and TE became stronger after the practicum ( $r = .266$  to  $r = .480$ ), while the TRA subscale had no significant correlation with TE both before and after the practicum.

**Table 5.** Correlations among subscales

Before practicum	CON	TRA	TE
CON	1	-.151	.266**
TRA		1	-0.14
TE			1
After practicum	CON	TRA	TE
CON	1	-.222*	.480**
TRA		1	-.070
TE			1

Note. \* Correlation is significant at the .05 level (2-tailed); \*\* Correlation is significant at the .01 level (2-tailed).

## V. DISCUSSION AND CONCLUSION

In this study, the Korean secondary preservice teachers showed a tendency to strongly agree with constructivist perspectives in their conceptions of teaching and learning. This result reflects the influence of constructivism on the field of education currently in South Korea. Constructivism has infiltrated deeply into the education field of South Korea in the middle of the 1990s. Consequently, constructivism has been applied in Korea's national curriculum from 2000. Since then, constructivism has served as a conceptual framework for school education and therefore teacher education in South Korea. Apparently, teacher educators have also emphasized teaching and learning conceptions (TLC) based on constructivism and implemented these ideas in teacher efficacy beliefs (TE). During the teaching practicum, even though it is a short period, the preservice teachers in this study observed how constructivist conceptions would be realized in a school. Therefore, constructivism would have the effect of increasing preservice teachers' constructivist perceptions of teaching and learning.

This result is similar to that found in the Hong Kong studies. In Chan and Elliot's (2004) study, Hong Kong preservice teachers showed no preference for constructivist or traditionalist perspectives. However, in Cheng et al.'s (2009) study, Hong Kong preservice teachers showed strong agreement with constructivist conceptions. This difference might be due to the difference in the time periods in which the data were collected. Hong Kong researchers argued that constructivism in education was widespread around 2005 in Hong Kong. Therefore, we insist that the influence of the constructivist perspective can also be identified from TLC of Korean secondary preservice teachers in this study.

Under the umbrella of constructivism, we expected that all constructivist conception items would show a significant increase over the teaching practicum. However, as seen in Table 4, three CON items—Item 11 (stimulate student to think), Item 13 (student differences) and Item 15 (different expectation)—were not significant, while the other five CON items were significant. These three items are thought of as related to differentiated education, which can be understood as a way of realizing constructivist visions in the 2000 national curriculum revision. Since then, level-based lessons, as a method of implementing differentiated learning, have been applied to core courses such as Language Arts, English, Mathematics, and Science in most middle and high schools in Korea. We imagine that during their teaching practicum, the preservice teachers would learn to realize pedagogical ideas, such as small group strategies, communication skills, and assigning different tasks to students at different levels. To understand the non-significance of the three items, we considered preservice teachers' earlier experiences. Since they already had experienced level-based differentiated education when they were middle or high school students and this practicum was very short, the practicum may not have had an influence on their TLC

related to differentiated education.

On the contrary, the traditional conception items (TRA subscale items) were expected to be non-significant because of the power of constructivism in teacher preparation in Korea. However, Item 4 (good teaching occurs when the teacher talks the most in the classroom) and Item 14 (good students keep quiet and follow the teacher's instruction in class) showed significant change over the short practicum period. We noted that these items describe teacher-guided lessons, a traditional way of teaching and learning. Teacher respect, as a special aspect of Korean culture, may be a factor in this phenomenon. Many Korean parents still educate their children to obey teachers at school as they obey them at home. Korean preservice teachers have been exposed to this climate for a long time, and so it is natural that teaching conceptions would include giving teachers the power to lead lessons. Thus, it seems that they accept teacher-guided teaching as an effective way of teaching and learning. Here, we understand that Korean preservice teachers value the teacher's role and leadership as a fundamental idea of teaching and learning, which goes beyond the separation of constructivist and traditional ideas for educating students in a school.

We observed that the correlation between the CON subscale and Teachers' Sense of Efficacy Scale (TSES-S) was strengthened over the practicum period ( $r = .266$  to  $r = .480$ ). Thus, the teaching practicum made the association between the two stronger. Differently, the correlation between the CON and TRA subscales was not significant before the practicum ( $r = -.15$ ,  $p > .05$ ), whereas they were significant after the practicum ( $r = -.222$ ,  $p < .05$ ). The negative correlation between these two subscales is understandable given the constructs are theoretically opposite. We understand that the 4-week practicum constructed a bridge connecting the constructivist and traditional conceptions, such that they are not fully opposed to each other in Koreans. It seems that the Korean preservice teachers appreciate constructivist ideas but also accept some traditional ideas into their integrated conceptions of teaching and learning.

The present study provides an impetus for further research in the future. First, an interesting question is whether a gender gap exists in (preservice) teachers' beliefs, such as in their TLC and TE. Second, examining the relationships between teacher preparation or methods of teaching practice and teacher beliefs would also be of interest. Epistemological beliefs are considered a source of power for teachers' effectiveness (Çetin-Dindar, Kirbulut, Boz, 2014; Chan, 2004; Chan & Elliot, 2004; Tang & Hsieh, 2014). Effects of the teaching practicum on epistemological beliefs and the compromise of these different types of teacher beliefs would be worthy of investigation. Further, teacher beliefs may vary according to subject matter. Such studies mentioned above could be more precisely investigated by subject matter.

In summary, this study discusses the usefulness of teaching practice in a teacher education program to develop teacher's beliefs, even though the 4-week practicum is a

relatively short. It was observed that preservice teachers' TLC and TE increased over the teaching practicum. The relationships among constructivist conceptions, traditionalist conceptions, and teacher efficacy were also strengthened over the practicum. These results indicate that school experiences, including classroom teaching practice, are an essential component in a teacher education program to enhance preservice teachers' TLC and TE. As a final caution, sampling collected from one site limits the generalizability of the results in this study.

## REFERENCES

- Abell, N., Springer, D. W. & Kamata, A. (2009). *Developing and validating rapid assessment instruments*. Oxford University Press.
- Kwon, N. (2014). Conceptions in Teaching and Learning of Secondary Pre-service Teachers. *Journal of the Korean School Mathematics Society*, 17(3), 321-335.
- Aypay, A. (2011). The adaptation of the TLCQ and its relationships with epistemological beliefs. *Educational Sciences: Theory & Practice*, 11(1), 21-29.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Bulletin*, 84, 191-215.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Barr, L. C. (2005). *The effects of parent and teacher self-efficacy on the academic achievement motivation of preschool children*. Unpublished master's thesis, Wake Forest University.
- Bolhuis, S. & Voeten, M. J. M. (2004). Teachers' conceptions of student learning and own learning. *Teachers and Teaching: Theory and Practice*, 10(1), 77-98.
- Çetin-Dindar, A., Kirbulut, Z. D., & Boz, Y. (2014). Modelling between epistemological beliefs and constructivist learning environment. *European Journal of Teacher Education*, 37(4), 479-496.
- Chan, K. (2004). Preservice teachers' epistemological beliefs and conceptions about teaching and learning: cultural implications for research in teacher education. *Australian Journal of Teacher Education*, 29(1), 1-13.
- Chan, K. & Elliott, R. G. (2004). Relational analysis of personal epistemology and conceptions about teaching and learning. *Teaching and Teacher Education* 20, 817-831.
- Cheng, M., Chan, K. Tang, S. & Cheng, A. (2009). Pre-service teacher education students' epistemological beliefs and their conceptions of teaching. *Teaching and Teacher Education*, 25, 319-327.
- Choi, J. & Kwon, N. (2012). The general and domain-specific epistemological beliefs of Korean preservice mathematics teachers. *Asia-Pacific Education Researcher*, 21(2), 353-364.
- Chong, W. H., Klassen, R. M., Huan, V. S., Wong, I., & Kates, A. D. (2010). The relationships among school types, teacher efficacy beliefs, and academic climate: Perspective from Asian middle

- schools. *The Journal of Educational Research*, 103(3), 183-190.
- Civil, M. (1993). Prospective elementary teachers' thinking about teaching mathematics. *Journal of Mathematical Behavior*, 12, 79-109.
- de Vries, S., Jansen, E. P. W. A., & van de Grift, W. J. C. M. (2013). Profiling teachers' continuing professional development and the relation with their beliefs about learning and teaching. *Teaching and Teacher Education*, 33, 78-89.
- Duffin, L. C., French, B. F., & Patrick, H. (2012). The teachers' sense of efficacy scale: Confirming the factor structure with beginning pre-service teachers. *Teaching and Teacher Education*, 28, 827-834.
- Ebby, C. B. (2000). Learning to teach mathematics differently: The interaction between coursework and fieldwork for preservice teachers. *Journal of Mathematics Teacher Education*, 3, 69-97.
- Enochs, L. G., Scharmann, L. C., & Riggs, I. M. (1995). The relationship of pupil control to preservice elementary science teacher self-efficacy and outcome expectancy. *Science Education*, 79(1), 63-75.
- Ernest, P. (1989). The knowledge, beliefs, and attitudes of the mathematics teacher: A model. *Journal of Education for Teaching*, 15, 13-34.
- Fives, H., & Buehl, M. M. (2010). Examining the factor structure of the teachers' sense of efficacy scale. *The Journal of Experimental Education*, 78, 118-134.
- Goddard, R. D. (2003). The impact of schools on teacher beliefs, influence, and student achievement: the role of collective efficacy beliefs. In J. Raths & A. C. McAninch (Eds.), *Teacher beliefs and classroom performance: The impact of teacher education* (pp.183-202). Greenwich, CT: Information Age Publishing Inc.
- Grudnoff, L. (2011). Rethinking the practicum: limitations and possibilities. *Asia-Pacific Journal of Teacher Education*, 39(3), 223-234.
- Herman, P. (2000). *Teacher experience and teacher efficacy: Relations to student motivation and achievement*. Unpublished doctoral dissertation. University of North Carolina at Chapel Hill.
- Hill, G., & Brodin, K. L. (2004). Physical education teachers' perceptions of the adequacy of university course work in preparation for teaching. *Physical Educator*, 61(2), 74-87.
- Ho, I. T., & Hau, K. (2004). Australian and Chinese efficacy: Similarities and differences in personal instruction, discipline, guidance efficacy and beliefs in external determinants. *Teaching and Teacher Efficacy*, 20(3), 313-323.
- Kember, D. & Kwan, K. (2000). Lecturer's approaches to teaching and their relationship to conceptions of good teaching. *Instructional Science*, 28, 469-490.
- Kim, D., Lee, K., Park, M., & Park, J. (2014). Korean mathematics teachers' views on Education and teacher efficacy. *School Mathematics*, 16(4), 745-761.
- Knoblauch, D., & Woolfolk Hoy, A. (2008). "Maybe I can teach those kids" The influence of contextual factors on student teachers' efficacy beliefs. *Teaching and Teacher Education*, 24, 166-179.

- Knoblauch, D., & Chase, M. A. (2014). Rural, suburban, and urban schools: The impact of school setting on the efficacy beliefs and attributions of student teachers. *Teaching and Teacher Education, 45*, 104-114.
- Lin, H., & Gorrell, J. (2002). Influence of culture and education on U.S. and Taiwan preservice teachers' efficacy beliefs. *Journal of Educational Research, 96*(1), 37-46.
- Mojavezi, A. & Tamiz, M. P. (2012). The Impact of Teacher Self-efficacy on the Students' Motivation and Achievement. *Theory and Practice in Language Studies, 2*(3), 483-491.
- Moulding, L. R., Stewart P. W, & Dunmeyer, M. L. (2014). Pre-service teachers' sense of efficacy: Relationship to academic ability, student teaching placement characteristics, and mentor support. *Teaching and Teacher Education, 41*, 60-66.
- Mpofu, E., & Ortiz, S. (2009). Equitable assessment practices in diverse contexts, In E. Grigorenko (Ed.), *Multicultural psychoeducational assessment* (pp. 41-76). New York: Springer Publishing Company.
- Nelson, S. L. (2007). *Teacher efficacy and student motivation: A link to achievement in elementary mathematics*. Unpublished doctoral dissertation, University of South Dakota.
- OECD (2009). *Creating effective teaching and learning environments: First results from TALIS*. Paris: Organisation for Economic Co-operation and Development.
- O'Neill, S. & Stephenson, J. (2012). Exploring Australian pre-service teachers' sense of efficacy, its sources, and some possible influences. *Teaching and Teacher Education, 28*, 535-545.
- Osborne, J. W., & Costello, A. B. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment Research & Evaluation, 10*(7), 1-9.
- Pajares, M. F. (1992). Teachers' beliefs and educational research: cleaning up a messy construct. *Review of Educational Research, 62*(3), 307-332.
- Prawat, R. S. (1992). Teachers' beliefs about teaching and learning: A constructivist perspective. *American Journal of Education, 100*(3), 354-395.
- Ryang, D. & Kwon, N. (2014). The development of the teaching and learning conceptions questionnaire short form. *The Journal of Korean Teacher Education, 31*(3), 81-101.
- Richardson, V. (2003). Preservice teachers' beliefs. In J. Raths & A. C. McAninch (Eds.), *Teacher beliefs and classroom performance: The impact of teacher education* (pp.1-22). Greenwich, CT: Information Age Publishing Inc.
- Swinkels, M. F. J., Koopman, M., & Beijaard, D. (2013). Student teachers' development of learning-focused conceptions. *Teaching and Teacher Education, 34*, 26-37.
- Tang, S., & Hsieh, F. (2014). The cultural notion of teacher education: Future lower secondary teachers' beliefs on the nature of mathematics, the learning of mathematics and mathematics achievement. In S. Blömeke, F. Hsieh, G. Kaiser, & W. H. Schmidt (Eds.), *International perspectives on teacher knowledge, beliefs and opportunities to learn* (pp. 231-253). New York, London: Springer.

- Tatto, M. T. (1998). The influence of teacher education on teachers' beliefs about purposes of education, roles, and practice. *Journal of Teacher Education, 49*(1), 66-77.
- Tondeur, J., Hermans, R., van Braak, J., & Valcke, M. (2008). Exploring the link between teachers' educational belief profiles and different types of computer use in the classroom. *Computers in Human Behavior, 24*, 2541-2553.
- Tschannen-Moran, M., Woolfolk Hoy, A. (2001). Teacher efficacy: capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805.
- Whitbeck, D. A. (2000). Born to be a teacher: What am I doing in a college of education? *Journal of Research in Childhood Education, 15*, 129-136.
- Woolfolk Hoy, A., & Burke Spero, R. (2005). Changes in teacher efficacy during the early years of teaching: A comparison of four measures. *Teaching and Teacher Education, 21*, 343-356.
- Yilmaz, H. & Sahin, S. (2011). Pre-service teachers' epistemological beliefs and conceptions of teaching. *Australian Journal of Teacher Education, 36*(1), 73-88.

**Appendix 1. Teaching and Learning Conceptions Questionnaire-Short Form**

For each item below, express your feelings by using the following scale:

1 – Strongly Disagree

2 – Disagree

3 – Uncertain

4 – Agree

5 – Strongly Agree

1. Good teachers always encourage students to think for answers themselves.
2. A teacher's task is to correct learning misconceptions of students right away instead of verifying them for themselves.
3. Effective teaching encourages more discussion and hands on activities for students.
4. Good teaching occurs when the teacher talks most in the classroom.
5. The focus of teaching is to help students construct knowledge from their learning experience instead of knowledge communication.
6. Teaching is to provide students with accurate and complete knowledge rather than encourage them to discover it.
7. The ideas of students are important and should be carefully considered.
8. It is best if teachers exercise as much authority as possible in the classroom.
9. Learning means students have ample opportunities to explore, discuss and express their ideas.
10. Learning to teach simply means practicing the ideas from lecturers without questioning them.
11. Good classrooms have a democratic and acceptable atmosphere that stimulates students to think and interact.
12. Students have to be called on all the time to keep them under control.
13. Every child is unique or special and deserves an education tailored to his or her particular needs.
14. Good students keep quiet and follow teacher's instruction in class.
15. Different objectives and expectations in learning should be applied to different students.
16. No learning can take place unless students are controlled.



**Appendix 2. Teachers' Sense of Efficacy Beliefs-Short Form (9-Items)**

For each item below, express your feelings by using the following scale:

- 1 – Not well at all
- 2 – Not well
- 3 – Just Well
- 4 – Very well
- 5 – Extremely well

**Instructional Strategies (INS)**

- 1 (5) To what extent can you craft good questions for your students?
- 2 (9) How much can you use a variety of assessment strategies?
- 3 (12) How well can you implement alternative strategies in your classroom?

**Classroom Management (CLS)**

- 4 (1) How much can you do to control disruptive behavior in the classroom?
- 5 (6) How much can you do to get children to follow classroom rules?
- 6 (7) How much can you do to calm a student who is disruptive or noisy?

**Student Engagement (STU)**

- 7 (2) How much can you do to motivate students who show low interest in school work?
- 8 (3) How much can you do to get students to believe they can do well in school work?
- 9 (11) How much can you assist families in helping their children do well in school?

Note. A number in the parentheses beside the item number indicates the item number in the original instrument by Tschannen-Moran and Hoy (2001).