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# The Mediating Effect of Creative Personality in the Relationship between Childcare Teacher's Efficacy and Creative Teaching Behaviour \*

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L'EFFETTO DI MEDIAZIONE DELLA PERSONALITÀ CREATIVA  
NELLA RELAZIONE TRA L'EFFICACIA DEGLI INSEGNANTI  
DI SCUOLA DELL'INFANZIA E IL COMPORTAMENTO  
DIDATTICO CREATIVO

## ABSTRACT

*The purpose of this study is to identify the mediating effect of creative personality in the relationship between childcare teachers' efficacy and creative teaching behavior. The participants of the study were 300 childcare teachers and selected the data between October 14 to 22, 2020. The study results were as follows. First, it evidenced positive correlations among efficacy, creative teaching behavior, and creative personality. Therefore, when childcare teachers show higher efficacy and creative personality levels, creative teaching behavior levels are likely to be higher. Second, childcare teachers' efficacy directly affected creative teaching behaviors and creative personality, which also directly affected crea-*

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*tive teaching behavior. Third, creative personality partially mediated between efficacy and creative teaching behaviors. As the childcare field continues to emphasize creative teaching behaviors, it must create an environment where childcare teachers can improve their efficacy and develop their creative personalities. Furthermore, educational programs should encourage teachers to enhance their efficacy and express their creative personalities.*

*Keywords:* Childcare teacher; Childcare teachers' efficacy; Creative personality; Creative teaching behaviour.

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## 1. INTRODUCTION

Notions of a future society often involve a super-connected and meta-cognitive society that converges and transcends knowledge limitations across different disciplines, including digital, bio-related, physics-related, and humanities-related fields. Many predict that artificial intelligence will cause job loss but also the creation of new jobs. They also forecast that machines will replace humans in physical and knowledge-based labour markets. Adaption to a new society entails creativity, diversity and flexibility regarding divergent aspects. Among these, creativity, as a construct, is indispensable for talents in future, as it incorporates individuals' abilities and personalities to create innovative products for the new era (Lee, 2002).

Rather than being an inborn talent, creativity, which may be necessary during the certain era is cultivated through education. Therefore, only an education system that can nurture creativity could develop talents who can actively respond to the challenges of a new society. Creativity involves solving problems by upholding appropriate values and utilising thinking power within different social situations and also accommodating and responding to different cultural needs (Lee, Park, & Choi, 2012).

Creativity is recognized as a major ability to lead the development of information and science and technology, and environmental support is required to recognize and cultivate its importance in the educational field (Jeon, Kim, & Yoon, 2003; Jeon & Kim, 2014). Since 2010, Korea has also led creative and personality education in a policy manner and has established a future curriculum (Lee & Kim, 2017). Through the revision of the 2019 Nuri course, the curriculum of 'child-centered, play-centered' was formed, and the teacher-led curriculum is aiming to cultivate 'autonomy and creativity of children. This is a curriculum in which children develop creativity while transforming and creating play in their own way.

The teachers' role in the revised Nuri course should play a role in enhancing children's autonomy and creativity (Ministry of Education & Ministry of Health and Welfare, 2019).

Creativity researchers have suggested that infancy is the optimal time for developing creativity and creative inclinations (Jeon, 2000; Lee & Yu, 2010; Lee & Han, 2016). We must reflect upon the importance teachers' roles in guiding infants (Bae, 2014). In short, the appropriateness of any teaching behaviours or methodologies for nurturing creativity should be ensured.

Research should examine creative teaching among infant teachers because creativity is often cultivated through education, and furthermore, creativity education can be conducted much more effectively during infancy (Koh, 2003). In this regard, the term «creative teaching behaviour» describes any teaching behaviours aimed at improving students' creativity. One way of helping infants form creative abilities and attitudes involve empowering them to freely express their thoughts in a creative classroom setting and enabling them to demonstrate specific creative thinking methods (Renzulli, 1992; Choi, 2010). Kaufman (2010) defined creative teaching behaviour as being related to the outcomes of infants' day works and stated that it helps to expand infants' potential (Kim, 2010). Cropley (2004) defined creative behaviour as cognitive support that provides wide-ranging knowledge to help learners develop divergent thinking. Simultaneously, it also encompasses affective support for promoting open and intrinsic motivations among them and helping them focus on their tasks (Lee, Choi, & Park, 2004).

Previous creative teaching behaviour studies have been divided into creative teaching and creativity nurturing. The former approach involves teaching creatively and imaginatively in order to allow infants to learn materials in a fun and effective way. In short, this teaching behaviour enables teachers to use professional and creative teaching methods to inspire infants, thus promoting effective teaching (Woods, 1990; Halliwell, 1993). The latter approach promotes «creative» teaching, where the teacher seeks to develop a creative perspective of the infant and promotes creative thinking and behaviour. The former is teacher-oriented, while the latter is infant-oriented. While the two approaches are closely related, teaching for creativity encompasses teaching creatively (Jeffrey & Craft, 2004). Because of the nature of teachers' roles, where they are required to respond to multiple concurrent situations every day, it is important for teachers to engage with creative features through everyday classroom activities. Such creative teaching behaviour often influences the quality of their classroom contents (Kang & Lee, 2018).

Teaching immersion is one of the variables affecting such creative teaching activities (So, 2011), teacher efficacy and job-related factors (Han & Kong, 2011; Paik and Kang, 2014), creative leadership, and creative personality (Joo, 2018). Studies on teacher efficacy and creative teaching have examined how teaching immersion and teacher efficacy influence creative teaching behaviour (Kwon, Hwang, & Park, 2016), how infant teachers' creativity and teaching efficacy can influence creative teaching behaviour (Kim, 2020), and how teaching behaviour yields a mediating effect on the relationship between teaching immersion and teacher efficacy (Paik & Oh, 2013; Kim & Seo, 2015). A previous study on the relationship between childcare teachers' teaching efficacy and creative teaching behaviour (Han & Lim, 2003; Kwon, Hwang, & Paik 2016) evidenced a positive influencing relationship between the two variables. Kim, Kim, and Han (2009) reported that there is a significant correlation between creative personality, teacher efficacy, and creative teaching behaviour. Koh (2003) reported that creative personalities differ depending on the amount of teacher training and program participation and the number of courses in various subjects. Son (2017) reported a high correlation between creativity and creative teaching behaviour.

The variable of teacher efficacy promotes creative teaching and directly influences creativity development among infants (Hoy and Spero, 2005; Joo & Kim, 2014). As an important factor, teacher efficacy decides the quality of education, and it is expressed through creative teaching. It determines the contents of and experiences offered within the endeavours aimed at promoting infant creativity (Ashton, 1984). Teacher efficacy encompasses teachers' belief that they can positively influence the learning processes of their students, especially those with low motivation or unruly behaviours (Guskey & Passaro, 1994). Teachers having high teacher efficacy tend to make democratic decisions regarding their students by actively involving them in setting goals and strategies (Bandura, 1986). The degree of teacher efficacy in relation to teachers' role influences teaching activities and students' learning motivation and academic achievement (Kang & Lew, 2014). Park and Lee (2013) defined childcare teacher efficacy as childcare teachers' conviction that they could lead infants in the right direction based on their teaching objectives. Hu (2018) defined this concept as teachers' conviction, regarding their competency, that they could initiate positive interactions with infants and the evaluation and expectation that they could positively influence the entire development process of infants in their care based on the objectives of the education. In short, childcare teacher efficacy refers to teachers' inner conviction that they can establish goals in order to tackle tasks and also organise and perform any actions necessary for achieving these goals in their classrooms.



Creativity should be promoted in open environments without psychological threats. Teachers, who can be considered as an «environmental factor» that enlivens infants' creativity, play an important teacher's role (Han *et al.*, 2004). Infant teachers' creativity is considered to be as important as the infants' creativity and is closely related to this factor. Teachers who possess creative personalities tend to approach infants with recognition, openness, creative ideas, and teaching methods, and they pay attention to infants who show enthusiasm and immersion (Son & Park, 2012). In this regard, individual characteristics as well as the attitudes and creative propensities of infant teachers interact with each other and influence their creative teaching behaviour (Lim, 2008).

Lee (2002) argued that creativity is a combination of creative abilities and creative personalities. She observed that developing a creative personality was important for developing creative thinking and that it is closely related to environments where creativity is rewarded (Lee & Lew, 2014). However, the ability to perform creative thinking does not guarantee that creative thinking will be developed in a given situation. A balance should be developed between creative abilities and creative personalities in order to obtain a creative outcome (Lee, 2002). Cropley (2001) stated that creativity requires creative thinking and personality traits that express creativity (Lee *et al.*, 2004). Teachers do not just care for infants but also teach certain attitudes and skills aimed at developing creative thinking and problem-solving abilities in order to develop infants' creativity. Infant teachers' creative personalities and the creative teaching behaviours can help to promote creativity among infants, and the relationship between them has significant meaning (Kang & Lew, 2014). Studies on the relationship between creative personality and creative teaching behaviour (Park, Kim, & Yi, 2005; Park, 2020) confirmed that teachers with creative personalities showed more creative teaching behaviours.

One important teaching ability, which aims to influence teaching quality, is teachers' creative personalities, which can help them improve creativity among infants. Teachers with creativity tend to lead teacher-learning courses more effectively, and this, in turn, leads them to have higher teaching efficacy (Kim & Paik, 2009). Thus, creative personality has been correlated to higher teacher efficacy (Kim & Noh, 2007; Kang & Lew, 2014), and the teachers with high teacher efficacy tend to show an open attitude to different teaching methods. Common characteristics of people with high teacher efficacy can reportedly positively influence creative personality traits such as tenacity, perseverance, effort, ability to cope with failure in a healthy way, use of cognitive strategies, tendency to try new teaching methods, and so on. It can also reportedly positively

influence the creative personalities that helps to offer flexible and unique solutions (Lee, 2010; Jeong, 2011). Infant teachers who want to conduct creative classes should attempt to understand a given situation or their classroom's atmosphere in order to understand infants' perspectives; furthermore, they should attempt to implement changes in educational activities through reflective thinking (Kim & Paik, 2009).

It can be deduced that different variables that affect creative teaching behaviour are mutually influenced and will react concurrently rather than independently (Joo & Kim, 2014). Teachers should consider the interests of infants and interact with them using their professional knowledge and creative teaching methods in order to develop their creativity. These teacher capabilities, including teacher efficacy, creative personality, and creative teaching behaviours, can positively influence creativity development among infants (Kim, 2010; Choi & Yoon, 2015). Therefore, variables that affect creativity development among infants should be examined more specifically. Kim and Seo (2016), who examined creative personality's mediating effect on teaching practice, argued that, when teacher efficacy is combined with creative personality, it enhances teaching performance, and furthermore, that creative personality plays a part-parameter role in how teacher efficacy influences teaching performance. In her study, Kim (2020) argued that infant teachers' creative personalities can indirectly affect their creative teaching behaviours through teacher efficacy. Prior studies' analyses showed that the relationship between teacher efficacy and creative teaching behaviour and the relationship between creative personality and creative teaching behaviour were significantly correlated with each other. As an individual variable in creative teaching, creative personality should be emphasised (Amabile, 1983); furthermore, it influences creative teaching behaviour in combination with teacher efficacy (Kim & Seo, 2016).

In «creativity education», the interest in the teachers is relatively weak compared to the interest in the learner, so the approach to the teacher's variables is necessary (Lee & Choi, 2013). In the field, childcare teacher efficacy, creative teaching behaviour, and creative personality are related to teacher competence; therefore, improving these variables can directly affect infant creativity development. Because examining the relationships between these variants is important, this study aims to determine whether childcare teacher efficacy can directly influence creative teaching or whether it can indirectly influence through the mediating effect of creative personalities. Therefore, this study established the following research questions:

- *Research question 1.* What are the correlations between childcare teacher efficacy, creative teaching behaviour, and creative personality?

- *Research question 2.* Does childcare teacher efficacy directly influence creative teaching behaviour?
- *Research question 3.* Does childcare teacher efficacy directly influence creative personality?
- *Research question 4.* Does creative personality directly influence creative teaching behaviour?
- *Research question 5.* Does childcare teacher efficacy influence creative teaching behaviour through the mediating effects of creative personality?

## 2. METHODOLOGY

### 2.1. Subjects

This study's participants were 300 childcare teachers working in children's homes in Seoul and Gyeonggi-do, South Korea. The subjects' employers included the government, corporate institutions, and private children's homes; almost all the teachers had tertiary education. The teachers work experience was evenly distributed between less than three years and more than ten years.

### 2.2. Measuring tools

#### 2.2.1. The childcare teacher efficacy test

*Table 1. – Childcare teacher efficacy test tool components.*

AREA	SUB-AREA	NUMBER OF ITEMS	RELIABILITY (CRONBACH $\alpha$ )
Individual efficacy	Confidence	3	.740
	Emotional efficacy	3	.755
	Self-directed	6	.844
Teaching efficacy	Class teaching (teaching-learning)	5	.851
	Preference based on task difficulty	3	.284
Nurturing efficacy	Caring	5	.840
	Infant Interaction	5	.868
TOTAL		30	.907

Kim and Lee's (2019) childcare teacher efficacy test was used for measuring the efficacy of this study's participating childcare teachers. *Table 1* presents the components and reliability of this study. It includes three analysis areas: individual, teaching, and nurturing efficacy; each area has sub-areas. The questions consisted of 30 self-administered items on a 5-point Likert scale. The original test reliability (Cronbach  $\alpha$ ) was as follows for each component: confidence: .66; emotional efficacy: .78; self-directedness: .83; teaching class: .86; preference to task difficulty: .52; caring: .79; and infant interaction: .87. Furthermore, the overall teacher efficacy reliability was (Cronbach  $\alpha$ ) .897. The reliability identified in this study (Cronbach  $\alpha$ ) was .907.

### 2.2.2. Creative teaching behaviour test

*Table 2. – The creative teaching behaviour test tool components.*

AREA	SUB-AREA	NUMBER OF ITEMS	RELIABILITY (CRONBACH $\alpha$ )
Cognitive	Divergent thinking and behaviour	8	.889
	General knowledge and thinking	7	.857
	Knowledge and skills in specific areas	4	.765
Personality	Focusing on tasks	3	.735
	Motivation	5	.830
	Permissibility of openness and ambiguity	8	.817
TOTAL		35	.961

This study utilised a creative teaching behaviour test (translated, revised, and complimented by Paik and Kim [2008]) to assess creative teaching behaviour levels in this study. This test utilised two domains: cognitive and personality. The subfactors of the cognitive sphere were as follows: (1) divergent thinking and behaviour, (2) general knowledge and thinking bases, and (3) knowledge bases and skills in specific areas. The subfactors of the personality sphere were as follows: focusing on tasks, motivation, and the permissibility of openness and ambiguity. The original test reliability (Cronbach  $\alpha$ ) for the relevant components was shown as follows: divergent thinking and behaviour: .869; general knowledge and thinking: .816; knowledge and skills in specific areas: .782; focusing on tasks: .601; motivation: .758, and permissibility of openness and ambiguity: .810. The overall reliability (Cronbach  $\alpha$ ) for creative teaching behaviour was .945.

The creative teaching behaviour test tool contained 35 self-administered items on a 5-point Likert scale. *Table 2* presents the relevant reliability (Cronbach  $\alpha$ ) and test components.

### 2.2.3. Creative personality test

*Table 3. – The creative personality test tool components.*

AREA	SUB-AREA	NUMBER OF ITEMS	RELIABILITY (CRONBACH $\alpha$ )
Creative personality	Curiosity	5	.838
	Independence/Venturesomeness	5	.805
	Task obsession	5	.739
	Sensitivity	5	.684
	Humour	5	.722
	Problem-solving leadership	5	.765
TOTAL		30	.942

The creative personality test tool taken from K-ICT (Standardised Creativity Test for Adults), which was developed by Lee (2014), was used to assess creative personality development among childcare teachers. The subfactors of this creative personality test are curiosity, independence/venturesomeness, task obsession, sensitivity, humour, and problem-solving leadership. This test was conducted using a self-administered 5-point Likert scale. The reliability of the original test (Cronbach  $\alpha$ ) was as follows: curiosity: .75; independence/venturesomeness: .71; task obsession: .70; sensitivity: .67; humour: .78; and problem-solving leadership: .63. The overall reliability (Cronbach  $\alpha$ ) was .774. *Table 3* presents the test tool components.

### 2.3. *Research procedures and data processing*

The test was administered to 300 childcare teachers at nurseries in Seoul and Gyeonggi-do between October 14 and October 22, 2020. The online test was conducted online to measure childcare teacher efficacy, creative teaching behaviour, and creative personality. The data collected were analysed using SPSS 22.0 and AMOS 22.0 statistical programs.

*First*, a frequency analysis was performed to identify the demographic characteristics of the research subjects.

*Second*, the descriptive statistics, mean, standard deviation, skewness, and kurtosis, were calculated based on the analysis for childcare teacher efficacy, creative personality, and creative teaching behaviour.

*Third*, Cronbach  $\alpha$  values were calculated to verify the credibility of the test tools for childcare teacher efficacy, creative personality, and creative teaching behaviours.

*Fourth*, the Pearson correlation value was calculated to identify the correlation between childcare teachers' efficacy, creative personality, and creative teaching behaviour.

*Fifth*, the significance of indirect effects was calculated by using a bootstrapping method to determine the effect of childcare teacher efficacy on creative teaching behaviour and the mediating effect of creative personality on the relationship between these variables.

### 3. RESEARCH RESULTS

#### 3.1. *The descriptive statistics of the measured variables*

The main variables in this study model were childcare teacher efficacy, creative personality, creative teaching behaviour. The descriptive statistics, including the mean, standard deviation, skewness, and kurtosis, were calculated based on the measurements. The analysis results for each variable's skewness and kurtosis for checking and confirming the main variables' normality and the skewness of all variables was less than the absolute value of 2. Therefore, the analysis results met the standard. The kurtosis was also less than the absolute value of 3-4, which was within normal distribution levels in accordance with the standard values.

#### 3.2. *The correlation of the measured variables*

Correlation analysis was conducted to identify how main variables, including childcare teacher efficacy, creative teaching behaviour, and creative personality, were correlated with each other. The analysis results showed that the childcare teacher efficacy subfactors, confidence, self-directed, teaching class, preference to task difficulty, caring, and infant interaction, had a statically significant correlation with the subfactors of the other variables. However, emotional efficacy had a negative correlation with the other subfactors. Furthermore, childcare teachers' emotional efficacy was not

correlated with the subfactors of creative teaching behaviour and the subfactors of creative personality. The correlation between creative teaching behaviour and divergent thinking and behaviour had the highest significance ( $r = .922, p < .01$ ). Creative personality and task obsession also had a positive correlation ( $r = .876, p < .01$ ). Regarding correlations between the main variables, childcare teacher efficacy and creative teaching behaviour had a positive relationship ( $r = .763, p < .01$ ). Childcare teacher efficacy was also correlated with creative personality ( $r = .640, p < .01$ ), and creative teaching behaviour and creative personality were also positively correlated with each other ( $r = .757, p < .01$ ).

Regarding the relationship between childcare teacher efficacy and creative teaching behaviour, infant interaction, a subfactor of childcare teacher efficacy, had a positive relationship with divergent thinking and behaviour, a subfactor of creative teaching behaviour ( $r = .704, p < .01$ ). Regarding the relationship between childcare teacher efficacy and creative personality, infant interaction, a subfactor of childcare teacher efficacy, had a positive relationship with problem-solving leadership, a subfactor of creative personality ( $r = .592, p < .01$ ). This shows that teachers' respect for others, their care for the community, and their willingness to solve problems creatively influences their infant interactions. Furthermore, teachers with a higher sense of efficacy tended to show more creative teaching behaviour, while teachers with creative personalities tended to solve problems creatively through various interaction styles in different situations while on the job.

Regarding the relationship between childcare teacher efficacy and creative teaching behaviour, infant interaction, a subfactor of childcare teacher efficacy, showed a positive relationship with divergent thinking and behaviour, a subfactor of creative teaching behaviour ( $r = .704, p < .01$ ). This result implied that the teachers who were more inquisitive and asked more questions tended to solve different problems that occurred in the course of teaching-learning processes more creatively, while also showing teaching behaviour that supported infants in trying new and unique techniques.

### 3.3. *Validating the research model*

#### 3.3.1. The appropriateness of the research model

Confirmatory factor analysis was used to validate the research model's appropriateness, and structural equations were used for analysing the structural models regarding childcare teacher's efficacy, creative teaching

behaviour, and creative personality. Furthermore, structural models were constructed to investigate the mediating effects between childcare teacher efficacy, creative teaching behaviour, and creative personality. By applying the bootstrapping method, the significance of the indirect effects was confirmed (at 95% of the confidence interval) by resampling 2,000 times. Table 4 shows the analysis model for the indirect and direct effects of creative personality as a mediator for childcare teacher efficacy's influence on creative teaching behaviour.

The  $\chi^2$  of the direct and indirect effects of the model was 386.667, and  $\chi^2/df$  was 2.595. The overall appropriateness was as follows: TLI .939; CFI: .946. These were lower than the recommended standard value of .9. RMSEA was .073, which was lower than the recommended value of .08. These results confirmed the appropriateness of the research model for the sample data.

Table 4. – The appropriateness of the research model.

Research model	$\chi^2$	df	$\chi^2/df$	TLI	CFI	RMSEA
	386.667	149	2.595	.939	.946	.073
Recommended standard			4 < 6	> .9	> .9	< .08

### 3.3.2. The direct effects of the research model

Table 5 presents the estimates of the direct effect parameters for childcare teacher efficacy, creative teaching behaviour, and creative personality within the structural model.

Childcare teacher efficacy significantly influenced creative personality ( $\beta = .689, p < .001$ ) and creative teaching behaviour  $\beta = .519, p < .001$ ). Furthermore, the creative personality also significantly influenced creative teaching behaviour ( $\beta = .451, p < .001$ ). Thus, childcare teacher efficacy influences creative personality and creative teaching behaviour, while creative personality influences creative teaching behaviour. Therefore, childcare teacher efficacy can directly affect creative teaching behaviour.

Table 5. – The estimates of the direct effect parameters in the research model.

	B	$\beta$	S.E.	C.R.
Creative personality <- childcare teacher efficacy	1.205	.689	.195	6.171***
Creative teaching behaviour <- childcare teacher efficacy	.864	.519	.148	5.826***
Creative teaching behaviour <- creative personality	.429	.451	.050	8.572***

Note: \*\*\* =  $p < .001$ .



### 3.3.3. The mediating effect of the research model

Analysis results for the effect of childcare teacher efficacy on creative teaching behaviour and the mediating effect of creative personality regarding childcare teacher efficacy's relationship with creative teaching behaviour were as follows. Measurement of the research model's direct and indirect effects were determined based on 95% of confidence intervals. *Table 6* shows the total effect, direct effect, and indirect effect of the analysis results.

*Table 6. – The mediating effect estimates of the research model.*

	TOTAL EFFECT	DIRECT EFFECT	INDIRECT EFFECT	DIRECT CONFIDENCE INTERVAL
Creative personality <- childcare teacher efficacy	.689	.689	.000	.000-.000
Creative teaching behaviour <- childcare teacher efficacy	.830	.519	.311	.311-.900***
Creative teaching behaviour <- creative personality	.451	.451	.000	.000-.000

Note: \*\*\* =  $p < .001$ .

The total effect, direct effect, and indirect effect for creative personality's mediating effect on the relationship between childcare teacher efficacy and creative teaching behaviour were .830, .519, and .311, respectively. This confirmed that creative personality partially mediated between childcare teacher efficacy and creative teaching behaviour. The indirect confidence interval value was .311-.900, which was significant at the significance level of  $p < .001$ . Thus, creative personality partially mediated the effect of childcare teacher efficacy on creative teaching behaviour.

*Figure 1* and *Figure 2* show the analysis for the direct and mediating effect of the research model. The standardised coefficients are shown in *Figure 1*, and the unstandardised coefficients are shown in *Figure 2*.

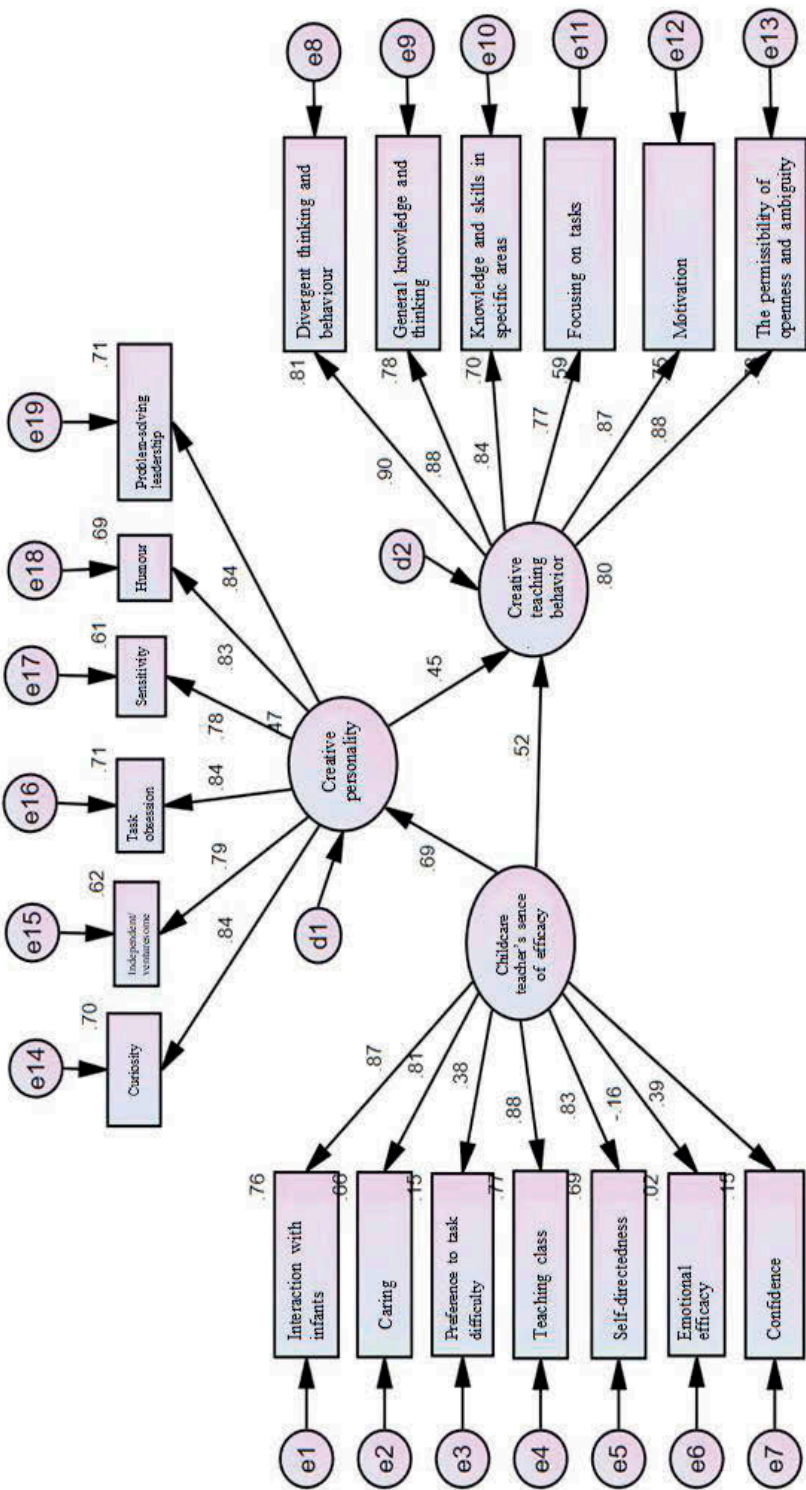


Figure 1. – Research model (standardised coefficients).

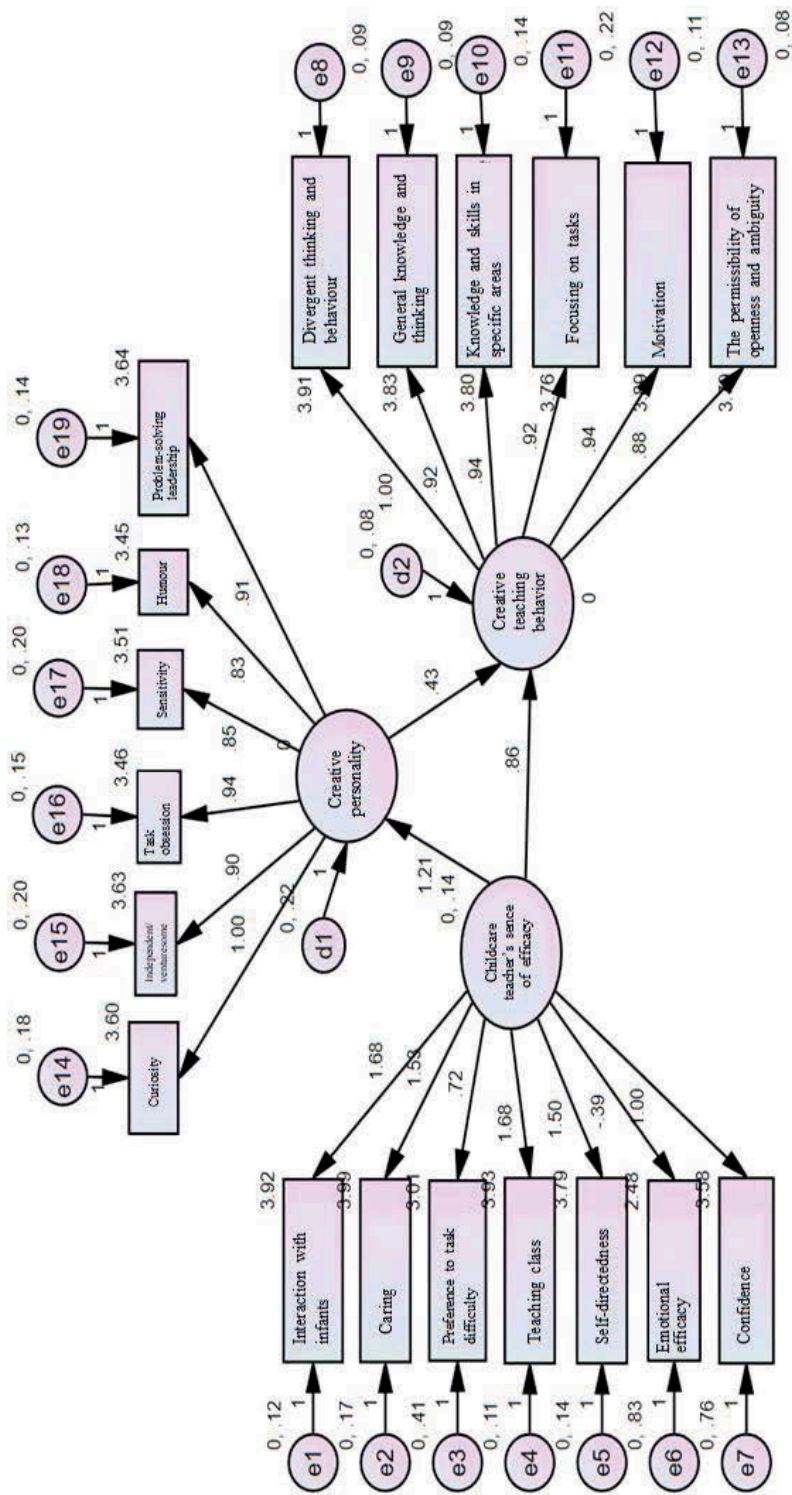


Figure 2. – Research model (unstandardised coefficients).

#### 4. DISCUSSION AND CONCLUSION

This study investigated whether childcare teacher efficacy could directly affect creative teaching behaviour and whether there was creative personality had any mediating effects on the relationship between childcare teacher efficacy and creative teaching behaviour. Comparing this study's results with previous studies' results, the following insights could be drawn.

*First*, childcare teacher efficacy, creative teaching, and creative personality shared positive relationships. In particular, childcare teacher efficacy and creative teaching behaviour shared a significant positive relationship; these findings are similar to those concerning the positive relationship between kindergarten teacher efficacy and creative teacher behaviour (Kwon, Hwang, & Park, 2016). These results also shared similarities with those of Paik and Kang (2013), who evidenced positive significant relationships between job satisfaction, teacher efficacy, and teacher creativity. In short, when teachers have greater confidence and expectations about their capabilities and expend greater efforts on their activities, they become more open and curious about their job, more likely to acquire necessary classroom-oriented knowledge and skills, and more likely to focus on teaching activities in order to tackle their tasks (Kim & Seo, 2016).

Furthermore, childcare teacher efficacy and creative personality shared a positive relationship. This finding agreed with the results of Kang and Lew (2014) which evidenced positive relationships between teacher efficacy, self-concept, and creative personality among student teachers. It also agreed with the research results of Park, Lee, and Ha (2009), which showed positive relationships between self-efficacy, general efficacy, and creative personality among infant teachers.

Creative personality and creative teaching behaviour shared a significant positive relationship. This agreed with the results of Park, Kim, and Yi (2005), which revealed a positive relationship between creative personality among infant teachers and job performance for promoting creativity. Son (2017) also proved that creative personality and creative role performance shared a significant positive relationship among infant teachers. These results showed that, when teachers expressed their creative personality more strongly, they were able to display greater creative teaching behaviours (Kim, 2020). Considering these research results, teachers having a higher sense of efficacy tended to show more creative teaching behaviours, while teachers with creative personalities tended to solve problems creatively through interactions in different situations while on the job.

*Second*, it was confirmed that childcare teacher efficacy directly affects creative teaching behavior and creative personality, and creative personal-

ity affects creative teaching behavior. This is similar to the result of Kwak (2004)'s study that teachers with higher teacher efficacy showed better ability in the motivation of children because they have accurate recognition and performance of their roles. The efficacy of childcare teachers makes teachers think about how to apply and utilize their abilities to the teaching environment by faithfully fulfilling their roles. As such, the efficacy of childcare teachers acts as a driving force to trigger creative teaching behavior, and the more the belief that their educational activities are helpful to infants by themselves, the more creative teaching behavior appears. The efficacy of child care teachers also had a direct effect on creative personality. These results are similar to the research of Lee (2009) which examined the relationship between creative personality and efficacy of pre-service early childhood teachers. In order to improve teacher efficacy more firmly, it means that teacher education is needed to improve curiosity, task-focused ability, humor, and problem-solving leadership, which are sub-factors of creative personality (Lee & Lee, 2017). The creative personality of child care teachers affects creative teaching behavior, which suggests that teachers are more likely to run creative classes with various ideas of teachers in implementing the curriculum.

This result can be related to the research results of Kim, Kim, and Han (2009), which examined how teacher's creative personality and self-efficacy influenced teachers' role in promoting creativity among infants. This implies that, if teachers having high childcare teacher efficacy approach a new environment or problem with curiosity, they are more likely to offer different ways of nurturing infants' creativity (Kim, 2007).

*Third*, creative personality had a partial mediating effect on the process through which childcare teachers' efficacy influenced creative teaching behaviour. When teachers engage in teaching activities with the belief that their teaching activities will affect the infants' behaviours, if they show more creative attitudes and behavioural characteristics, their teaching activities could affect the degree of skill acquisition necessary for conducting the teaching activities (Kim & Seo, 2015).

This study, which investigated the direct effects of childcare teacher efficacy and creative teaching behaviour as well as the mediating effects of creative personality, made the following conclusions.

*First*, childcare teacher efficacy, creative teaching behaviour, and creative personality are correlated. Furthermore, educational efforts should be exerted to promote childcare teacher efficacy and creative personality in order to promote creative teaching behaviour. Because creative teaching behaviour affects the development of infants' creativity, it is important to nurture childcare teacher efficacy and creative personality, which influence

creative teaching behaviour. It is thus necessary to recognise the importance of enhancing creative teaching behaviours among teachers and to implement training programs to promote childcare teacher efficacy and creative personality.

*Second*, childcare teacher efficacy directly affects creative teaching behaviour, while creative personality has a mediating effect on creative teaching behaviour. Thus, childcare teacher efficacy and creative personality are important relevant variables of creative teaching behaviour. If childcare teachers conduct creative behaviours while upholding confidence and belief in their own capabilities, their degree of creative teaching behaviour increases. Therefore, it is necessary to implement educational programs to improve childcare teacher efficacy among childcare teachers so that they can enhance their creative teaching behaviours.

## REFERENCES

- Amabile, T. M. (1983). The social psychology of creativity: A componential conceptualization. *Journal of Personality and Social Psychology*, 45(2), 357-376.
- Ashton, P. T. (1984). Teacher efficacy: A motivational paradigm for effective teacher education. *Journal of Teacher Education*, 35(5), 28-32.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bae, N. H. (2014). *The effect of early childhood teachers' efficacy creativity improvement on their role for young children: Focusing on the moderating effect of job stress*. Masters dissertation, Hanyang University, Seoul.
- Choi, G. E. (2010). Development of the scale for elementary school teacher's creative teaching behaviors. *Journal of Elementary Education*, 23(2), 241-260.
- Choi, H. S., & Yoon, H. O. (2015). The structural relationships among classroom environment, teacher efficacy, teacher-child interactions, and children's cognitive ability and creativity. *Journal of Early Childhood Education*, 35(6), 339-356. doi: <http://dx.doi.org/10.18023/kjece.2015.35.6.016>
- Cropley, A. J. (2004). *Creativity in education and learning*. Engl. transl. by K. H. Lee, B. Y. Choi, & S. H. Park. Seoul: Hakjisa (ed. orig. 2001).
- Guskey, T. R., & Passaro, P. D. (1994). Teacher efficacy: A study of construct dimensions. *American Educational Research Journal*, 31(3), 627-643.
- Halliwell, S. (1993). Teacher creativity and teacher education. In D. Bridges & T. Kerry (Eds.), *Developing teachers professionally: Reflections for initial and in-service trainers* (pp. 67-78). London: Routledge.



- Han, K. S., & Kong, Y. J. (2011). Exploring the relationship among the gifted education teachers' job stress, teacher efficacy, and creative teaching activities. *Journal of Korean Teacher Education*, 28(4), 283-304. doi: <http://dx.doi.org/10.24211/tjkte.2011.28.4.283>
- Han, S. M., Kim, S., Park, S. H., Lee, K. H., & Sung, E. H. (2004). *Creativity: People, environment, strategy*. Seoul: Hakjisa.
- Han, S. S., & Lim, M. H. (2003). A study on identifying of kindergarten teacher's efficacy. *Journal of Future Early Childhood Education*, 10(1), 207-240.
- Hoy, A. W., & Spero, R. B. (2005). Changes in teacher efficacy during the early years of teaching: A comparison of four measures. *Teaching and Teacher Education*, 21(4), 343-356.
- Hu, J. Y. (2018). *The relationship between childcare teachers' job satisfaction, teacher efficacy, and teaching flow*. Masters dissertation, Soongsil University, Seoul.
- Jeffrey, B., & Craft, A. (2004). Teaching creatively and teaching for creativity: Distinctions and relationships. *Educational Studies*, 30(1), 77-87.
- Jeon, K. W. (2000). The perceptions of barriers on creativity in female university student. *Journal of Korea Open Association for Early Childhood Education*, 5(1), 163-180.
- Jeon, K. W., & Kim, K. S. (2014). *Creativity for happy children: A guide for teachers*. Paju: Jungminsa.
- Jeong, M. Y. (2011). *A study on the relationship among early childhood educator's creativity efficacy, and personality types*. Masters dissertation, University of Incheon.
- Jon, Y. S., Kim, J. S., & Yun, K. M. (2003). New approach to teaching creativity: Problem finding. *Korean Journal of Educational Research*, 41(3), 215-238.
- Joo, E. S., & Kim, J. Y. (2014). The effects of teachers' efficacy and occupational stress on creative attitude among kindergarten teachers: Examining the mediating effects of focusing manner. *Journal of Future Early Childhood Education*, 21(2), 1-18.
- Joo, S. E. (2018). *Relationships between the creative leadership, creative personality, and roles of a teacher in creativity teaching*. Masters dissertation, Soongsil University, Seoul.
- Kang, B. M., & Lee, Y. A. (2018). The effects of early childhood teaching creativity on teaching competencies. *Journal of Korea Open Association for Early Childhood Education*, 23(3), 225-252. doi: <http://dx.doi.org/10.20437/KOAECE23-3-10>
- Kang, S. M., & Lew, K. H. (2014). Correlations among self-concept, creative personality and teacher-efficacy of college students in early childhood education major. *Youth Facility and Environment*, 12(1), 87-96.
- Kaufman, J. C. (2010). *Creativity 101*. Engl. transl. by J. H. Kim. Seoul: Sigma-press (ed. orig. 2009).

- Kim, H. (2010). The effects of young children's intelligence, mother's child-rearing behaviors, and teacher's creativity teaching efficacy on young children's creativity. *Korean Journal of Children's Media and Education*, 9(1), 207-226.
- Kim, H., & Noh, Y. H. (2007). A study of investigating the child and teacher variables that promote the creativity of young children. *Journal of Korea Open Association for Early Childhood Education*, 12(4), 255-278.
- Kim, H. J., & Seo, H. A. (2015). The meditating effect of instructional creativity on the relationship between teaching efficacy and teaching flow in early childhood teachers. *Korean Journal of Early Childhood Education*, 35(3), 157-170. doi: <http://dx.doi.org/10.18023/kjece.2016.36.1.011>
- Kim, H. J., & Seo, H. A. (2016). The meditating effect of creative personality on the relationship between teaching efficacy and teaching performance in early childhood teachers. *Early Childhood Education*, 36(1), 253-272. doi: <http://dx.doi.org/10.18023/kjece.2016.36.1.011>
- Kim, H. R., & Lee, K. H. (2019). The development and validation of teacher efficacy test for child care teachers. *Korean Journal of Child Education and Care*, 19(4), 15-32. doi: <http://dx.doi.org/10.21213/kjceec.2019.19.4.15>
- Kim, K. E. (2020). The effect of preschool teachers' creativity on creativity-fostering teaching: Focusing on mediating effect of teaching efficacy. *Korean Journal of Childcare and Education*, 16(2), 47-65. doi: <https://doi.org/10.14698/jkce.2020.16.02.047>
- Kim, W. T., & Paik, Y. S. (2009). Early childhood teacher's creativity and teacher's efficacy. *Early Childhood Education Research and Review*, 13(3), 51-67.
- Kim, Y. S. (2007). *Effects of teachers' creativity and self-efficacy on their role for young children's creativity improvement*. Masters dissertation. Chungbuk National University, Cheongju.
- Kim, Y. S., Kim, Y. H., & Han, S. Y. (2009). Effects of teachers' creative personality and self-efficacy on their role for young children's creativity improvement. *Korean Journal of Human Ecology*, 18(3), 557-570.
- Koh, E. H. (2003). *Teacher's creative personality and teacher role to promote infant creativity*. Masters dissertation. Kyung Hee University, Seoul.
- Kwak, H. J. (2004). *The reflection on teaching and teacher's behavior in early childhood education*. Unpublished doctoral dissertation. Chung-ang University, Seoul.
- Kwon, K. S., Hwang, E. H., & Park, J. B. (2016). The effect of kindergarten teacher's teaching flow and teaching efficacy on creative teaching behaviors. *Korean Journal of Early Childhood Education*, 36(3), 333-355. doi: <http://dx.doi.org/10.18023/kjece.2016.36.3.015>
- Lee, I. H., & Han, K. S. (2016). Validation of ECCPQ (Early Childhood Creative Pedagogy Questionnaire) and the importance-performance of the early childhood creative pedagogy perceived by the early childhood teachers.



- Korean Journal of Early Childhood Education*, 36(5), 213-233. doi: <http://dx.doi.org/10.18023/kjece.2016.36.5.009>
- Lee, K. H. (2002). A study on creative thinking ability and creative personality of the university students. *Journal of International Association for the Gifted and Talented*, 1(2), 47-68.
- Lee, K. H., & Choi, M. J. (2014). A study of teachers' learning and teacher creativity education. *Journal of Creativity Education*, 13(1), 5-30.
- Lee, K. H., & Kim, C. Y. (2017). The effect of on-line creativity class on promotion of creative personality and self-concept. *Journal of Education and Culture*, 23(1), 33-64. doi: <https://doi.org/10.24159/joec.2017.23.1.33>
- Lee, K. H., & Lew, K. H. (2014). *Creativity*. Seoul: Dongmunsa.
- Lee, K. H., Park, S. H., & Choi, B. Y. (2012). The relationships between teachers' creativity education competency and young children's creativity. *Global Creative Leader*, 2(1), 3-14.
- Lee, K. H., & Yu, S. H. (2010). The effects of the global leader program on improvement of young children's cognition, creativity and leadership. *Korean Journal of Educational Psychology*, 24(3), 507-523.
- Lee, K. J., & Lee, Y. M. (2017). The mediating effect of stress-coping strategies of childcare teachers' creative personality on teacher. *Korean Journal of Childcare and Education*, 13(4), 19-35. doi: <https://doi.org/10.14698/jkce.2017.13.04.019>
- Lee, M. H. (2010). A study on the effect of the early childhood teachers' self-efficacy on the teachers' creativity. *Korea Journal of Child Care and Education*, 61, 281-297.
- Lim, K. H. (2008). *The effect of preschoolers' creative thinking and creative personality characteristics on problem solving ability*. Masters dissertation, Uiduk University, Gyeongju.
- Ministry of Education & Ministry of Health and Welfare (2019). *2019 Nuri Curriculum* (rev. ed.). Seoul: Ministry of Education - Ministry of Health and Welfare.
- Paik, Y. S., & Kang, B. J. (2013). The relations among job satisfactions, teaching efficacy and instructional creativity of child care center teachers. *Korea Journal of Child Care and Education*, 76, 25-47.
- Paik, Y. S., & Kang, B. J. (2014). The relations between teacher's emotional labor and teacher-young children interactions in the mediating effects of teaching efficacy and the instructional creativity of day care center teachers. *Journal of Korea Open Association for Early Childhood Education*, 19(2), 179-199.
- Paik, Y. S., & Kim, W. T. (2008). Validation of the self-rating scales for early childhood teacher's creativity. *Early Childhood Education Research and Review*, 12(3), 111-128.

- Paik, Y. S., & Oh, H. S. (2013). The relations between teachers teaching flow and teaching efficacy in the mediating effects of instructional creativity of day care center teachers. *Korean Education Inquiry*, 31(4), 293-311.
- Park, E. J. (2020). *Differences in creative Teaching behavior and young children's creativity according to latent classes of early childhood teachers' creative self-beliefs*. Unpublished doctoral dissertation. Sungkyunkwan University, Seoul.
- Park, E. M., & Lee, S. S. (2013). A study for the educare teacher's professional development level and efficacy of educare. *Journal of Early Childhood Education and Educare Welfare*, 17(4), 180-200.
- Park, S. H., Kim, K. U., & Yi, H. S. (2005). The relationships between creative personality and creative teaching performances of early childhood teachers. *Journal of Future Early Childhood Education*, 12(4), 165-185.
- Park, Y. T., Lee, K. N., & Ha, S. Y. (2009). Early childhood teacher's efficacy, job satisfaction and creative personality. *Journal of Future Early Childhood Education*, 16(1), 275-298.
- Renzulli, J. S. (1992). A general theory for the development of creative productivity through the pursuit of ideal acts of learning. *Gifted Child Quarterly*, 36(4), 170-182.
- So, Y. H. (2011). The effects of elementary school teachers' thinking styles on creative teaching behaviors: Mediating roles of teachers' self-efficacy and teaching flow. *Journal of Child Education*, 20(4), 5-20.
- Son, E. J., & Park, Y. T. (2012). The effect of teachers' efficacy and creative personality on child-care teachers' job satisfaction. *Journal of Early Childhood Education and Educare Administration*, 16(1), 233-253.
- Son, H. J. (2017). *The relationship between the early childhood teachers' creative personality and creative role performance*. Masters dissertation. Korea National Open University, Seoul.
- Woods, P. (1990). *Teacher skills and strategies*. London: Falmer.

## RIASSUNTO

*Lo scopo di questo studio è stato quello di identificare l'effetto mediatore della personalità creativa nella relazione tra l'efficacia degli insegnanti di scuola dell'infanzia e il comportamento didattico creativo. I partecipanti allo studio sono stati 300 insegnanti di assistenza all'infanzia coinvolti nell'indagine tra il 14 e il 22 ottobre 2020. I risultati dello studio sono stati i seguenti. In primo luogo, sono state evidenziate correlazioni positive tra efficacia, comportamento didattico creativo e personalità creativa. In sintesi, quando gli insegnanti mostrano una maggiore efficacia e alti livelli di personalità creativa, è probabile che i livelli di didattica creativa siano più alti. In secondo luogo, il grado di*

*efficacia degli insegnanti di scuola dell'infanzia è risultato influenzare direttamente i comportamenti di didattica creativa e correlare con la personalità creativa, ciò influenza direttamente il comportamento didattico creativo. In terzo luogo, la personalità creativa risulta parzialmente mediata dal livello di efficacia e dai comportamenti didattici creativi. Poiché il settore dell'assistenza all'infanzia continua a sottolineare il ruolo centrale dei comportamenti didattici creativi, deve creare un ambiente in cui gli insegnanti dell'infanzia possano migliorare la loro efficacia e sviluppare la loro personale creatività. Inoltre, i programmi educativi dovrebbero incoraggiare gli insegnanti a migliorare la loro efficacia ed esprimere la loro personalità creativa.*

*Parole chiave:* Comportamento di insegnamento creativo; Efficacia degli insegnanti di scuola dell'infanzia; Insegnante di scuola all'infanzia; Personalità creativa.

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