
The Mediating Effect of Learning Flow between Psychological Capital and Creativity among Pre-Service Elementary Teachers

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Abstract

The purpose of this study was to examine the mediating effect of learning flow between psychological capital and creativity among pre-service elementary teachers. In order to accomplish this purpose, this study gathered the data of 280 undergraduate students from two national education universities in Korea. The major findings of this study appeared as follows: First, psychological capital ($r=.64$) and learning flow ($r=.55$) were positively correlated with creativity. Second, psychological capital was responsible for 41% of creativity and the relative influence of these components on creativity was self-efficacy ($\beta=.25$), hope ($\beta=.22$), optimism ($\beta=.20$), and resilience ($\beta=.12$). In addition, three components of learning flow explained 42% of creativity. Specifically, the challenge-skill balance ($\beta=.45$), loss of self-consciousness ($\beta=.22$), and autotelic experience ($\beta=.16$) predicted creativity. Finally, learning flow had a partial mediating effect in the relationship between psychological capital and creativity. Psychological capital predicted creativity both directly and indirectly through the mediating role of learning flow. Implications for future research and practice were also discussed.

Keywords: Psychological capital, flow, learning flow, creativity

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Introduction

Students' creativity has been a key word in school education in many countries for a long time. There is no disagreement that creativity education should be the main purpose of school education in order to help students achieve self - actualization and meet social demands. As creativity is a process that can be observed only at the intersection where individuals, domains, and fields interact (Csikszentmihalyi, 1999), there are many conditions necessary to expand students' creativity through school education. For example, examinations that encourage creativity education, school facilities suitable for creative activities, and high-quality programs appropriate to student's level are needed.

Among those conditions, teachers play an important role in the development of students' creativity in school. This is because teachers take the driver's seat in all processes of delivering information related to a specific area and act as gatekeepers who decide what belongs in a domain and what does not. Also, some researchers found a significant relationship between teacher creativity and student creativity (see Park et al., 2008). It is not possible to assume that the creativity of a teacher directly affects the creativity of students, but a teacher's creativity can play the role of a mediator who can promote or inhibit students' creativity. It is important that the educational climate of a school be changed in order to be effective in creativity education, but most importantly, teachers themselves should strive to become creative teachers (Choi & Park, 2008). Therefore, it is necessary to support pre-service teachers to improve their own creativity, as well as to teach them how to develop their students' creativity.

According to Fredrickson (2001)'s broaden-and-build theory, certain discrete positive emotions-including joy, interest, contentment, pride, and love-although phenomenologically distinct, all share the ability to broaden people's momentary thought-action repertoires and build their enduring personal resources, ranging from physical and intellectual resources to social and psychological resources (Fredrickson, 2001). Thus, experiences of certain positive emotions prompt individuals to discard time-tested or automatic (everyday) behavioral scripts and to pursue novel, creative, and often unscripted paths of thought and action (Fredrickson, 1998). In addition, Isen and Daubman (1984) have shown that negative emotions reduce creativity, while positive emotions promote creativity and help solve problems. They argued that positive emotions play a role in creating new, flexible, creative, and receptive thinking patterns, and consequently increase the level of dopamine in the brain, thereby expanding cognitive context. As positive emotions are likely to result in more novel and creative ideas, improving individuals' positive psychological levels seem to play a positive role in individuals' creativity through expanding the scope of thinking and action necessary for creative outcomes.

In this context, positive psychology and research has attracted attention, one of which is in regards to psychological capital. Psychological capital is defined as an individual's positive psychological state of development characterized by self-efficacy, optimism, hope, and resilience (Luthans, Youssef, & Avolio, 2007). The concepts of each component are

briefly explained below.

Self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives (Bandura, 1997). Self-efficacy influences behavior choices, efforts, persistence of tasks, types of thinking and emotional responses. Individuals with high levels of self-efficacy approach a difficult task as a challenge to be mastered rather than as a threat to be avoided, set challenging goals for themselves, maintain a strong commitment to these goals, heighten and sustain their efforts in the face of failure, attribute failure to insufficient effort or deficient knowledge and skills, and approach threatening situations with an assurance that they exercise control over such situations (Bandura, 1997; Schunk, 2004; Williams & Williams, 2010).

Hope is considered as a positive motivational state that is based on an interactively-derived sense of successful (1) agency (goal-directed energy) and (2) pathways (planning to meet goals) (Snyder, Irving, and Anderson, 1991). Hope develops from way-power (the ability to develop plans and alternatives to achieve goals) and willpower/agency (the determination to act and maintain effort) and these complement each other in the pursuit of goals (Luthans 2012; Luthans & Jensen 2002). Hopeful individuals are generally independent thinkers and highly autonomous (Luthans, Youssef, & Avolio, 2007). This may also result in creative activity spawned by resourcefulness, nontraditional thinking, and even apparent chaos and disorganization, as those high in hope explore and take creative pathways to a goal (Sweetman, Luthans, Avey, & Luthans, 2010).

Optimism is defined as not only expecting good things to come, but reacting to problems with a sense of confidence and high personal ability (Seligman, 1991). Optimism is regarded as an individual's expectations of positive outcomes or their making positive attributions about the likelihood of success in the short or long term (Luthans, Youssef, & Avolio 2007). Scheier and Carver (1992) state that people who see desired outcomes as attainable continue to strive toward those outcomes, even when progress becomes difficult or slow. Alternatively, if outcomes seem sufficiently unattainable (regardless of the reason for the difficulty), people withdraw their effort and disengage themselves from the goals that they have set - even if the consequences of such disengagement are at times severe. According to their view, optimists expect good things to happen to them in the future and therefore actively strive to achieve their goals but pessimists expect bad things to happen to them and hesitate or avoid the achievement of goals.

Resilience is defined as the process of bending and rebounding to overcome adversity (Hunter, 2001). Resilience refers to a class of phenomena characterized by good outcomes in spite of serious threats to adaptation or development (Masten, 2001). Resilient people have well-developed self-systems, including high self-esteem, optimism, and feelings that they are in control of their destiny. They set personal goals, expect to succeed, and believe they are responsible for their success (Eggen & Kauchak, 2010).

These four components are theorized to combine to constitute a higher order construct

of psychological capital (Luthans, Youssef, & Avolio, 2007) that has increasingly been applied to explain work attitudes and outcomes (Baluku, Kikooma, Bantu, & Otto, 2018). On the other hand, some researchers have studied the relationship between psychological capital and creativity and confirmed that psychological capital was positively related to creative performance (e.g., Kim & Baek, 2004; Sweetman, Luthans, Avey, & Luthans, 2010; Tierney & Farmer 2002; Zubair & Kamal, 2015).

As we have seen so far, psychological capital has a positive relationship with creativity. However, in order to clarify the relationship between psychological capital and creativity, it is necessary to explore how psychological capital affects creativity. In other words, it is necessary to explore the variables that show the mediating effect between psychological capital and outcome variables, not just that psychological capital has a positive effect on individual attitudes and behaviors (Kim, Kim, & Yoon, 2016).

In this context, this study examines the mediating effect of learning flow between psychological capital and creativity. The interest in flow started from trying to explore the psychological phenomenon of a human being who is deeply immersed in a certain object or activity. Csikszentmihalyi (1977) asserted the concept of flow in his book “Beyond Boredom and Anxiety: Experience Flow in Work and Play” for the first time. Flow is understood as a state in which people are so intensely involved in an activity that nothing else seems to matter (Csikszentmihalyi, 1990). In other words, the flow experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it.

We often have this experience in some activities, including the learning situation. Learning flow refers to experiencing flow in learning situations. Learning flow in academic performance not only gives emotional satisfaction through learning that is very enjoyable, but it can also enhance the quality of learning (Kim, Tack, & Lee, 2010). Some researchers have found that the psychological state of flow is positively correlated with optimal performance in the fields of artistic and scientific creativity (Perry-Smith & Shalley 2003). Also, Csikszentmihalyi (1990) has argued that people involved in creative pursuits actively seek flow experiences and that creativity is more likely to result from such states. In other words, the more flow and longer the experience, the more likely it is to achieve creative outputs.

As mentioned above, several studies revealed positive relationships between psychological capital and creativity. Yet, little attention has been given to the mediating effect of learning flow in the relationship between psychological capital and creativity. Thus, the present study is designed to analysis the mediating effect of learning flow in the relationship between psychological capital and creativity among pre-service teachers. This study will contribute to clarifying the process of psychological capital and creativity that has been attracting attention in recent years. Specific research questions for this study are as follows:

Question 1: What is the correlation between psychological capital, learning flow, and creativity?

Question 2: What are the relative influences of psychological capital components and learning flow components on creativity?

Question 3: Does the mediating effect of learning flow appear between psychological capital and creativity?

Method

Participants

The total sample included 280 students (32.8% male, 68.2% female) from D and J National University of Elementary Education in Korea. Respondents consisted of 34 freshmen (12.1%), 102 sophomores (36.4%), 62 juniors (22.1%), and 82 seniors (29.3%).

Instruments

Psychological capital

The Korean version of the 'Positive Psychological Capital Scale' (Lim, 2014), which consists of 18 items categorized into four components assessing self-efficacy (5 items), optimism (5 items), hope (5 items), and resilience (3 items), was used to assess students' psychological capital. Participants were requested to rate their agreement on a 5-point Likert scale ranging from 1-*strongly disagree* to 5-*strongly agree*. The present sample yielded Cronbach's α of .89 for self-efficacy, .82 for optimism, .88 for hope, .89 for resilience, and .92 for the total of all items.

Learning flow

The 'Learning Flow Scale for Adults' (Kim, Tack, & Lee, 2010) was used to assess students' learning flow. This scale was developed based on a questionnaire for undergraduate and graduate students and consisted of 29 items with nine components: challenge-skill balance (3 items), clear goals (3 items), unambiguous feedback (3 items), action-awareness merging (3 items), exclusion of distractions (3 items), feeling of control (3 items), loss of self-consciousness (3 items), distorted sense of time (3 items), and autotelic experience (5 questions). Items were measured on a 5-point Likert scale and internal consistencies of the components were indexed by Cronbach's α at .89 for challenge-skill balance, .68 for clear goals, .86 for unambiguous feedback, .90 for action-awareness merging, .89 for exclusion of distractions, .78 for feeling of control, .87 for loss of self-consciousness, .75 for a distorted sense of time, .95 for autotelic experience, and .95 for the total of all items.

Creativity

Items of the 'Development of Learning Competence Test for College Students' (Lee, Kim, Koh, & Park, 2011) were used to assess participants' creativity. In this scale, creativity is divided into creative ability (6 items) assessing fluency, flexibility, and originality; and creative personality (6 items) assessing curiosity, sensitivity, risk-taking, and task commitment. Items were measured on a 5-point Likert scale. The present sample yielded Cronbach's α of .85 for creative ability, .81 for creative personality, and .90 for the total of all items.

Data Analysis

Descriptive statistics were computed for each variables included in the study and correlations between the variables were analyzed by Pearson's correlation coefficient (r). Multiple regression analyses were conducted to examine the relative influence of the components of psychological capital and learning flow on creativity. Finally, the mediation effect was verified by the procedure presented by Baron and Kenny (1986). A *Sobel* test was performed to confirm the statistical significance of the mediation effect.

Results

Before examining the research question, the means and standard deviations of the variables included in the study were computed and presented in Table 1. The mean of psychological capital was 3.60 (SD=.59) and the mean of hope (M=3.69, SD=.71) were the highest among the components. The mean of learning flow was 3.12 (SD=.67). Among the components of learning flow, the mean of clear goals (M=3.76, SD=.82) was the highest and the mean of loss of self-consciousness (M=3.76, SD=.95) was the lowest. The mean of creativity was 3.23 (SD=.70).

The first question of the study concerned relations among variables. Table 2 displays the correlations between psychological capital and creativity. As indicated, psychological capital was positively correlated with creativity ($r=.64$, $p<.001$), creative ability ($r=.57$, $p<.001$), and creative personality ($r=.60$, $p<.001$). In addition, all the components of psychological capital showed significant correlation with creative ability, creative personality, and creativity. Self-efficacy showed the highest correlation with creative ability ($r=.50$, $p<.001$), and hope had the highest correlation with creative personality ($r=.54$, $p<.001$).

Table 1. Means and standard deviations of variables

Variables	Components	M	SD
Psychological capital	Self-efficacy	3.54	.64
	Optimism	3.65	.72
	Hope	3.69	.71
	Resilience	3.46	.88
	Total	3.60	.59
Learning flow	Challenge–skill balance	3.75	.74
	Clear goals	3.76	.82
	Unambiguous feedback	3.47	.82
	Action–awareness merging	3.01	.93
	Exclusion of distractions	2.96	.93
	Feelings of control	3.16	.80
	Loss of self-consciousness	2.78	.95
	Distorted sense of time	3.23	.93
	Autotelic experience	3.17	.99
Total	3.12	.67	
Creativity	Creative ability	3.30	.74
	Creative personality	3.16	.80
	Total	3.23	.70

Table 2. Correlations between psychological capital and creativity

Psychological capital	Creativity		
	Creative ability	Creative personality	Total
Self-efficacy	.50*	.48*	.54*
Optimism	.48*	.49*	.53*
Hope	.47*	.54*	.56*
Resilience	.36*	.40*	.42*
Total	.57*	.60*	.64*

* $p < .001$

Table 3 shows the correlations between learning flow and creativity. Learning flow was positively correlated with creativity ($r=.55, p<.001$), creative ability ($r=.45, p<.001$), and creative personality ($r=.54, p<.001$). All the components of learning flow showed significant correlation with creative ability, creative personality, and creativity. Among the components of learning flow, challenge–skill balance showed the highest correlation with creativity ($r=.59, p < .001$).

Table 3. Correlations between learning flow and creativity

Learning flow	Creativity		
	Creative ability	Creative personality	Total
Challenge–skill balance	.52*	.55*	.59*
Clear goals	.19*	.25*	.24*
Unambiguous feedback	.36*	.44*	.44*
Action–awareness merging	.36*	.34*	.38*
Exclusion of distractions	.33*	.38*	.39*
Feelings of control	.38*	.41*	.43*
Loss of self-consciousness	.36*	.43*	.44*
Distorted sense of time	.36*	.36*	.39*
Autotelic experience	.31*	.46*	.43*
Total	.45*	.54*	.55*

* $p < .001$

The second research question concerned the relative influences of psychological capital components and learning flow components on creativity. First, Table 4 presents the results of a multiple regression analysis for predicting creativity through components of psychological capital. Four components of psychological capital were responsible for 41.7% of creativity. In order, the relative influences of these components on creativity were self-efficacy ($\beta = .25$, $t = 4.17$, $p < .001$), hope ($\beta = .22$, $t = 3.24$, $p < .001$), optimism ($\beta = .20$, $t = 3.18$, $p < .01$), and resilience ($\beta = .12$, $t = 2.12$, $p < .05$).

Table 4. Multiple regression analysis for effects of psychological capital on creativity

Dependent Variable	Independent Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>R</i> ²	<i>F</i>
Creativity	(Constant)	.42	.20		2.07*		
	Self-efficacy	.27	.07	.25	4.17***		
	Optimism	.20	.06	.20	3.18**	.415	48.80***
	Hope	.22	.07	.22	3.24***		
	Resilience	.09	.04	.12	2.12*		

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

Table 5 shows the result of a multiple regression analysis predicting creativity through learning flow components. As indicated, three out of nine components were responsible for 42% of creativity. In order, the relative influences of these components on creativity were challenge-skill balance ($\beta = .45$, $t = 7.78$, $p < .001$), loss of self-consciousness ($\beta = .22$, $t = 2.93$, $p < .001$), and autotelic experience ($\beta = .16$, $t = 2.77$, $p < .01$).

Table 5. Multiple regression analysis for effects of learning flow on creativity

Dependent variable	Independent variable	B	SE	β	t	R^2	F
Creativity	(Constant)	.79	.20		3.91		
	Challenge–skill balance	.43	.05	.45	7.78**		
	Clear goals	.02	.05	.03	.54		
	Unambiguous feedback	.02	.06	.03	.40		
	Action–awareness merging	-.02	.05	-.03	-.47	.427	22.39**
	Exclusion of distractions	-.05	.06	-.06	-.77		
	Feelings of control	.04	.07	.04	.54		
	Loss of self-consciousness	.16	.05	.22	2.93*		
	Distorted sense of time	-.01	.05	-.01	-.09		
	Autotelic experience	.10	.03	.16	2.77*		

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

The third research question concerned the mediating effect of learning flow between psychological capital and creativity. The procedures suggested by Baron and Kenny (1986) were followed to examine the mediation effect. Table 6 displays the results of the mediating effect of learning flow in the relationship between psychological capital and creativity.

In Step 1, psychological capital showed a significant effect on learning flow ($\beta = .63$, $t = 13.72$, $p < .001$). In Step 2, psychological capital had a significant effect on creativity ($\beta = .64$, $t = 13.96$, $p < .001$). In Step 3, psychological capital and learning flow had a significant effect on creativity. However, the influence of psychological capital on creativity was decreased in Step 3 ($\beta = .64$, $t = 13.96$, $p < .001$ → $\beta = .49$, $t = 8.52$, $p < .05$). Also, the *Sobel* test value 3.85 ($p < .001$) was confirmed to have statistical significance on the mediation effect. Therefore, learning flow had a partial mediating effect between psychological capital and creativity.

Table 6. Regression analyses indicating the mediating effect of learning flow between psychological capital and creativity

Steps	Dependent variable	Independent variable	B	SE	β	t	R^2	F
1	Learning flow	Psychological capital	.72	.05	.63	13.72*	.40	188.32*
2	Creativity	Psychological capital	.77	.05	.64	13.96*	.41	194.82*
3	Creativity	Psychological capital	.60	.07	.49	8.52*	.44	110.74*
		Learning flow	.24	.06	.23	4.01*		

* $p < .001$

Discussion and conclusion

This study examined the mediating effect of learning flow between the psychological capital and creativity of pre-service elementary teachers. Based on the findings of this study, the following discussion will be conducted through research questions.

First, psychological capital was positively correlated ($r=.64$). In addition, all of its components were positively correlated with creativity. This result reaffirmed previous research reporting psychological capital to be positively related to creativity (Ahn & Ahn, 2015; Kim & Baek, 2004; Sweetman, Luthans, Avey, & Luthans, 2010; Zubair & Kamal, 2015). It is assumed that individuals with high psychological capital make challenging efforts to accomplish their goals, and when they have difficulties in achieving their goals, their flexible thinking can explore various alternatives. Also, they are more likely to accept new knowledge and ideas to achieve their goals. As these characteristics of psychological capital are necessary in the process of creative activities, psychological capital is positively correlated with creativity.

There was a positive correlation between learning flow and creativity ($r=.55$), which is consistent with previous studies (Lee, 2015; Perry-Smith & Shalley 2003; Zubair & Kamal, 2015). Learning flow is the optimal experience that brings together all mental processes and activities together for solving learning tasks. Additionally, the possibility of finding new and diverse alternatives which are related to creativity will depend on the level of learning flow. For this reason, it can be explained that learning flow and creativity show a significant correlation.

Second, psychological capital had significant effects on the creativity of pre-service teachers. In other words, all of its components were responsible for 41% of creativity. The relative influences of these components on creativity were self-efficacy ($\beta=.25$), hope ($\beta=.22$), optimism ($\beta=.20$), and resilience ($\beta=.12$) in order. These results are consistent with previous studies that show the four components of psychological capital as having a positive effect on creativity (Pannells & Claxton, 2008; Rego, Sousa, Marques, & Cunha, 2012; Sweetman, Luthans, Avey, & Luthans, 2010; Tierney & Farmer, 2002). Interestingly, the self-efficacy and hope components were revealed to be the most influential factors on creativity in this study. Creative activities require an attitude open to challenges, the ability to put in a lot of effort, and the perseverance to take risks, which is influenced by a level of self-efficacy for a specific task. Accordingly, individuals with high self-efficacy will think and act in favor of creative outcomes. These characteristics of self-efficacy may have had the greatest impact on creativity. With respect to hope, perhaps the agentic motivational dimension of willpower and the proactive pathway aspect of hope are particularly important psychological resources from which to draw during the idea generation stage of the creative process (Sweetman, Luthans, Avey, & Luthans, 2010). Hopeful individuals have the willpower to find various paths to achieve specific goals. When they do not attain their goals with a chosen method, they will look for alternative and creative ways to overcome difficulties. Consequently, the results of this study suggest that psychological capital affects creativity, supporting positive studies (Fredrickson, 2001; Isen & Daubman, 1984) that show positive emotions lead to optimal creative behavior.

This study revealed that three components of learning flow explained 42% of creativity. This result is consistent with previous research that showed learning flow as an important

predictor of creativity (Kim, Kim, & Yoon, 2016; Lee, 2015). The flow experience leads to the development of an individual's ability to challenge higher level of tasks (Nakamura & Csikszentmihalyi, 2002). This attitude not only leads individuals to higher achievement in a task, but also helps in the development of creativity. In addition, learning flow allows individuals to enjoy adventure and to concentrate on the task with joy, and these tendencies promote the individuals' creativity.

The study also found that three of the nine components of learning flow directly affected creativity. Specifically, the challenge-skill balance ($\beta=.45$), loss of self-consciousness ($\beta=.22$), and autotelic experience ($\beta=.16$) predicted the creativity. The challenge-skill balance is the core element of the Csikszentmihalyi (1990)'s flow model. When both challenges and skills are high, the individual is not only enjoying the moment, but is also stretching his or her capabilities with the likelihood of learning new skills and increasing self-esteem and personal complexity (Csikszentmihalyi & LeFevre, 1989). A loss of self-consciousness refers to a phenomenon or act where one seems to be unaware of one's own existence and completely in the present moment (Csikszentmihalyi, 1990). In the loss of self-consciousness, individuals do not overthink themselves and they are not affected by the judgment of others. In other words, individuals experiencing loss of self-consciousness do not care about external factors such as honor, success, reward, threat, and so on. Finally, an autotelic experience means self-directed independent behavior for internal satisfaction rather than for expectation of external rewards. Individuals in an autotelic experience feel satisfaction and joy in the activity itself without expecting future compensation.

The components found to directly affect creativity in this study are similar to the characteristics of intrinsic motivation. Intrinsically motivated people enjoy the task itself or the sense of accomplishment it brings, and there is no need for any punishment or incentive because the activity itself is a reward. Actually, many studies have shown that intrinsic motivation has a significant correlation with creativity (e.g., Amabile, 1996; Sung, 2006). Accordingly, it can be said that learning flow is closely related to intrinsic motivation, which is positively related to creativity.

Third, learning flow had a partial mediating effect between psychological capital and creativity. Psychological capital predicted creativity both directly and indirectly through the mediating role of learning flow. This finding corroborates in part evidence showing that learning flow has a mediating effect on the relationship between self-efficacy and a creative personality in pre-service early childhood teachers (Kim, Kim, & Yoon, 2016). From the results of this study, it has been proved that individual creativity can be developed by increasing psychological capital and learning flow.

Psychological capital can be developed and strengthened through educational treatments (Luthans, Avolio, & Avey, 2007), and learning flow can be enhanced in appropriate environments. For example, those who are presented with appropriately challenging tasks will have the hope that they will be able to successfully carry out the task. Successful work improves self-efficacy, so they will not only have a more optimistic attitude

toward similar tasks, but will recover quickly from difficult situations. This process often results in learning flow that has a positive impact on creativity.

Further research is needed to develop programs for improving the psychological capital and learning flow of pre-service elementary teachers. In addition, it is necessary to dynamically analyze the mediating effects of learning flow between psychological capital and creativity using qualitative research methods. These studies will contribute to the development of programs that can improve psychological capital and learning flow, as well as the research in this area. Finally, since the results of this study are limited to pre-service elementary teachers, further studies are necessary to verify whether similar results occur in subjects of other ages.

References

- Ahn, B., & Ahn, D. (2015). Validation of the psychological capital scale for technical high school students specialized in invention and patent education. *Journal of Gifted/Talented Education*, 25(4), 629-648.
- Amabile, T. M. (1996). *Creativity in context: Update to the social psychology of creativity*. UK: Hachette.
- Baluku, M. M., Kikooma, J. F., Bantu, E., & Otto, K. (2018). Psychological capital and entrepreneurial outcomes: the moderating role of social competences of owners of micro-enterprises in East Africa. *Journal of Global Entrepreneurship Research*, 8(1), 8-26.
- Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York: W. H. Freeman.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Choi, B., & Park, S. (2008). A comparative analysis of creativity between teachers of the gifted and teachers of the general students. *The Journal of the Korean Society for the Gifted and Talented*, 7(2), 5-19.
- Csikszentmihalyi, M. (1977). *Beyond boredom and anxiety, second printing*. San Francisco: Jossey-Bass.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper & Row.
- Csikszentmihalyi, M. (1999). Implication of a systems perspective for the study of creativity. In R. Sternberg (Ed.), *Handbook of creativity* (pp. 313-335). Cambridge University Press.
- Csikszentmihalyi, M., & LeFevre, J. (1989). Optimal experience in work and leisure. *Journal of personality and social psychology*, 56(5), 815-822.
- Eggen, P., & Kauchak, D. (2010). *Educational Psychology: Windows on classrooms (8th Ed.)*. New Jersey.

- Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology*, 2, 300-319.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 18-226.
- Hunter, A. J. (2001). A cross-cultural comparison of resilience in adolescents. *Journal of Pediatric Nursing*, 16(3), 172-179.
- Isen, A., & Daubman, K. (1984). The influence of affect on categorization. *Journal of Personality and Social Psychology*, 47, 1207-1217.
- Kim, A., Tack, H., & Lee, C. (2010). The development and validation of a learning flow scale for adults. *Korean Journal of Educational Psychology*, 24(1), 39-59.
- Kim, B., Kim, J., & Yoon, J. (2016). Mediating effects of learning flow on the relationship between academic self-efficacy and creative personality in pre-service early childhood teachers. *The Journal of Korea Open Association for Early Childhood Education*, 21(1), 403-424.
- Kim, E., & Baek, Y. (2014). Relationship between positive psychological capital and social capital and individual creativity. *The Journal of Korean Academy of Organizational Management*, 38(1), 93-122.
- Lee, K., Kim, E., Koh, J., & Park, C. (2011). Development of learning competence test for college students: Focusing on cognition, learning motivation and learning behavior. *Korean Journal of Educational Psychology*, 25(4), 791-809.
- Lee, S. (2015). The Influence of Happiness and Learning Flow on pre-service early childhood teacher's their creativity. *The Journal of Child Education*, 24(3), 5-22.
- Lim, T. (2014). Validation of the Korean Version of Positive Psychological Capital (K-PPC). *Journal of Coaching Development*, 16(3), 157-166.
- Luthans, F. (2012). Psychological capital: Implications for HRD, retrospective analysis, and future directions. *Human Resource Development Quarterly*, 23(1), 1-8.
- Luthans, F., Avolio, B. J., & Avey, J. B. (2007). Psychological capital questionnaire. New York: Mind Garden, Inc.
- Luthans, F., & Jensen, S. M. (2002). Hope: A new positive strength for human resource development. *Human Resource Development Review*, 1(3), 304-322.
- Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital: Developing the human competitive edge*. Oxford: Oxford University Press.
- Masten, A. (2001). Ordinary magic: Resilience processes in development. *American Psychologist*, 56(3), 227-238.
- Nakamura, J., & Csikszentmihalyi, M. (2002). The concept of flow. In C. R. Snyder & S. Lopez (Eds.), *Handbook of positive psychology* (pp. 89-105). Oxford: Oxford University Press.
- Pannells, T. C., & Claxton, A. F. (2008). Happiness, creative ideation, and locus of control. *Creativity research journal*, 20(1), 67-71.
- Park et al., (2008). *The relationship between teachers' efficacy and factors related to*

- creativity and students' creativity*, Paper presented at "The 10th Asia-Pacific Conference on Giftedness" in Singapore.
- Perry-Smith, J. E., & Shalley, C. E. (2003). The social side of creativity: a static and dynamic social network perspective. *Academy of Management Review*, 28, 89–106.
- Rego, A., Sousa, F., Marques, C., & Cunha, M. P. E. (2012). Optimism predicting employees' creativity: The mediating role of positive affect and the positivity ratio. *European Journal of Work and Organizational Psychology*, 21(2), 244-270.
- Scheier, M. F., & Carver, C. S. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research*, 16(2), 201-228.
- Schunk, D. H. (2004). *Learning Theories: An educational perspective (4th Ed.)*. Prentice Hall.
- Seligman, M. E. P. (1991). *Learned optimism*. New York: Knopf.
- Snyder, C. R., Irving, L. M., & Anderson, J.R. (1991). Hope and health. In C. R. Snyder (Ed.), *Handbook of social and clinical psychology* (pp. 295–305). Oxford, UK: Oxford University press.
- Sung, E. (2006). Relationships among intrinsic-extrinsic motivation, self-efficacy, and creativity. *Journal of Korean Association of Child Studies*, 27(5), 183-193.
- Sweetman, D., Luthans, F., Avey, J. B., & Luthans, B. C. (2011). Relationship between positive psychological capital and creative performance. *Canadian Journal of Administrative Sciences*, 28(1), 4-13.
- Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: its potential antecedents and relationship to creative performance. *Academy of Management Journal*, 45(6), 1137–1148.
- Williams, T., & Williams, K. (2010). Self-efficacy and performance in mathematics: Reciprocal determinism in 33 nations. *Journal of Educational Psychology*, 102(2), 453-466.
- Zubair, A., & Kamal, A. (2015). Work related flow, psychological capital, and creativity among employees of software houses. *Psychological Studies*, 60(3), 321-331.

Korean Abstract

예비초등교사의 심리적 자본과 창의성의 관계에서 학습몰입의 매개효과

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이 연구의 목적은 예비초등교사들의 심리적 자본과 창의성간의 관계에서 학습몰입의 매개효과를 탐색하는 것이다. 이를 위해 한국의 D와 J시 교육대학교에 재학 중인 280명의 학생을 대상으로 관련 변인에 대한 설문 조사를 실시한 결과, 심리적 자본과 학습몰입은 창의성과 각각 .64, .55의 상관 관계가 있었다. 또한 심리적 자본은 창의성의 41%를 설명하였고, 하위 요인들 중에서는 자기 효능감($\beta=.25$), 희망($\beta=.22$), 낙관주의($\beta=.20$), 회복 탄력성($\beta=.12$) 순으로 창의성에 영향을 주는 것으로 나타났다. 한편 학습몰입은 창의성의 42%를 설명했으며, 하위 변인 중에서 도전-기술 균형($\beta=.45$), 자의식 상실($\beta=.22$), 자기목적적 경험($\beta=.16$) 변인이 창의성을 유의하게 예측하는 것으로 나타났다. 마지막으로, 학습몰입은 심리적 자본과 창의성의 관계에서 부분 매개효과가 있는 것으로 밝혀졌다.

주요어: 심리적 자본, 창의성, 학습몰입, 예비초등교사
