

# IT분야 관리자의 코칭행동이 조직구성원들의 창의성에 미치는 영향: 폐기학습의 매개효과와 창의적 자기효능감의 조절효과 중심으로

## The Effect of Managerial Coaching Behavior on Employees' Creativity in IT field: Focused on the Moderating Effect of Creative Self-efficacy and the Mediating Effect of Unlearning

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### 요약

최근 4차산업혁명시대에는 디지털 신기술을 기업에 적용시켜 조직의 혁신을 이끌어내야 한다는 점에서 IT분야 종사자들의 창의성 발현은 다른 분야에 비해 매우 절실하다. 이러한 문제의식에서 본 연구는 IT분야 관리자의 코칭행동이 구성원의 창의성 발현에 미치는 영향을 검증하고 이 관계에서 폐기학습의 매개효과와 창의적 자기효능감의 조절효과를 밝히고자 하였다. 서울 및 수도권의 IT분야 종사자들을 대상으로 설문조사하여 최종 분석에 총 439부를 SPSS 25.0과 AMOS 25.0을 사용해 확인적요인분석을, SPSS Process Macro 3.0을 사용해 매개효과 및 조절효과를 분석하였다. 그 결과, 관리자의 코칭행동은 구성원의 창의성과 폐기학습에 정적인 영향을 미치는 것으로 나타났다. 폐기학습은 창의성에 유의한 영향을 미치는 것으로 나타났다. 또한 폐기학습은 관리자의 코칭행동과 구성원의 창의성과의 관계를 매개하는 것으로 밝혀졌다. 창의적 자기효능감은 관리자의 코칭행동과 폐기학습 간 관계를 조절하는 것으로 나타났다. 본 연구는 관리자의 코칭행동이 IT분야 구성원의 창의성에 직접적인 영향을 미침을 검증하고 간접적인 영향요인들을 확인함으로써 시대적 요구 차원에서 코칭 효과에 대한 연구 영역확장과 영향 메커니즘을 밝혔다는 점에서 이론적, 실무적 의미가 있다.

■ 중심어 : | 관리자의 코칭행동 | 창의성 | 폐기학습 | 창의적 자기효능감 |

### Abstract

In the era of the fourth industrial revolution, IT workers' use of creativity has become more important than workers' in other fields in that they should apply new digital technologies to their companies for organizational innovation. In this regard, this study is to verify the effect of managerial coaching behavior on the creativity of employees in the IT field and identify the mediating effect of unlearning and the moderating effect of creative self-efficacy. A survey was conducted on IT workers in Seoul and the metropolitan area and a total of 439 copies of the questionnaire survey were used for confirmatory factor analysis on SPSS 25.0 and AMOS 25.0 and for mediating and moderating effect analysis on SPSS Process Macro 3.0. The results suggested that managerial coaching behavior has a positive effect on the creativity and unlearning ability of employees. They also showed that unlearning has a significant effect on one's creativity, mediating the relationship between managerial coaching behavior and the creativity of employees. Also, they identified that creative self-efficacy moderates the relationship between managerial coaching behavior and unlearning. This study has theoretical and practical significance in that it makes a timely contribution to expand the research area for coaching effect and identifies the influential mechanism behind managerial coaching by verifying the direct effects of managerial coaching behavior on the creativity of the IT sector workers and finding indirect influential factors.

■ keyword : | Managerial Coaching Behavior | Creativity | Unlearning | Creative Self-Efficacy |

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## I. Introduction

In recent years, innovative technologies such as artificial intelligence, robots, and big data have created products and services that could not be imagined in the past and it has led companies to face hyper-competition. In the era of the fourth industrial revolution, companies can survive only if they develop new products and services by applying new IT technologies promptly to the entire business. In this sense, the creativity of employees is urgently required[1]. In particular, since the creativity of the IT workers, who lead these changes and innovations, has become more important than that of workers in other fields, the necessity of research that reveals the factors influencing their creativity is being raised.

The creativity of employees leads to new and useful ideas needed for developing products and services and overall business[2] and it is regarded as a competitive advantage and driving force of innovation[1-3]. That's the reason why a significant amount of research has been conducted on how to promote the creativity of employees. The factors affecting creativity are divided into two categories: personal factors (e.g. personality, cognition, attitude, and knowledge) and environmental factors (e.g. leadership, workplace culture, and compensation)[4]. Among these factors, the leadership of superiors is considered a critical variable that encourages the creativity of employees. This is because leaders are in a position to control and influence employees. In other words, since they observe the behaviors of other workers and provide them with feedback, they can encourage them to

overcome old ways of thinking and perform their tasks creatively[5].

Recently, many companies are adopting a digital transformation strategy and changing their structure from vertical to horizontal and agile organization in order to respond to customers' needs promptly and flexibly[6]. Against this background, managerial coaching behavior has come to the fore as an essential role of a leader because it can encourage employees to overachieve in their jobs, particularly in a horizontal organization[7][8].

Managerial coaching is an act to educate employees and help them to handle their tasks themselves[9]. The previous studies conducted in Korea have demonstrated that managerial coaching can help employees to focus on their jobs and show their creativity and innovative behaviors at work by providing positive feedback and support and fostering their intrinsic motivation[10-12]. However, the previous studies on managerial coaching have left something to be desired. In this sense, it is significant to verify the effect of managerial coaching on the creativity of employees with the purpose of enhancing the competitiveness of the IT sector in the fourth industrial revolution. To explain the mechanism of how coaching behavior affects the creativity of employees, this study is to verify the mediating effect of unlearning by setting unlearning as a parameter.

In an era of uncertainty, the ability to unlearn has become more important because old knowledge or methods can hinder companies from adopting the latest technology and making their products and services more creative than their competitors. Unlearning is defined as an ability to discard old knowledge, skills, and

practices that hinder innovation[13][14]. A number of studies on unlearning have found that unlearning plays a vital role in unleashing one's creativity. They also have demonstrated that the better ability to unlearn people have, the higher chance they have of improving their creativity[15-22]. Although leadership is considered a preceding factor in unlearning, few studies have been conducted to examine the relationship between managerial coaching and unlearning. In that sense, it is meaningful to look into the relationship between two factors.

Managerial coaching behavior helps employees to motivate themselves, affecting their skills, such as cognition, judgment, alternative assessment, and problem-solving[23]. It can be inferred that it affects cognitive flexibility[24] and the unlearning ability to look at problems from a different angle, resulting in creative outcomes[25]. However, unlearning is not an easy task and the level of unlearning can vary from person to person. In this respect, it is necessary to look at the control variable, which serves as a psychological mechanism. Cegarra-Navarro and Dewhurst[26] have acknowledged that as it is challenging to break the habit of relying on old knowledge, unlearning ability determines the performance of employees. The reason why employees avoid the unlearning process is the fear of trying something new and being out of their comfort zone[27]. On the other hand, it is possible to infer that the moderating effect of creative self-efficacy affects the enhancement of employees' unlearning because intrinsically motivated people can solve problems in learning-oriented, creative, and flexible manners[27].

Creative self-efficacy is defined as a belief that one has the ability to produce creative outcomes under a specific circumstance[28]. Previous studies have found that this belief serves as a psychological mechanism and source of creativity, encouraging employees to put their creative efforts continuously to deal with challenging situations[28][29]. Therefore, it can be assumed that employees with high creative self-efficacy cultivate their ability to unlearn by looking at mistakes in a more positive light, taking a risk[30], and relieving anxiety. Based on the discussions above, this study involves IT sector workers, who need creativity the most for their jobs and it is to verify the direct effect of managerial coaching on the creativity of employees. Also, it is to identify whether unlearning mediates the relationship between managerial coaching and creativity. Besides, it seeks to examine whether creative self-efficacy moderates the relationship between managerial coaching and unlearning. In addition, the findings of this study are to provide theoretical and practical implications in the era of the fourth industrial revolution by identifying the leadership required to promote the creativity of employees.

## II. Theoretical Background and Hypothesis

### 1. Managerial coaching behavior

Managerial coaching is defined as an act of educating employees and helping them to handle their tasks themselves[9]. The definition of managerial coaching varies among scholars. For example, Fournies[31] has defined managerial coaching as a process for improving work performance by helping employees to

resolve difficulties in doing their jobs. Ellinger[32] has defined it as a skill or set of behaviors of providing learning opportunities and activities to guarantee the autonomy of employees and produce knowledge for individuals and organizations. Ellinger, Ellinger, and Keller[33] have explained that managerial coaching promotes learning for employees through a variety of intentional behaviors. Some researchers have collected data on effective managerial coaching behaviors. One of the representative studies conducted by Ellinger[34] has emphasized that managerial coaching behaviors include building a supportive learning environment, communicating expectations clearly, providing performance feedback, giving employees a sense of ownership, broadening their perspectives, and cultivating their can-do spirit. Beattie[35] has suggested knowledge sharing, being considerate, and giving advice as examples of managerial coaching behaviors. Ellinger et al.[33] have identified effective managerial coaching behaviors, which include asking questions, broadening employees' perspectives, motivating them to see things differently, setting and communicating expectations, exchanging feedback, and providing resources. Heslin, Latham, and VandeWalle[36] have presented guidance, facilitation, and inspiration as managerial coaching behaviors. Guidance involves an act of providing clear expectations and feedback on how to improve employee's work performance. Facilitation is to help employees explore and discover the correct way to resolve problems for improving job performance. Inspiration is to encourage employees to develop and reach their potential.

Many researchers have acknowledged in their

studies that managerial coaching has a positive impact on employees' job performance[33][37-41] and it is a process of increasing work motivation for improved outcomes[34]. The previous studies in Korea have acknowledged that managerial coaching has a positive impact on employees' job performance and it is a process of increasing work motivation for improved outcomes[24][42]. To summarize the findings of studies on coaching conducted at home and abroad, coaching allows employees to have a sense of autonomy and affects self-efficacy[43][44], helping them to have new perspectives and approaches. Also, it can improve job satisfaction[33] and organizational commitment[45] and promote employees' creativity and innovative behaviors by providing positive feedback and support[10-12].

## 2. Managerial coaching behavior and creativity

As creativity has become the driving force behind business innovation in the era of fierce competition, a growing number of studies on the creativity of employees have been conducted. The definition of creativity varies depending on the perspectives of researchers. Amabile[2] has defined creativity as a process of creating new and useful ideas for products, services, and overall business. Oldham and Cummings[3] have defined it as a product or idea produced from individuals and suggested that creativity should be new or useful to an organization. Woodman, Sawyer, and Griffin[46] have viewed creativity as an individual act of creating a product, service, idea, procedure, and process that are new, valuable and useful through cooperation in a complex social system. Sternberg and Lubart[47] have defined it as an ability to create something new, valuable,

and useful. Also, they have maintained that people determine and develop their creative ability and personality during the interaction between environments and tasks. In recent years, many studies on creativity have been conducted[1][48][49], identifying that one's personality traits[50][51], job characteristics [3][52], and working environment[48][53] are the factors affecting the creativity of employees.

The findings of previous studies have acknowledged that the leadership of superiors is one of the crucial variables that spark the creativity of employees. Since a leader is in a position to influence employees, the support provided by a leader can bring creative outcomes to a company[54]. Also, when employees recognize the support provided by their leaders, the trust between two parties can be established, promoting innovative actions of employees[55]. Scott and Bruce[55] have maintained that the support and trust of a leader and autonomy granted are related to the creation of ideas. Amabile and Grysiewicz[56] have pointed out that the leader's encouragement and recognition are the factors of the work environment that are related to the creativity and job performance of employees. In Korea, Ha and Tak[12] have verified the positive relationship between coaching leadership and creative behaviors in their previous study. They have found that the coaching behavior of leaders helps employees to identify and enhance their strengths and to develop themselves, affecting outcomes of an organization and the creativity of employees[11]. Furthermore, it promotes the innovative behaviors of employees[10].

The relationship between coaching behavior and creativity can be inferred from the

self-determination theory. This theory has pointed out that the level of intrinsic motivation is shaped by how much autonomy can be guaranteed. According to this theory, three fundamental psychological needs that are critical for self-determination are autonomy, competence, and relatedness and if these psychological needs are satisfied, individuals are intrinsically motivated[57][58].

Amabile[59] has argued in previous studies that intrinsic motivation is the most important source of creativity and employees can unleash their creativity when they are highly motivated[60]. It has also been found that as they feel supported by the leaders, their trust in the leaders can be built and in turn leads to innovative behaviors[55]. Managerial coaching behavior allows leaders to set goals with their employees and empower them to perform their tasks on their own[37][61], which ultimately enables them to recognize the autonomy. Also, it helps employees consider themselves competent by promoting their learning and encouraging them to find solutions to problems[36]. Besides, they can have emotional stability and build the relatedness based on positive feedback and support produced by managerial coaching behavior[62]. It can be deduced that managerial coaching behavior induces intrinsic motivation by satisfying the psychological needs of employees[63] and such intrinsic motivation results in a positive effect on the creativity of employees[59]. Based on these theoretical grounds and previous studies, this study has established the following hypothesis.

*H1. Managerial Coaching Behavior has a significant positive impact on the Creativity of*

*employees.*

### 3. Managerial coaching behavior and unlearning

With the advent of the fourth industrial revolution, the rapid transformation of information leads to the creation of a growing amount of useless knowledge. As the creativity of employees has become the source of survival and competitive advantage, the unlearning approach should be adopted to discard outdated knowledge or belief systems and embrace a new idea and technology[64-66]. Mieres, Sánchez, and Vijande[67] have acknowledged that unlearning allows employees to revise or discard obsolete knowledge and it helps them to handle their tasks more flexibly.

The concept of unlearning emerged early in the 1980s, at a time when organizational effectiveness was much mentioned[68]. Each scholar has a different definition of unlearning. Newstrom[69] has defined it as a process of reducing or eliminating pre-existing knowledge that hinders new learning. Becker[70] has suggested that unlearning is to discard old ways of learning to learn new things. Akgüan, Byrne, and Lynn[66] have viewed it as an act of abandoning outdated and stereotyped knowledge and belief systems. Tsang and Zhara[71] have suggested that it is to abandon things such as knowledge, values, and beliefs that are unnecessary or failed, hard to replace, and easy to cause a misunderstanding. Combining these various definitions, Navarro and Moyal[64] have defined it as a dynamic process of seeking new knowledge and opportunities by abandoning inefficient and useless knowledge and routines. Also, they have presented the broad concept of unlearning, where unlearning is an act of discarding,

blocking and replacing unnecessary knowledge, including the creation of a new knowledge system and way of thinking. They also viewed it as a process of defining a problem, bring a change, and applying a new way of operating at the individual level, while defining it as an activity related to job autonomy, an admission of failure, and concentration and satisfaction of employees at the organizational level.

Unlearning is about finding problems and actively trying new things, which can only be done by taking a risk and trying to turn failure into opportunity. In order to promote unlearning in an organization, the leader's active support is essential because employees' ingrained habit of not taking a risk makes it hard for leaders to implement the unlearning process. Chung[72] has found that employees can try a new way of working, only if the organization supports them. The previous studies have shown that the support and trust of a superior catalyze the creativity and innovative behaviors of employees[73].

Although few empirical studies on the correlation between managerial coaching and unlearning have been conducted, this correlation can be inferred from the studies demonstrating the correlation between empowering leaders and unlearning[74-76]. Yun, Faraj, and Sims[76] have demonstrated that an empowering leader provides more learning opportunities than a directive leader does. In Korea, Park and Sohn[74] have identified the positive mediating effect of trust in leaders on the relationship between the empowering behavior of the leader and the team learning behavior. Lee[75] has maintained that empowering can help an organization to learn and innovate itself. Yang[77] has demonstrated

that the leader's coaching behavior has a static effect on self-directed learning through which it affects the innovative behaviors of employees. Since these studies have shown the impact of managerial coaching behavior empowering employee's learning, it can be deduced that managerial coaching has a correlation with unlearning.

Besides, coaching behavior allows leaders to set a goal with their subordinates and help them to solve problems on their own. This active decision making allowed by leaders affects organizational commitment[78][79]. In other words, coaching behavior has a positive effect on empowering subordinates psychologically by motivating them to participate in their jobs more actively and make their own decision[80]. It can be deduced that managerial coaching empowers employees to feel autonomous and helps them to be more creative at work and be motivated intrinsically by allowing them to vary from existing norms and rules.

Managerial coaching affects the perception, judgment, alternative assessment, problem-solving skills[23], and cognitive flexibility of employees[24]. Cognitive flexibility is an ability to find an alternative solution to the problem that cannot be resolved with a traditional one[81]. It can be inferred that the active managerial coaching leads to a more flexible way of thinking of employees and promotes the unlearning ability to vary from existing rules and procedures and find a new solution to problems. Tak and Cho[82] have suggested the factors of coaching leadership. One of them is perspective-taking and it refers to an act of having a new way of thinking and finding an answer by oneself. It can be deduced that managerial coaching behavior can shift the

perspectives of employees and promote the unlearning ability to look at problems from a different angle.

Previous studies have shown that leadership is a significant factor in unlearning. Also, the studies on coaching behavior have demonstrated that managerial coaching behavior promotes learning, flexible thinking, perspective-taking, and behavior change of employees. Given that these factors are closely related to the unlearning ability, the positive relationship between managerial coaching and unlearning can be inferred. Based on the discussion and findings of previous studies mentioned above, this study has established the following hypothesis.

*H2. Managerial Coaching Behavior has a positive impact on the Unlearning ability of employees.*

#### 4. Unlearning and creativity

Along with a growing interest in creativity in recent years, the concept of unlearning, which looks at creativity from a learning perspective, has been crucial to a leader in an organization.

Most previous studies on unlearning have dealt with it from an organizational perspective and defined it as a learning method or strategy for survival or growth of an organization in the rapidly changing world. Leadbeater[83] has emphasized the importance of unlearning with the concept of creative ignorance and pointed out that the reason why employees fail to innovate the organization is that they don't have the ability to forget. In other words, not going through unlearning, which refers to the forgetting process, hinders one's abilities to learn a new thing and respond to a new

technology promptly[84]. Since the ability to respond to changes and new technologies determines one's success or failure[85], the ability to unlearn plays a vital role in developing one's creativity in a knowledge-based society[15]. Akgüan, Lynn, and Byrne[86] have argued that the organizational unlearning is a part of learning, which helps an organization to adapt to changes. They also have pointed out that unlearning has a positive impact on the organization that deals with creative tasks, affecting the development of new products. These previous studies have shown that combining various ideas and creating new ones require the process of unlearning that discards useless habits and knowledge[85].

Han and Kwon[22] have demonstrated in the study on factors of creativity that unlearning has a positive effect on organizational creativity. Lee and Lee[19], and Byeon[16] also have verified that unlearning is conducive to individual creativity. Cho and Oh[20] have verified the significant relationship between unlearning and innovative behaviors of employees[17] and Lee and Kwon[18] have presented the case study on the correlation between unlearning and contents innovation. Heo and Cheon[87] have revealed the moderating effect of unlearning on the relationship between employee's knowledge integration capabilities and innovative behavior. One's creativity can be expressed in the absence of prior knowledge or fear of evaluation[22][88] and it means that unlearning can stop existing knowledge and custom from suppressing creativity. The relationship between unlearning and creativity can be inferred from Lewin's field theory. Lewin[89] developed a change model involving three steps: unfreezing,

changing, and refreezing and argued that organizational change can be achieved through these steps. Unfreezing refers to the process, where the organizational power to maintain the status quo is weakened to the extent of discarding existing knowledge, beliefs, and behaviors and overcoming customs. This stage is significantly important in that it can lay the foundation for companies to accept creative ideas and knowledge. Changing involves the process of moving to a new level in terms of individual and organizational behaviors. Through this process, companies can develop new values, behaviors, and attitudes. Refreezing is to stabilize the organization at a new state of equilibrium. This step is to reinforce and embody this new state.

It can be inferred from this change model that unlearning, which can be seen as the unfreezing and changing process[15], has a positive effect on the creativity of employees by enabling them to overcome existing beliefs, knowledge, and behaviors and embrace change. Based on these theoretical grounds and previous studies, this study has established the following hypothesis.

*H3. Employee's ability to Unlearn has a positive impact on Creativity.*

## 5. Mediating effect of unlearning

Several previous studies have shown that managerial coaching behavior has a positive effect on learning for employees. They have acknowledged that managerial coaching behavior affects the problem-solving skills of employees by improving their learning orientation and helps them to achieve their goals along with the support for self-directed



learning[90]. Also, they have demonstrated that it allows employees to fulfill their potential and perform their tasks through learning[91]. Ellinger[32] has maintained that the leader's coaching behavior is essential for an organization to be the one pursuing growth and learning. Park and Choi[23] have pointed out that it promotes the employees' continuous growth and learning. Ha and Tak[12] have suggested that a higher learning orientation makes the correlation between coaching leadership and creative behaviors of employees clearer.

Managerial coaching behavior is about allowing employees to change their ways of thinking and look at problems from a different angle, which improves their problem-solving skills and cognitive flexibility[23][24]. Besides, managerial coaching behavior helps them to shift their perspectives, adopt a new way of thinking and find a solution on their own[82]. Although it is hard to find the studies demonstrating the direct correlation between managerial coaching behavior and unlearning, understanding the concept of these two factors can help to identify the correlation. Based on previous studies on coaching behavior, it can be inferred that the factors, which are affected by managerial coaching behavior, such as learning, facilitation, a problem-solving ability, cognitive flexibility and perspective-taking are closely related to the factors of unlearning, such as defining a problem, admitting failure and embracing change[64]. Therefore, it can be deduced that active managerial coaching behavior leads to a more flexible way of thinking and perspective-taking of employees, which promotes their unlearning ability to vary from old knowledge and custom and find a new

solution. Besides, with unlearning serving as a mediator it is possible to predict an indirect effect of managerial coaching on the creativity of employees. Many studies have demonstrated the positive relationship between unlearning and the creativity and innovative behaviors of employees. Han and Kwon[22] conducted an empirical study on the factors of creativity and found that the more active unlearning process leads to better organizational creativity. Cho and Oh[20] have identified that unlearning has a positive impact on innovative behaviors of employees. Also, Lee and Lee[19] have acknowledged that unlearning has a significant effect on the creativity of employees by allowing them to discard old knowledge and embrace an innovation and change actively. Based on this, they have confirmed the mediating effect of unlearning on the relationship between acceptance of diversity and creativity. Yu and Hong[17] have identified the correlation between empowering leadership and innovative behaviors of employees and the mediating effect of unlearning on the basis that active empowering leadership is conducive to the development of new ideas and solutions and it ultimately promotes innovative behaviors. Joo and Park[21] also have demonstrated the mediating effect of unlearning on the relationship between acceptance of diversity and creativity. Wong, Cheung, Yiu, and Hardie[92] have shown in an organizational context that unlearning has a positive impact on the success of an organization and the interaction between organizational learning and unlearning produces a mediating effect on desirable outcomes. Kim and Hong[93] conducted the study on the effect of social support on middle-aged job seekers and

identified the mediating effect of unlearning.

Based on the findings of the studies mentioned above, it can be inferred that managerial coaching enables employees to feel a sense of ownership by motivating and empowering them. Besides, it also allows employees to change their ways of working to resolve problems. Consequently, it can be deduced that unlearning promotes the creation of new ideas, leading to the development of creativity. Therefore, this study has established the following hypothesis based on the discussions and findings of the studies above.

*H4. Unlearning has a positive mediating effect on the correlation between Managerial Coaching Behavior and Creativity of employees.*

## 6. Moderating Effect of Creative Self-Efficacy

As the creativity of employees has become a crucial factor in an organization due to uncertainty in the business environment, creative self-efficacy, one of the leading variables in creativity, has also become increasingly critical[28][29]. The concept of creative self-efficacy[28] is rooted in the theory of general self-efficacy suggested by Bandura. Bandura[94] has maintained that self-efficacy affects the motivation needed to perform a task, and a person with high self-efficacy tends to involve in dangerous and challenging activities, including creative tasks. Ford[95] has suggested self-efficacy as a key motivator for the creative behaviors of individuals. Building on these studies, Tierney and Farmer[28] developed the concept of creative self-efficacy, which is essential for employees to make persistent efforts particularly in a difficult and

challenging situation.

Creative self-efficacy refers to the belief in his or her capacity to produce creative outcomes in a specific setting. It is distinct from general self-efficacy, the belief in his or her capacity to complete a task in various settings. Tierney and Farmer[28] have found that creative self-efficacy is conducive to performing creative tasks. They also have suggested creative self-efficacy as a significant variable that predicts one's creativity[96]. The findings of many studies also have defined creative self-efficacy as a significant variable in one's creativity[29][30][97][98].

It can be inferred from the relationship among managerial coaching, creative self-efficacy, and unlearning that creative self-efficacy serves as a psychological mechanism for employees. Individual behaviors related to unlearning include defining problems, admitting failure, and embracing change[64]. These factors show the relation between unlearning and creativity [15][99]. Also, several studies have identified that creative self-efficacy is a significant factor affecting one's creativity and the factors of unlearning are closely related to creativity. Based on this, the correlation between creative self-efficacy and unlearning can be inferred.

It is clear that the dependence on outdated knowledge hinders adaptation to changes. However, it is not an easy task for employees to discard accumulated knowledge over a long time. Cegarra-Navarro and Dewhurst[26] have argued that as it is challenging to break the habit of relying on old knowledge, unlearning ability determines the performance of employees. Employees tend to rely on old knowledge and experience that they have built to solve a problem, which hinders the

unlearning process and stops employees from learning new knowledge and technology[27][100]. People tend to try to think outside the box and conduct innovative behaviors to find a new solution and idea when they are intrinsically motivated[101]. The intrinsically motivated people are learning-oriented[102], trying to explore new knowledge with their cognitive flexibility. Since they look at problems from a new angle, they are highly likely to express their creativity[25][60].

In other words, intrinsic motivation acts as a critical variable of what employees will do. Hence, it can be deduced that it has a direct effect on the creativity of employees. In this sense, it is necessary to look at intrinsic motivation to promote the unlearning process involving the fear of failure and psychological pressure. In particular, the moderating effect of creative self-efficacy, which acts as a psychological mechanism in performing creative tasks, is an important factor to be examined[99]. As for coaching behavior, few studies have been conducted on the moderating effect of creative self-efficacy on the correlation between coaching and other variables. Oldham and Cumings[3] have suggested that the creative personality traits and work environment directly affect the creative outcomes of an organization, interacting with each other. Creative self-efficacy acts as a psychological mechanism and managerial coaching behavior is one of the environmental factors. In this context, it can be assumed that when creative self-efficacy interacts with managerial coaching behavior, it can enhance or hinder the unlearning ability of employees. Shin et al.[30] have argued that people with high creative self-efficacy tend to

perceive mistakes positively and take a risk. In other words, creative self-efficacy has a positive impact on admitting mistakes and performing tasks.

On the basis of the discussions and studies mentioned above, it can be inferred that the employees with high creative self-efficacy are highly likely to take a risk and find a new solution with their confidence, promoting unlearning more actively. In other words, creative self-efficacy can enhance the unlearning ability of employees by reducing negative emotions and anxiety. Therefore, this study has established the following hypotheses.

*H5. Creative Self-Efficacy has a positive moderating effect on the relationship between Managerial Coaching Behavior and Unlearning ability of employees.*

*H6. Unlearning has a positive moderated mediating effect by Creative Self-Efficacy on the relationship between Managerial Coaching Behavior and Creativity.*

### III. Research Method

#### 1. Research model

This study seeks to identify the relationship between managerial coaching behavior and the creativity of employees and the mediating effect of unlearning on this relationship. Also, it is to verify the moderating effect of creative self-efficacy on the relationship between managerial coaching behavior and unlearning. To demonstrate this empirically, this study proposes a research model shown in [Figure 1].

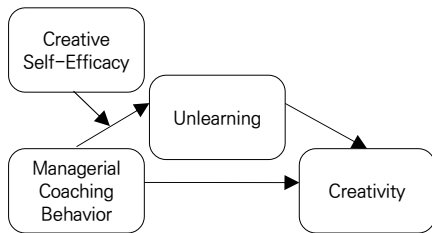


Figure 1. Conceptual Model of the Present Study

## 2. Research design

### 2.1 Data collection and analysis method

This study conducted a survey on IT sector workers in Seoul and metropolitan areas for empirical analysis of the research model suggested above. The questionnaire survey for this study was conducted for two weeks from Jan 14th to 31st, 2019 and a total of 500 copies of the survey questionnaire were collected. The 61 copies with outliers were excluded and 439 copies were used for final analysis. SPSS 25.0, AMOS 25.0, Process Macro 3.0[103] were used to analyze the results of the survey and they verified the mediating and moderating effect by performing basic statistics, confirmatory factor analysis and bootstrapping. This study used the self-report survey method and it might face common method bias, measurement error[104]. In order to prevent this error from threatening the validity of the overall survey results, statistical remedies were used during data collection.

### 2.2 Definition of variable and measurement tool

This study used the measurement tools, whose credibility and validity were already proven in other studies. It also adopted the 5-point Likert scale. (1=Strongly disagree, 5=Strongly agree) The operational definitions of variables and

measurement methods are as follows.

#### 2.2.1 Managerial coaching behavior

In this survey, managerial coaching behavior was defined as an act of helping employees to identify their strengths, achieve their growth and development and ultimately accomplish individual and organizational goals. To measure this factor, the 11 questions were used in this survey and they were developed from the 24 questions about coaching leadership factors proposed by Heslin et al.,[36] and Cho[105]. The factors include showing respect, setting a goal and providing feedback, perspective-taking, and building trust. The several questions were asked for this survey, including “My superior listen to me carefully and my superior motivates me to innovate and develop myself.”

#### 2.2.2 Creativity

The definition of creativity is as follows. This study adopted the definition of Amabile[2] for creativity as “the production of novel and useful ideas” ; several creativity studies have also adopted this definition. This measure adapted the seven-item scale of creativity that was developed and validated by Zhou and Oldham[106]. Responses were made on a five-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree. e.g., “I tend to suggest new ways to improve your business(quality).”

#### 2.2.3 Unlearning

This survey defined unlearning as an act of discarding and replacing unnecessary knowledge and routines and broadened its definition to change and regeneration[64]. To measure this factor, the survey used the five questions, which

Kwon[15] developed based on the perspective of Tsang and Zahra[71]. Also, the tools that Navarro and Moyal[64] developed and verified to measure a level of individual unlearning were used for those questions. The several questions were asked for this survey, including “I discard useless knowledge or misinformation and I intentionally forget or ignore my successful experiences to respond to changes.”

#### 2.2.4 Creative Self-Efficacy

This survey defined creative self-efficacy as the belief in his or her capacity to produce creative outcomes[28]. To measure this factor, the eight questions about general self-efficacy, which were developed and verified by Chen, Gully, and Eden[107], were used. Also, another eight questions about creative self-efficacy, which were proposed by Carmeli and Schaubroeck[108], were asked. The several questions were asked for this survey, including “I’m confident that I will complete a difficult task creatively and I believe that my creative efforts will pay off.”

## IV. Results

### 1. Demographic characteristics of samples

To find out what characteristics the effective samples have, the demographic distribution was examined. The demographics of the survey respondents are shown in [Table 1]. According to the demographic characteristics of the survey respondents, there are more male respondents (73.1%) than female respondents (26.9%). The majority of the respondents have a bachelor’s degree (73.3%) and the respondents in their 40s (42.1%) and 50s (29.8%) are

over-represented. Also, the largest share (29.2%) of respondents are working as an assistant manager. Half of the respondents (50.6%) have less than five years of service.

**Table1. Demographics of Survey Respondents**

Item		Frequency	Percentage (%)	Item	Frequency	Percentage (%)
Gender	Male	321	73.1	Staff	75	17.1
	Female	118	26.9	Assistant manager	128	29.2
Total		439	100	Department manager	101	23.0
Age	20s	34	7.7	General director	123	28
	30s	89	20.3	Executive or higher rank	12	2.7
	40s	185	42.1	Total	439	100
	50s or older	131	29.8	Less than 5 years	222	50.6
Total		439	100	From 6 to 9 years	100	22.7
Educational Attainment	High school graduate	13	3.0	From 10 to 14 years	55	12.5
	Associate's degree	64	14.6	From 15 to 19 years	27	6.2
	Bachelor's degree	322	73.3	20 years or more	35	8.0
	Master's degree or more	40	9.1	Total	439	100
Total		439	100	Total	439	100

### 2. Reliability and feasibility verification

This study used the Cronbach’s Alpha coefficient for internal consistency and reliability through SPSS 25.0 program. The results of the reliability analysis are shown in [Table 2]. The Cronbach’s Alpha coefficient showed the values of 0.7 or higher, which indicates acceptable internal consistency.

This study performed a Confirmed Factory Analysis (CFA) on AMOS 25.0 to verify

unidimensionality. First, the parsimony of the model was taken into consideration to evaluate the goodness of fit of the model. The evaluation showed satisfactory values ( $\chi^2=547.788(p=.000)$ , GFI = .909, AGFI=.890, NFI=.930, CFI=.963, RMSEA=.049). They indicate that this model is deemed appropriate. Also, most actor loadings exceed 0.7 and t-value ( $t>13.137$ ) showed statistical significance. To demonstrate the convergent validity, this study calculated composite reliability (CR) and average variance extracted (AVE) and it achieved the values required (AVE > .5, CR > .7). Consequently, these values guaranteed the convergent validity of this survey.

**Table 2. Reliability and Confirmatory Factor Analysis**

Factor	Variable	Factor Loading	t	se	AVE	CR	Cronbach's $\alpha$
Managerial coaching behavior	MCB 3	.766	18.737	.037	.693	.946	.945
	MCB 4	.796	19.819	.037			
	MCB 5	.825	20.929	.039			
	MCB 6	.841	21.563	.039			
	MCB 7	.818	20.662	.040			
	MCB 8	.894	23.832	.042			
	MCB 9	.841	21.553	.040			
	MCB 10	.827	21.004	.043			
Unlearning	UL 2	.605	13.137	.034	.635	.873	.760
	UL 3	.796	18.745	.035			
	UL 4	.615	13.406	.036			
	UL 5	.632	13.852	.035			
Creative self-efficacy	CSE 2	.779	19.072	.034	.678	.936	.923
	CSE 3	.803	19.946	.031			
	CSE 4	.774	18.870	.034			
	CSE 5	.808	20.125	.034			
	CSE 6	.811	20.252	.033			
	CSE 7	.766	18.560	.035			
	CSE 8	.803	19.882	.033			
Creativity	CRE 1	.775	18.843	.034	.667	.923	.891
	CRE 2	.762	18.392	.033			
	CRE 3	.753	18.103	.034			
	CRE 4	.753	18.090	.036			

	CRE 5	.734	17.457	.036			
	CRE 7	.789	19.340	.033			
$\chi^2=547.788(p=.000)$ , GFI = .909, AGFI=.890, NFI=.930, CFI=.963, RMSEA=.049							

### 3. Analysis of correlations between latent variables

Before hypothesis testing, it is essential to look at the correlations between variables in the research model. As shown in [Table 3], there are positive correlations among managerial coaching behavior, unlearning, creative self-efficacy, and creativity.

**Table 3. Analysis of Correlations**

Variable	1	2	3	4	5	6	7
Gender	1						
Educational attainment	-.048	1					
Job title	-.281**	.044	1				
Managerial coaching behavior	-.032	.088	-.039	1			
Unlearning	-.121*	.082	.143**	.165**	1		
Creative self-efficacy	-.151*	.039	.151**	.205**	.628**	1	
Creativity	-.163**	.041	.189**	.244**	.729**	.758**	1

\* p (0.05, \*\* p<0.01 Spearman correlation analysis

### 4. Hypothesis test

In this study, the bootstrap test was conducted to verify the correlations among managerial coaching behavior, unlearning, creative self-efficacy, and creativity on SPSS Process Macro 3.0[104]. Also, gender, educational attainment, and job title act as control variables. The results are as follows.

**Table 4. Results of Hypothesis Test**

Hypothesis (path)	Path coefficient	t	LLCI	ULCI	R2
Hypothesis 1 (MCB → CRE )	.1699	4.7522**	.0996	.2402	.0949
Hypothesis 2	.1043	3.1941*	.0401	.1884	.0529

(MCB → UL)					
Hypothesis 3 (UL → CRE)	.7960	22.0253**	.7250	.8671	.5731

\* p<0.05, \*\* p<0.01

The results showed that managerial coaching behavior has a positive impact on the creativity of employees (t=4.7522) and unlearning (t=3.1941), respectively. The bootstrap confidence intervals [.0996, .2402], [.0401, .1884] don't include zero. Therefore, the hypothesis 1 and hypothesis 2 are supported. In addition, it was found that unlearning (t=22.0253) has a positive effect on the creativity of employees. The bootstrap confidence interval [.7250, .8671] also doesn't contain zero, hence the hypothesis 3 is supported.

**Table 5. Analysis of Mediating Effect with Bootstrapping**

Hypothesis (path)	Indirect effect	BootLLCI	BootULCI	Decision
Hypothesis 4 (MCB → UL → CRE)	.0830	.0256	.1402	supported

For hypothesis 4 testing, the mediating effect was analyzed and the results showed the unlearning indirect effect of .0830. Also, the confidence interval of bootstrap [.0256, .1402] doesn't include zero. Therefore, this hypothesis is supported. Therefore, it can be inferred that unlearning serves as a mediator in the relationship between managerial coaching behavior and creativity.

**Table 6. Analysis of Moderating Effect with Bootstrapping**

Variable	coefficient	Se	T	LLCI	ULCI
Creative self-efficacy	.0750	.0335	2.2379*	.0091	.1408
R2 change= .0064, F= 5.0080(p=.0257)					

\* p<0.05, \*\* p<0.01

This study analyzed the moderating effect of creative self-efficacy on the relationship between managerial coaching behavior and the unlearning ability of employees and its results showed the F value of 5.0080. Also, the confidence interval of bootstrap [.0091, .1408] does not include zero, verifying the moderating effect. As a result, the hypothesis 5 is supported.

**Table 7. Analysis of Moderated Mediating Effect with Bootstrapping**

Path	Creative self-efficacy	Indirect effect	Boot SE	Boot LLCI	Boot ULCI	Decision
MCB→	2.7143	-.0279	.0287	-.0862	.0261	supported
UL→	3.2857	.0062	.0228	-.0399	.0496	
CRE	4.0000	.0488	.0275	-.0055	.1015	
Index :.0597			.0260	.0085	.1108	

The results showed that the indirect effect of creative self-efficacy, which is a moderating variable, increases gradually. (-.0279→.0062→.0488) Also, the bootstrap confidence interval does not include zero, and neither does the bootstrap confidence interval of moderated mediating effect [.0080, .1108]. Therefore, the hypothesis 6 is supported.

## V. Conclusion

### 1. Results and discussion

This study is to verify the effect of managerial coaching behavior on the creativity of IT sector workers and identify the mediating effect of unlearning on the relationship between two factors. Also, it is designed to demonstrate the moderating effect of creative self-efficacy that serves as a psychological mechanism in the relationship between managerial coaching behavior and unlearning. By doing so, it seeks

to find how managerial coaching behavior affects the creativity of employees. The empirical analysis results of this study are as follows.

First, the results showed that managerial coaching behavior has a positive effect on the creativity of employees. Based on the findings of this study and previous ones, it can be deduced that managerial coaching behavior is a crucial variable of one's creativity. The results of the empirical analysis also showed that managerial coaching behavior affects one's creativity, which is consistent with the results of other previous studies[10-12]. Second, this study found that managerial coaching behavior has a positive impact on the unlearning ability of employees. This indicates that managerial coaching provides employees with positive feedback and it ultimately promotes their unlearning, which refers to an ability to explore a new way of thinking and working. The results of this study are supported by the findings of several studies which verified the correlation between empowering leaders and employees' learning[74][75] and demonstrated the relationship among managerial coaching, cognitive flexibility, and perspective-taking [11][23][24][82].

Third, this study found that the unlearning ability of employees has a positive impact on their creativity. Also, these empirical findings, which showed the positive effect of unlearning on one's creativity, are consistent with the findings of other previous studies[15-17][19-21]. Fourth, it verified that unlearning has a mediating effect on the relationship between managerial coaching behavior and the creativity of employees. The study also proved the belief that managerial coaching behavior

promotes the unlearning ability of employees, which in turn helps them to make persistent efforts and creatively perform their tasks. These findings are consistent with the findings of other previous studies that verified the mediating effect of unlearning[17][19][21]. Fifth, the study found that creative self-efficacy has a moderating effect on the relationship between managerial coaching behavior and unlearning. The results of this study are supported by the findings of several studies that identified the correlation between intrinsic motivation and learning[102] and demonstrated the correlation between creative self-efficacy and taking a risk[30]. Based on this, it can be inferred that managerial coaching behavior motivates employees intrinsically to handle a new task. This is because managerial coaching behavior promotes the creative self-efficacy of employees and it leads to reducing the defensive routine they have. In other words, creative self-efficacy can strengthen the relationship between managerial coaching behavior and unlearning.

## 2. Implications

The findings of this study suggest the following academic and practical implications. First, this study is meaningful in that it reveals the correlation between creativity and unlearning, which has been an important topic for enterprises in recent years. In doing so, it identifies the mechanism, where managerial coaching behavior promotes one's creativity. In addition, as companies try to innovate themselves by accepting and using new digital technologies, the role of IT sector workers, who play an essential role in leading creativity and innovation, has been more critical than ever.



However, few studies on coaching behavior[109] have focused on IT sector workers. In this context, this study involving IT sector workers provides timely and vital implications.

Second, this study raises the awareness of the importance of managerial coaching behavior in the business field, in the era of the fourth industrial revolution by identifying the direct effects of managerial coaching behavior on the creativity of employees. Also, managerial coaching enables employees to recognize the autonomy by empowering them to handle their tasks themselves. Besides, managerial coaching allows them to develop their problem-solving skills, which in turn helps them to consider themselves competent. In addition, the positive feedback and continuous support from leaders satisfy their psychological needs, such as emotional stability and the establishment of relatedness. This psychological satisfaction by managerial coaching behavior promotes their intrinsic motivation and it ultimately leads to a positive effect on the creativity of employees. In this regard, this study is significant in that it raises the necessity of systematic coaching training that can cultivate leader's coaching ability in the front line of management.

Third, there has been no research in Korea to verify the correlation between managerial coaching behavior and unlearning. The results of this study contribute to expanding the scope of research for coaching by shedding new light on the relationship between managerial coaching behavior and unlearning.

Fourth, this study emphasizes the importance of unlearning that can promote the creativity of employees, basing Lewin's field theory where the process of organizational change takes the steps of unfreezing-change-refreezing. For

practical implications, this study suggests that leaders should promote unlearning actively for their employees to unleash their creativity. Also, a strategy designed to enhance their creativity should be based on the promotion of unlearning.

Fifth, this study is significant in that it reveals the relationship between coaching and creative self-efficacy, which was developed from the general concept of self-efficacy. Recently, there has been a growing interest in creative self-efficacy. In this sense, this study suggests that a company should create the work environment that allows creative self-efficacy to be promoted and enhance the unlearning ability of employees. This is because creative self-efficacy serves as a psychological mechanism, helping employees to take a risk and try new things.

### 3. Limitations and future directions

This study is to provide significant directions for further study by addressing the following limitations. First, this study intended to identify the importance of managerial coaching in the fourth industrial revolution era by examining the direct effect of managerial coaching behavior on the creativity of IT sector workers. However, unfortunately, it did not take into consideration various tasks and circumstantial factors at work. In this sense, follow-up studies on a broader range of circumstantial factors are required in the future. Second, this study verified the mediating effect of unlearning on the relationship between managerial coaching behavior and creativity. However, it was unable to perform enough comparative analysis due to the lack of relevant studies at home and abroad. Therefore, further studies that focus on

the mediating effect of unlearning on the relationship between coaching behavior and creativity will need to be performed. Third, since this study chose the IT sector workers in Seoul and metropolitan areas as the samples for the survey, it has some limitations in that these samples are hard to represent workers of all industries in the era of the fourth industrial revolution. Further studies that involve various samples will need to be undertaken. Fourth, this study has limitations in that it focused on the cross-sectional survey and failed to explain a process of change in a correlation between variables over time. Therefore, further studies that take the time difference into consideration, will need to be performed.

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