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The Effect of Storytelling and Peer Coaching Classes on Future Creativity Confluence and Creativity of University Students

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The purpose of this study was to examine the effect of storytelling and peer coaching classes on the future creativity confluence competency (F3C) and Creativity of University students. To this purpose, an experiment was conducted on 96 university students who took storytelling class and the peer coaching class at S University located in Seoul in the second semester in 2020. The data of 89 students were used to evaluate the difference. This study used the future creativity confluence competency test and a simple integration creativity test. The result of this study was as follows. First, In the storytelling class, there was a statistically significant difference in creative ability among the sub-factors of the future creativity confluence competency, and there was no statistically significant difference in the remaining creative personality, integrated thinking ability, new knowledge and value creation ability. And there was a statistically significant difference in all sub-elements in creativity. Second, In the peer coaching class, there was a statistically significant difference in the future creativity confluence competency test and the creativity test. Third, the difference between the storytelling class and the peer coaching class in the future creativity confluence competency and the creativity was not statistically significant. Subjects utilizing storytelling and peer coaching can improve the future creativity confluence competency and creativity of university students, which can be beneficial to the development of various liberal arts courses in the university.

Keywords: storytelling, peer coaching, creativity, student, creativity competency

INTRODUCTION

The rapidly changing future society is demanding talented people with creative confluence and creativity as future core competencies. The university strives to nurture

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talents with creative confluence competency and creativity as well as students' professionalism. Creativity and creative confluence-related contents are grafted into major subjects, creativity-related subjects are developed, and creativity and creative convergence-related research are being actively conducted. However, in reality, creativity and creativity confluence education in universities has many limitations.

Each university is showing a lot of interest in the development of subjects to promote creativity and confluence in the curriculum, but it is not yet producing satisfactory results in its operation. Although some subjects are being integrated or STEAM education is being operated for creative convergence education, the creativity-based curriculum centered on the learner is not systematized, so it is not helpful in improving the creative confluence competency of actual students (Baik et al., 2016; Hearn & Bridgstock, 2010). Like Capstone Design, there are many classes in the form of special courses that are mainly operated for engineering students, or in the form of a physical integration level that is difficult to see as a convergence course in actual operation, although it has the name ‘convergence’. Therefore, among learners, satisfaction with confluence classes is low (Tae et al., 2017).

The period in which creativity education is most needed is in the college students (Kwon & Chung, 2015). College students perceive creativity as the most important core competency to be nurtured in college and the education they most want to receive (Kim et al., 2017; Kim et al., 2009). However, creativity is a representative competency that is not nurtured through university education, and satisfaction with creativity education is considerably lower than the recognition of importance (Lee et al., 2010). College students, who are pre-professionals, are ignoring creativity education amid severe employment difficulties (Kim & Kim, 2015). The emphasis on creativity through one-way lectures by professors, relative evaluation based on paper-based evaluation, and insufficient number of creative-related subjects are factors that make it difficult to revitalize creativity education at universities (Lee et al., 2012).

Recently, each university is reorganizing the liberal arts curriculum according to the characteristics of the university. A university's liberal arts curriculum can reflect the needs and demands of students and respond to the current trend for educational innovation (Kim, 2018). The creativity and creative convergence competency required by the times and students may be easier to deal with in the liberal arts curriculum than in the major. In addition to theoretical expertise, students want to develop various competencies for social advancement at the university.

Through the liberal arts course, students can develop their future core competencies such as creativity, communication, leadership, confluence, community, and global competency. As an educational activity, storytelling is effective in developing creativity, communication, confluence, and community competency by creating and sharing creative stories (Bae, 2018). Peer coaching among college students could be effective in developing creativity and confluence capabilities through alternative thinking that discovers and solves obstacles as well as communication through questions, listening, and self-expression.

In the future society to come, the future of a country depends on whether it can secure talented people with excellent capabilities. Therefore, there is an increasing need to develop teaching and learning methods that can nurture these core competencies, and it is imperative that universities and lifelong educational institutions open courses or major courses related to creativity and core competencies and develop programs. (Lee, 2017). In universities, it is necessary to develop and guide subjects in the liberal arts education level to strengthen the future creative convergence competency and creativity of all university students.

Therefore, this study analyzed how storytelling subjects and peer coaching subjects affect the future creative confluence competency and creativity of college students. Through this, it will provide useful basic data for constructing and operating a curriculum that cultivates organic and integrated creative confluence competency and creativity in university education.

This study identifies whether the liberal arts classes opened under the themes of storytelling and peer coaching are effective classes for improving the future creativity confluence competency and creativity of university students. Specifically, the researchers aimed to answer the following questions: 1. Is the "Bridging Creativity and Communication with Storytelling (hereafter, storytelling)" class effective in improving the future creativity confluence competency (F3C) and creativity of university students? 2. Is the "Development of Global Creative Competency through Peer Coaching with International Students (Peer Coaching)" class effective in improving the future creativity confluence and creativity of university students? 3. Is there any difference in the effect of storytelling class and peer coaching class on the improvement of future creativity confluence competency and creativity of university students?

Review of literature

Creativity confluence competency

Recently, social demand for nurturing students' creative confluence competency and creativity through orthodox education is increasing. Accordingly, there is a growing demand for the establishment and training of liberal arts or major courses to foster creativity confluence competency in university education.

Competency in the future society should be able to create creative values and convergence thinking that encompasses knowledge in various fields as well as creativity, and have the ability to gain insight into the social situation as a whole (Lee, 2015). Creativity confluence talents who create creative outcomes by embodying, participating, and utilizing specialized knowledge in two or more fields are needed (Kim, 2012).

Creativity confluence competency is the ability to creatively solve problems, have creative character, and creative leadership, understand knowledge and skills in various academic fields, apply them through analysis and reasoning, and apply new confluence thinking through convergence thinking. It is the ability to create value (Kim, 2017). Kim & Lee (2017) presented the 5C model as creativity confluence competency, which is

creative ability, creative personality, creative leadership, confluent thinking, and confluent value creation.

Lee & Lee (2018) show that creativity confluence competency is the ability to use logical, analytical and creative thinking based on knowledge in various academic fields to discover and solve problems faced in a variety of problem situations, as well as positive and new results. Kim & Han (2019) described creativity confluence competency as a term that encompasses individual creativity and confluence thinking ability.

Lee (2019) presented the future creativity confluence competency (F3C) that future creative confluence competency should have in order to present the direction for future talent and future education. Sub-factors of future creativity confluence competency are creative competency, confluence competency, and future talent characteristics. Creative competency is composed of creative ability and creative personality. Confluence competency consists of integrated thinking ability, new knowledge construction, and value creation ability. Future talent characteristics are composed of self-concept, creative leadership, and self-directed learning ability.

Future creativity confluence competency is a psychological resource that integrates creativity, confluence, and future talent characteristics so that it can actively respond to various situations in the rapidly changing society of the future. The ability to create new ideas and re-create culture with flexible and original thinking, creative competency with an open and sensitive personality integrated, and knowledge in various fields to recreate new knowledge and values to cope with various problem situations. Confluence competency, future talents characteristics with a positive perception of themselves, respect for others, the ability to check and manage themselves, and the insight to check and manage themselves are the abilities, attitudes, and characteristics of talented people who are harmoniously integrated.

Creativity

Creative talents should have cognitive, affective, and social characteristics. Cognitive characteristics are the realization of appropriate creative output by demonstrating original and integrated thinking based on individual intellectual ability and thinking ability in order to creatively perform work in the relevant field and produce excellent output. Affective characteristics include the driving force and diligence that enable actual problem solving and output in relation to individual disposition, personality, and motivation. Social characteristics include a sense of responsibility and ethics suitable for a future society such as communication and cooperation (Park et al., 2014; Chi & Ju, 2012).

Liberal arts education has been proposed as an optimal method for nurturing creative talents in universities (Kwon & Chung, 2015; Lee & Lew, 2010; Lee & Choe, 2014). The objectives of liberal arts education and creativity education are oriented in the same direction, the two educational concepts are linked in a complementary relationship, and creativity education in liberal arts education is effectively recognized by professors and students (Lee, 2017). Creativity education that considers cognitive, emotional, and

social aspects at the same time will bring you closer to the essential goal of liberal arts education, so it is desirable to do it in liberal arts education.

In research on creativity education in universities, students recognize that creativity education is very important and that creativity is a core competency that must be cultivated in universities (Lee et al., 2010). However, as a result of a survey on creativity-related education currently operated by universities, satisfaction was very low, and it was found that they were not effectively cultivated through university education (Lee et al., 2012). Also, creativity-related courses opened at universities are mainly offered in some majors such as art colleges and engineering colleges, and the content is also focused on divergent thinking and problem solving (Kim et al., 2009; Choe et al., 2012). Therefore, creativity education in universities requires the establishment of in-depth subjects and curriculum that include the essence and direction of creativity in consideration of the complex characteristics of creativity in various educational processes (Choe et al., 2012).

Creativity education in schools mainly focuses on individual aspects. The creativity required by society is the creativity of an organization or group (Kwon & Kwon, 2014). When a small group rather than an individual solves a problem together, creative and original ideas are likely to be produced, and the expression of creativity at the group level is possible only when people in the group cooperate and show insight (Hong, 2016).

When deciding on curriculum design and teaching and learning methods for creativity education, it is necessary to design and operate classes so that group creativity can be enhanced by satisfying the diversity of students taking courses. When students with different experiences, knowledge, and majors gather to form a team, discussing and solving problems together with various background knowledge, ideas can be produced more actively and more advanced ideas can be derived (Kwon & Kwon, 2014; Harrioson & Klein, 2007). The second factor that enhances group creativity is that in order for various members to gather together and derive ideas from each other smoothly, the cohesiveness of actively immersing themselves into one group within a given time is considered. If ideas are exchanged and interacted to provide continuous help by forming a friendly relationship, immersion, a sense of belonging to a group, and psychological stability of members can all increase (Jeong & Cho, 2012).

Creativity education in universities should be directed toward an education that emphasizes the concept of creativity in the aspect of self-actualization and an experiential curriculum (Park, 2009). By recognizing the importance and value of creativity in life and engaging in creative thinking and activities, one must develop and internalize their creative potential so that they can fully express their capabilities in life (Lee et al., 2012). It is necessary to present tasks that allow students to experience various thinking techniques and procedures necessary for the expression of creativity, such as divergent thinking, convergent thinking, and creative problem-solving procedures and methods (Lee, 2017).

Creativity education in the liberal arts curriculum of universities should be presented in an integrated way to reconstruct diverse and subdivided knowledge. In addition, it is necessary to generate new ideas, identify useful information necessary for oneself, find the core of a problem through communication and sharing in an uncertain and ambiguous reality, and solve it creatively and contribute to society (Son, 2007; Lee, 2017). Creativity education in universities should include the process of experiencing the value and meaning of creativity and being creatively changed in addition to the theory and concept of creativity.

Storytelling

Storytelling has been widely used in recent years due to the development of various media and digital technologies, and the desired purpose can be achieved by conveying stories that contain messages to recipients or learners (Jeong, 2008). Value-based digital storytelling impacts the development of student's character (Saripudin, Komalasari, & Anggraini, 2021). As the organizer of storytelling, the storyteller has the dictionary meaning of the person who adds an interesting story to the contents to be conveyed, who is good at telling a story, and who is the story writer (Jo, 2008). Regarding this dictionary meaning, storytellers are more comprehensive because they refer to writers of stories and include stories written by others to their own feelings, conveying them well for their own purposes, such as dramatization. Especially, due to the rapid development of digital media, the ability to convey a story by utilizing this properly is needed, and it is also necessary to possess proper communication skills, to select the recipients, or to possess the ability to analyze. Therefore, the storyteller role in the storytelling era is much broader, and proper ability and competency should be cultivated to this end.

Kim (2010) stated that a storyteller needs the ability of drawing the topic of story, understanding the nature of media, composing various materials and episodes into one overall story by suggesting the factors that consist of the necessary competency of storyteller and judged such a person as a talent with creativity. Reviewing creativity and storytelling-related studies, the results indicating that education programs which utilize storytelling for elementary school students affect creativity have been certified in various fields, such as Math, Science, Literature, and Arts-related fields. Moon (2015) and Gang (2018) discovered that creativity is effective in those study with whom storytelling is applied to their science education. In studies that verified the effect of creativity improvement by applying the storytelling in art activities (Kim, 2014; Park, 2016; Shin, 2016; Nam, 2017; Shin, 2017; Park, 2018) and Nam(2018) and Heo(2016) applied storytelling to Math, Ryu(2015) applied it to Dance, Kim (2017) applied it to Music, and Jeong (2007), Nam (2012), Yoon (2013), and Kim (2018) applied it to Literature. Many studies have been conducted on children. However, Bae (2018) conducted a program using storytelling for university students and verified that creativity and communication skills improved. This suggests that the development and application of storytelling utilization programs is possible, focusing on strengthening adult competency in the field of lifelong education. Further, it was found that programs that use storytelling in various education fields significantly improve creativity.

Storytelling is an important strategy in educational activities. Storytelling has been reconceptualized as a teaching and learning activity. Education using storytelling was recognized as a strategic activity for educational performance because the meaning of the socio-cultural context was lacking (Park, 2013). Ellis and Brewster (1991) stated that the educational function of storytelling not only fosters communication skills, enhances effective expression skills, but also provides opportunities to express one's own thoughts. In other words, through storytelling, the ability to construct and expand meanings creatively in the process of understanding and expression of language is improved, and logical thinking to organize content through the process of story planning, and metaphors and symbols for effective delivery are systematically developed. If used as a method, it will be a way to cultivate linguistic creativity.

Peer Coaching

Peer coaching is one of the effective teaching methods to cultivate students' creative convergence competency. It is a strategy in which individuals of equal status or position coach each other to promote learning in education (Ladyshewsky, 2006). Peer coaching is a process of reflecting on practice, developing and refining new practice (Easton, 2008), and solving problems while sharing ideas, teaching each other, and conducting experiments (Porter, 2014). Therefore, peer coaching is a professional conversation rather than a social conversation, an observation-based tool rather than an evaluative tool, and developmental rather than competitive.

Peer coaching is characterized by personal management, confidentiality, and supportive behavior, like in friendship. Successful peer coaching requires encouraging learners to interact and move together, encouraging positive interdependence, personal responsibility, preparation of learners' interpersonal relation skills, and reflection and evaluation of group processes. Peer coaching among university students has a positive impact on students as well as coaches.

Analyzing related prior studies, peer coaching had a positively affected intimacy, sociality, and relationship improvement among university seniors and juniors (Lee, 2017). It was confirmed that peer coaching allows the coachee to have opportunities for self-reflection, such as career path and self-reflection, adaptation to school life (Lee, 2017), social adaptation, career decision self-efficacy, and certainty (Jeong & Jeong, 2019), academic achievement, and self-reflection through peer coaching. The results can be checked such as receiving help from awareness, self-management, subjective well-being (Richman et al., 2014), stress reduction (Taylor & Boyatzis, 2012), and leadership development (Erikson et al., 2020). Additionally, it has contributed to improving self-development skills and coaching skills for others (Erikson et al., 2020). Peer coaching is personally effective in growth, change, and perspective shift for both coaches and coachees, in improving behavioral change and interpersonal relaxation skills, and performance and professionalism (Hagen et al., 2017).

Thus, if university students would receive peer coaching, they could improve their creativity, and peer coaching can also affect their exploratory, spontaneity, openness, independence, and task obsession based on curiosity about people. That is, university

students will be able to improve their creativity and creative convergence competency practices.

As previous studies revealed, universities are trying to improve the creative convergence competency and creativity of future talents, but in reality, universities lack the subjects that improve the creative convergence competency and creativity. However, though the universities are striving to improve creative convergence competency and creativity, the number of related subjects provided by universities is low. Therefore, this study verifies the effect of storytelling and peer coaching in improving creative convergence competency and creativity of university students. If these prove effective, this study will bear implications for the development of subjects in universities.

METHOD

Research Design

The experimental design of this study was to examine the effects of the storytelling liberal arts class and the peer coaching liberal arts class as a pre-post test control group design. To verify the homogeneity of the experimental group, both groups were pre-tested for future creativity confluence competency and simplified integrated creativity in the first week of the semester. After that, storytelling classes and peer coaching classes were held for 3 hours a week for 14 weeks. After the 15-week class was over, to examine the effects of the storytelling class and peer coaching class, a post-test was conducted on future creative convergence competency and simplified integrated creativity. All pre- and post-tests were conducted by the researcher who conducted the class. The pre- and post-test were conducted using a Google questionnaire and took about 20 minutes.

Participants

The experiments were conducted with 96 university students who opted for the liberal arts subject of Creativity and Communication Bridging Through Storytelling and global creativity competency development along with international students as peer coaching at S University located in Seoul in the second semester in 2020. Excluding unfaithful data among collected data, data of 89 students were used to evaluate the difference in improvement of future creativity confluence competency and creativity. The data showed that the sex composition and grade composition of male and female students were similar. Additionally, the composition by age was 74 under 25 years old (83.1%) and 15 over 25 years old (16.9%). Table 1 shows the composition of the research participants.

Table 1
Composition of research participants

Group	Division		N	%
Storytelling	Sex	Male	23	44.2
		Female	29	55.8
	Major	Humanities	10	19.2
		Social sciences	19	36.5
		Natural sciences	6	11.5
		IT, Engineering	17	32.7
	Grade	1st grade	15	28.8
		2nd grade	16	30.8
		3rd grade	11	21.2
		4th grade	10	19.2
Peer coaching	Sex	Male	15	40.5
		Female	22	59.5
	Major	Humanities	9	24.3
		Social sciences	11	29.7
		Natural sciences	6	16.2
		IT, Engineering	11	29.7
	Grade	1st grade	11	29.7
		2nd grade	8	21.6
		3rd grade	11	29.7
		4th grade	7	18.9
Total			89	100

Measurement Tool

Future Creativity Confluence Test

To measure future creativity confluence of university students, this study used the Future Creativity Confluence test wherein Lee & Jun (2021) performed the measurement tool validation based on the future creativity confluence (F3C) checklist developed by Lee (2020a). Lee (2020) composed the creativity competency, confluence competency, and future talent characteristics as measurement factors but future creativity confluence was suggested to be the integration of creativity competency and confluence competency in the study performed by Lee & Jun (2021). Table 2 shows the test reliability and question composition of this study.

Table 2
Questions composition and reliability of F3C test

Factors		Question Number and Number of Questions	Cronbach α
Creativity competency	Creative ability	1-9	.880
	Creative personality	10-17	.805
Confluence competency	Integrated thinking	18-22	.806
	New knowledge formation and value creation	23-27	.756
Total		27 questions	.939

Simple Integration Creativity Test

In this study, a simple integration creativity test (K-ICT-S) developed by Lee (2020b, 2021) was used to measure university students' integration creativity. This test was based on the standardized integrated creativity test of Lee (2014) but was reconstructed to provide multiple choice answers based on more than 10 years of response data to solve the difficulty of grading (Bae & Lee, 2020). It was also redeveloped to enable online measurement for convenience of implementation. Table 3 shows the composition of reliability and detailed questions.

Table 3
Question composition and reliability of simple integration creativity test

Area		Sub factors	Question Number and Number of Questions	Cronbach α		
Creative ability	Shape Creativity	Fluency	1, 2, 3, 20, 21, 23	.789	.857	.867
		Sophistication	4, 5, 6, 8, 10	.761		
		Imagination	11, 12, 13, 15, 17	.479		
	Language Creativity	Sensitivity of thinking	14, 16, 18, 26	.618	.630	
		Creativity	7, 9, 24, 27			
		Flexibility	19, 22, 25, 28	.524		
Creative personality		Curiosity	1, 11, 18, 24, 25	.658	.878	
		Sensitivity	6, 8, 16, 23, 26	.670		
		Task obsession	7, 9, 15, 22, 27	.506		
		Humor	3, 5, 12, 21, 28	.763		
		Independence	4, 13, 17, 20, 29	.707		
		Problem-solving skills	2, 10, 14, 19, 30	.586		
Total			58 questions		.913	

Research procedure

Based on previous studies and literature, the university liberal arts courses, storytelling and peer coaching, were developed. In the second semester of 2020, 96 college students who took storytelling and peer coaching courses at S University in Seoul were tested before and after the future creativity confluence competency developed by Lee and Jun (2021) and the simple integrated creativity developed by Lee (2020b). The difference in improvement in future creative convergence competency and creativity was confirmed by using the data of 89 people, excluding insincere data among the collected data.

Data analysis

For the collected data, the Cronbach α coefficient was calculated using the SPSS 26.0 program, and a paired-sample t-test was conducted to examine the effect of each lecture on future creative convergence competency and creativity. In addition, two independent group t-tests were conducted to examine the difference between future creative convergence competency and creativity subjects.

Contents of Experimental Subjects

Storytelling Class

The subject of storytelling entails learning the theory and the reality of storytelling and developing competencies, such as creativity and communication. The class is conducted by utilizing lectures, debates, and flip and action learning. It actively induces student participation which led to practice. This class allows university students to acquire storytelling-related knowledge and theory, and utilize them, thus improving their creativity competency, communication competency, the strategy of actual storytelling utilization, and effective and meaningful communication and empathy.

Table 4
Storytelling class syllabus

Week	Keyword	Description	Teaching method
1	Orientation	OT. storytelling and the concept, necessity of storyteller, etc. -Core competency required in the future society, expression, and presentation skill	Lecture, Discussion (L & D)
2	Creativity competency	Concept and characteristics of creativity, strategy for competency improvement -Knowing and exercising creativity as a foundation for developing creativity competency	L & D
3	Communication competency	Concept and importance of communication skill, strategy for improving the competency of communication -Understanding communication and exercise to build communication skills	L & D
4	Story	Power and characteristics of story, role and meaning of story in the society -Story and bridge learning through storytelling	L & D
5	Story creation	Adaptation, creation- understanding, and practice of simple adaptations, translation, and remake	Lecture, Discussion, Action Learning, Presentation (L,D & ALP)
6	Story creation	Creative practice according to components of storytelling (characters, events, backgrounds, plots, messages)	L,D & ALP
7	Story creation	Understanding and practice of motive, genre, and plot	L,D & ALP
8	Midterm exam		
9	Story creation	Creative practice according to the process of creation (finding ideas, selecting themes, collecting materials, creating synopsis, setting characters, and writing according to plots)	L,D & ALP
10	Story delivery	Understanding of recipient and seeking how to convey	L,D & ALP
11	Story delivery	Fairy tale telling, speeches, presentations, self-introduction, etc.	L,D & ALP
12	Story delivery	Understanding and utilization of media 1 – Focusing on the movie “The Avengers”	L,D & ALP
13	Story delivery	Understanding and utilization of media 2 – Focusing on TV drama "Fiery Priest"	L,D & ALP
14	Story delivery	Present and future of digital storytelling	L,D & ALP
15	Final exam		

The storytelling class was structured organically based on the opinion of experts, and it was designed to utilize storytelling through practice. The curriculum consisted of 15 sessions, including midterm, final test. It was properly variated into total group, circle and each group, and conducted using various methods, such as lectures, discussions, and flip and action learning. Particularly, the class was conducted to provide actual benefits for students' career, such as presentation strategy which can be utilized in the creation of self-introduction, interviews by utilizing storytelling.

Peer Coaching Class

Peer coaching is a process in which Korean students and international students meet as peer coaches, learn the theory and practice of peer coaching, and develop a global creativity competency. The class is conducted in theory lectures and demonstrations, activity-oriented coaching practices, and feedback forms. The assignments include receiving professional coaching and peer coaching, and after coaching, students submit coaching reports. Through this, Korean students can foster creative leadership and coaching competency with global competency, while international students can improve their understanding of Korean language, Korean culture, learning, and adaptation to school life and belonging.

Table 5
Peer coaching class syllabus

Week	Keyword	Description	Teaching method
01	Orientation	Introduction of course Special Lecture, Take the Neuro Logical Levels Assignment Guide	Lecture, discussion, team teaching (L, D & TT)
02	Overview of peer coaching	The concept and philosophy of coaching The history of coaching and its relationship to the overall fields Peer coaching characteristics and differentiation strategies	Lecture, Peer coaching (L & Pc)
03	Seeking peer coaching customer	Principles and methods of peer coaching Seeking peer coaching customer through personality types Empathic Leadership for Peer Coaching	Discussion demonstration, Peer coaching (Dd & Pc)
04	Course and dialogue model of peer coaching	Peer coaching process Peer coaching conversation model Peer coaching conversation model practice and feedback	Dd & Pc
05	Making peer coaching relation	Ethics and Rules of Peer Coaching Building intimacy for peer coaching Formation of peer coaching alliance	Dd & Pc
06	Peer coach competency_active listening	Understanding of communication competency Active listening methods and strategies Active listening practice and feedback	Dd & Pc
07	Peer coach competency_strong questions	Power of powerful questions Various kinds of questions. Powerful questioning methods and practice	Dd & Pc
08	Peer coach competency_praise, recognition, encouragement	The method and reality of compliments The method and reality of recognition The method and reality of encouragement	Dd & Pc
09	Peer coach competency_feedback	The concept and importance of feedback Various feedback types Powerful feedback reality	Dd & Pc
10	Reality of peer coaching 1 _ learning coaching	Current state and desired state of learning Peer coaching to improve learning efficacy The process and reality of learning coaching	Dd & Pc
11	Reality of peer coaching 2 _ interventional learning coaching	12 interventional learning experiences Principles and methods of interventional learning coaching Process and practice of interventional learning coaching	Dd & Pc
12	Reality of peer coaching 3_global competency coaching	Understanding global competency Understanding and adapting to different cultures Global competency coaching	Dd & Pc
13	Reality of peer coaching 4 _ career coaching	Concept and core of career coaching Understanding career coaching process Reality and feedback of career coaching	Dd & Pc
14	Reality of peer coaching 5_self leadership coaching	Coaching vision and goals Coaching self-management and time management Self-coaching	Dd & Pc
15	Reality of peer coaching 6_cooperation leadership coaching	Interpersonal relation coaching Coaching empathy and cooperation Comprehensive evaluation and feedback	Dd & Pc

In the peer coaching class, theory learning is conducted by advance video, and zoom type, non-face-to-face medium is used for peer coaching practice and feedback. In the middle of the course, all students receive individual, one-on-one, non-face-to-face coaching with a professional coach for a total of four sessions of one hour each. In the end of the course, students conduct one-on-one, non-face-to-face coaching with the peer selected by students themselves for a total of 4 sessions of 30 minutes each. After professional coaching and peer coaching, students create and submit the coaching report in every session.

FINDINGS

Pre-Post Comparison of Storytelling Class

The average difference verification was conducted with the response example t-test by using the pre-test and post-test scores. Table 6 shows the results.

Table 6
Difference between pre-post test: storytelling class N=52

Factors	Sub factors	Before M(SD)	After M(SD)	Corresponding difference M(SD)	t	p
Future creativity confluence competency	Creative ability	3.466(.707)	3.878(.619)	.412(.989)	3.005	.004
	Creative personality	3.599(.674)	3.844(.609)	.245(.897)	1.971	.054
	Integrated thinking ability	3.565(.745)	3.746(.616)	.181(.900)	1.449	.154
	New knowledge and value creation ability	3.465(.759)	3.665(.746)	.200(.950)	1.519	.135
Creativity	Shape creativity	3.297(.614)	3.662(.670)	.364(.577)	4.554	.000
	Language creativity	3.327(.448)	3.622(.587)	.295(.509)	4.179	.000
	Integrated Creative ability	3.312(.481)	3.642(.573)	.330(.461)	5.156	.000
	Integrated Creative personality	3.581(.517)	3.838(.533)	.257(.360)	5.152	.000

For creative ability among sub factors of future creativity confluence, the average of post-test (3.878) was higher than the average (3.466) of pre-test, showing the statistically significant difference ($p<.05$). Creative personality, integrated thinking ability, new knowledge, and value creation ability, which are other sub factors, showed no statistically significant difference ($p>.05$).

Creativity showed statistically significant difference in all the sub factors. For the shape creativity, the average of post-test (3.662) was higher than the average of pre-test (3.297), showing the statistically significant difference ($p<.001$). For learning creativity, the average of post-test (3.662) was higher than the average of pre-test (3.327), showing the statistically significant difference ($p<.001$). For the integrated creativity ability, the average of post-test (3.642) was higher than the average of pre-test (3.312), showing the statistically significant difference ($p<.001$). For the integrated creative personality, the average of post-test (3.838) was higher than the average of pre-test (3.581), showing the statistically significant difference ($p<.001$).

Thus, "Bridging Creativity and Communication by Storytelling" class was effective in improving the creative ability of future creativity confluence competence and the

creativity of university students. The fact that the storytelling subject has an effect on creative ability, which is a sub-factor of the future creative convergence competency, is interpreted as the influence of the university students participating in the experiment to create a story and to acquire and use various delivery methods in the storytelling subject. It has been proven that creativity and communication bridging pursued in the storytelling subject are effective for the improvement of graphic creativity, verbal creativity, integrated creative ability, and integrated creative personality, which are sub-factors of creativity.

Pre-Post Comparison of Peer Coaching Class

The average difference verification was conducted with the response example t-test by using the pre-test and post-test scores. Table 7 shows the results.

Table 7
Difference between pre-post test: Peer coaching N=37

Factors	Sub factors	Before M(SD)	After M(SD)	Corresponding difference M(SD)	t	p
Future creativity confluence competency	Creative ability	3.450(.710)	3.742(.763)	.291(.452)	3.917	.000
	Creative personality	3.615(.619)	3.838(.756)	.223(.594)	2.281	.029
	Integrated thinking ability	3.605(.639)	3.886(.651)	.281(.551)	3.105	.004
	New knowledge and value creation ability	3.551(.640)	3.870(.698)	.319(.540)	3.589	.001
Creativity	Shape creativity	3.280(.497)	3.640(.518)	.361(.495)	4.434	.000
	Language creativity	3.320(.465)	3.655(.618)	.336(.425)	4.801	.000
	Integrated Creative ability	3.300(.434)	3.648(.543)	.348(.430)	4.924	.000
	Integrated Creative personality	3.594(.437)	3.838(.548)	.244(.401)	3.706	.001

Peer coaching showed statically significant difference in the future creativity confluence. When reviewing the sub areas of future creativity confluence, the post-scores of creative abilities ($t=3.917$, $p<.001$), creative personality ($t=2.281$, $p<.05$), integrated thinking ability ($t=3.105$, $p<.001$), new knowledge and value creation ability ($t=3.589$, $p<.001$) were higher than the pre-test scores. The peer coaching class was effective in improving future creativity confluence and also improved their creative ability, creative personality, integrated thinking ability, new knowledge and value creation ability, which are sub factors.

Peer coaching showed statistically significant difference in the creativity test. When reviewing the sub areas of creativity, the post-scores of shape creativity ($t=4.454$, $p<001$), language creativity ($t=4.801$, $p<.001$), integrated creative ability ($t=4.924$, $p<.001$), integrated creative personality ($t=3.706$, $p<.001$) were higher than the pre-test scores. The peer coaching class was effective in improving the creativity and also improved shape creativity, language creativity, integrated creative ability, and integrated creative personality, which are sub factors.

The peer coaching class was conducted focusing on the coaching conversation model of awareness, choice, an execution. This method of peer coaching had a positive effect in improving the future creativity confluence and creativity of university students.

Difference Between Two Classes in F3C and Creativity

Table 8 shows the results of two independent group t-tests to confirm homogeneity between the two subjects in the pre-test.

Table 8
Difference Between Two Classes in F3C, Creativity (Pre-Test)

Factors	Sub factors	Group	N	M	SD	t	p
Future creativity confluence competency (F3C)	Creative ability	Storytelling	52	3.466	.707	.101	.920
		Peer coaching	37	3.450	.710		
	Creative personality	Storytelling	52	3.599	.674	-.116	.908
		Peer coaching	37	3.615	.619		
	Integrated thinking ability	Storytelling	52	3.565	.745	-.265	.792
		Peer coaching	37	3.605	.639		
	New knowledge and value creation ability	Storytelling	52	3.465	.759	-.561	.576
		Peer coaching	37	3.551	.640		
Creativity	Shape creativity	Storytelling	52	3.297	.614	.144	.886
		Peer coaching	37	3.280	.497		
	Language creativity	Storytelling	52	3.327	.448	.073	.942
		Peer coaching	37	3.320	.465		
	Integrated Creative ability	Storytelling	52	3.312	.481	.124	.901
		Peer coaching	37	3.300	.434		
	Integrated Creative personality	Storytelling	52	3.581	.517	-.124	.902
		Peer coaching	37	3.594	.437		

The subjects of storytelling and peer coaching showed no statistically significant difference in future creativity confluence.

For the sub factors of the same, storytelling and peer coaching classes showed differences in creative ability (t=.101), creative personality (t=-1.116), integrated thinking ability (t=-.265), new knowledge and value creation ability (t=-.561). However, these were statistically insignificant.

Regarding creativity, storytelling and peer coaching classes showed no statistically significant difference. For the sub factors of creativity, storytelling and peer coaching classes showed differences in shape creativity (t=.144), language creativity (t=.073), integrated creative ability (t=.124), integrated creative personality (t=-.124). However, these were statistically insignificant.

In the pre-test, the storytelling and peer coaching classes showed no difference in terms of future creativity confluence and creativity.

Table 9
Difference between two classes in f3c, creativity (Post-test)

Factors	Sub factors	Group	N	M	SD	t	p
Future creativity confluence competency (F3C)	Creative ability	Storytelling	52	3.878	.619	.93	0.355
		Peer coaching	37	3.742	.763		
	Creative personality	Storytelling	52	3.844	.609	.041	0.968
		Peer coaching	37	3.838	.756		
	Integrated thinking ability	Storytelling	52	3.746	.616	-1.034	0.304
		Peer coaching	37	3.886	.651		
	New knowledge and value creation ability	Storytelling	52	3.665	.746	-1.311	0.193
		Peer coaching	37	3.870	.698		
Creativity	Shape creativity	Storytelling	52	3.662	.670	.162	0.872
		Peer coaching	37	3.640	.518		
	Language creativity	Storytelling	52	3.622	.587	-.26	0.795
		Peer coaching	37	3.655	.618		
	Integrated creative ability	Storytelling	52	3.642	.573	-0.051	0.959
		Peer coaching	37	3.648	.543		
	Integrated creative personality	Storytelling	52	3.838	.533	0	1
		Peer coaching	37	3.838	.548		

Storytelling and Peer coaching showed no statistically significant difference in terms of future creativity confluence.

Regarding the sub factors of future creativity confluence, storytelling and peer coaching classes showed differences in creative ability (t=.93), creative personality (t=-.041), integrated thinking ability (t=-1.034), new knowledge and value creation ability (t=-1.311). However, these were statistically insignificant.

Regarding creativity, storytelling and peer coaching classes showed no statistically significant difference. In terms of the sub factors of creativity, storytelling and peer coaching classes showed differences in shape creativity (t=.162), language creativity (t=-.26), integrated creative ability (t=-.051), while integrated creative personality (t=0) showed no difference. Thus, regarding the sub factors of creativity, the two subjects showed no statistically significant difference.

The post-test showed no difference in which subject among storytelling and peer coaching is more effective in the future creativity confluence and creativity test. 2 subjects were effective in Future Creativity Confluence and Creativity respectively but showed no effect difference between 2 subjects.

DISCUSSION AND CONCLUSION

The storytelling class was found to be effective in improving the creative ability, a sub factor of future creativity confluence competency, and the creativity competency, of university students. The study by Lim et al. (2008) suggested “creativity” as the most

important core competency which should be focused on in order to nurture excellent talents across all competencies in the future society. To cope with the future entailing unlimited competition, amazing speed, and various values, the thinking ability, which can inspire unique and creative ideas, the role of creativity is important (Lee & Yoo, 2014). The necessity to develop teaching methods that can instill this core competency is increasing, and requests for universities or lifelong education institutes to actively conduct creativity and core competency-related lectures or major lectures as well as develop relevant programs are being raised (Lee, 2017).

Since the need for developing and implementing programs to improve this core competency is urgent, it was hard to find a program that could enhance the creativity competency targeting university students. Lee (2017a) pointed out that studies on core competency and creativity characteristics of university students are relatively insufficient. Kim (2010) emphasized on the urgent need to introduce programs that use storytelling for university students by suggesting a plan for nurturing storytellers. In this context, the storytelling class could confirm the improvement of competency, such as creativity and creative ability of university students. This study is meaningful in that it is a study wherein a storytelling class was made to enhance the competency of university students, and the effect was also verified.

Analysis of a total of 65 papers published by Jung et al. (2016), from 2003 to February 2016, revealed that education using storytelling is mainly conducted for children and elementary school students. This means that the use of adult learning, including one for university students, is rare. It is meaningful that Bae (2018)'s storytelling education has a significant impact on creativity, which proves that this study is effective on creativity and creative ability of university students through this storytelling class. Therefore, it will be necessary to further expand competency education using storytelling in adult learning and for university students.

Peer coaching is effective in improving future creativity confluence competency of university students. It improved their creative ability, creative personality, integrated thinking ability, new knowledge and value creation ability. These results would influence to coaching skills, such as the philosophy, the practice of peer coaching, repeated performance of ACE peer coaching conversation model (awareness, choice, and execution), question and listening, support, encouragement, and feedback. When peer coaching class explores various alternatives to problems, it helps to improve creative ability, which is the cognitive ability to devise creative alternatives. In peer coaching, curiosity, sensitivity to each other, and task preoccupation are helpful for the creative personality, which is an affective characteristic. Peer coaching helps students of various majors to understand, analyze, reason, and share information, knowledge and skills with each other, so that they can think in an integrated way, as well as construct new knowledge and create value by reconstructing new knowledge through an interdisciplinary approach. These results are in line with the research result (Park, 2020) wherein the coach mind competency and coaching skill competency, which are sub factors of coaching competency, influence creativity confluence competency. Self-reflection positively and significantly impacted creative convergence competency (Kim

& Moon, 2019), and it is related with the improvement of creativity confluence competency in that the questions and coaching conversation model of peer coaching allows the self-reflection.

The peer coaching class was effective in improving the creativity of university students. It was effective in improving the shape creativity, language creativity, integrated creative ability, and integrated creative personality. Fluency, elaboration, imagination, which are sub factors of shape creativity; and sensitivity and originality of thinking, which are sub-factors of language creativity, influenced mutual interaction in peer coaching, such as self-examination of questions in peer coaching, setting goals, searching for alternatives or options, and finding and overcoming obstacles. To be creative, reflection and self-awareness are essential (Rogers, 1954), and coaching provides space and support for reflection and self-awareness (Cox et al., 2014). Kim & Kang (2018) suggested that to develop the creativity of university students, learner-oriented teaching methods and realistic topics that students can pay attention to and sympathize with are needed. Peer coaching classes are conducted based on peer-to-peer practice, and coaching topics are also selected by peers. Hence, it is effective in improving the creativity of university students.

There were no differences between the two subjects included in the experiment. It was impossible to gauge the individual effectiveness of the storytelling class and peer coaching class for improving university students' future creativity confluence competency and creativity competency. However, both effectively improved future creativity confluence and creativity in the liberal arts courses.

Universities lack subjects that could cultivate creative confluence competency and creativity for nurturing the future core talent for the Fourth Industrial Revolution era. From this perspective, subjects utilizing storytelling and peer coaching can improve the creativity and creativity confluence competency of university students, which can be beneficial to the development of various liberal arts courses.

A limitation of this study is that the study subjects were only students from one university. There is a need to conduct research with several university students. In addition, although research has been conducted focusing only on future creativity confluence and creativity, it is also necessary to study whether storytelling subjects and peer coaching subjects can develop various competencies.

The study shows that storytelling subjects and peer coaching subjects have a significant effect on enhancing the future creativity confluence and creativity competencies of university students. Although this study was conducted on university students, future studies on whether these subjects affect adult learners of various age groups in the field of lifelong education should also be conducted. In addition, various subjects to enhance the competencies of university students should be continuously researched, newly established, and utilized.

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