

A Convergent Study on The Impact of a Calligraphy Extracurricular Program on Nursing Students' Career Decision Making Self-Efficacy and Self-Leadership

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Abstract

This study was a single-group pre-post survey carried out to analyze the effects of a calligraphy extracurricular program on nursing students' career decision making self-efficacy (CDMSE) and self-leadership. The subjects of this study were 230 second-year nursing students. The collected data were analyzed using SPSS WIN 25.0 program for descriptive statistics, paired t-test, one-way ANOVA, and Pearson correlation coefficient. After the calligraphy extracurricular program, CDMSE ($t=7.20$, $p<.001$) and self-leadership ($t=6.80$, $p<.001$) both advanced, and there was a significant difference in all detailed item. As a result of analyzing CDMSE and self-leadership, it was found that there was a strong correlation both before ($r=.81$, $p<.001$) and after ($r=.85$, $p<.001$) the program. As a result of this study, the effectiveness of the calligraphy extracurricular program was verified, and it is believed that the desire for aesthetic experience can be satisfied. University education should continue to provide students with a variety of opportunities to improve their capabilities in various ways by organizing a variety of helpful extracurricular programs.

Keywords: Art Therapy, Extracurricular, Career Choice, Self-efficacy, Leadership

INTRODUCTION

Today, the word calligraphy, used in various fields, refers to beautiful handwriting. Its etymology is derived from the Greek words 'kallos', which means aesthetic, and 'graphy', which means handwriting, hand-drawn pictograms. In modern times, where emotional society is highlighted, calligraphy is used in diverse visual content and is attracting attention as a method for touching interact with the people. Among digital impression created by computer graphics, calligraphy is attracting interest as a method of free and unique expression and oriental beauty with human sensibility. Calligraphy has no restrictions on tools or materials, allowing for free expression, making it suitable for revealing one's individuality and sensibility [1].

Today's younger generations are more comfortable with computer typing than with handwriting. Calligraphy awakens analog sensibility and pleasure of writing by hand and emotions that cannot be felt from computer type. Hangul calligraphy inculcates a positive awareness of Korean's unique language and characters and can also raise perception of formativeness.

Recently, as the importance of extracurricular programs in university education has become more prominent, various extracurricular programs have been provided to fill in the areas that are difficult to cover in majors and liberal arts courses. Therefore, efforts are being made to strengthen core competencies and increase effective learning effects to embody the concept of human ideal talent pursued by the curriculum with the competencies necessary for career decision, employment, and living in the future society. The importance of extracurricular programs has been proven through several studies. Through extracurricular education, students experience academic achievement and self-efficacy [2] and improve interpersonal relationships [3]. And they adapt well to college life and experience self-esteem and improved motivation for achievement [4]. Therefore, various attempts are continuously being made, such as personality development, leadership development, and self-directed and self-regulated capacity development programs through extracurricular education [5].

Unlike other majors, nursing students have the characteristic of entering college with a firm faith in the profession of nursing and a predestined career direction. However, due to the adaptation to the department

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and the tight curriculum, there is a lack of in-depth consideration of career paths. Usually, students naturally become nurses as soon as they enter college, but since there are many careers to choose from outside of hospitals, they must explore and decide on their own career path. Career decision-making self-efficacy (CDMSE) is the confidence in one's capabilities related to one's career path. CDMSE refers to belief in one's own actions, such as goal selection, job information, problem solving, and future planning. Meanwhile, Self-leadership is a concept that plays an important role in personal growth and development. Self-leadership is the inner incitement to set one's own goals, view oneself as a leader, act proactively, and achieve goals with a sense of responsibility, and is thought to have a positive effect on CDMSE.

Field [6] suggests that self-efficacy and happiness can be increased through certain learning or participatory activities. In this context, looking at previous studies related to self-efficacy and self-leadership through various learning and activities, young people's participation in positive psychology programs [7], adult women's yoga activities [8], and adults' daily sports activities are related to self-efficacy and self-leadership. Although there is an effect on happiness [9], there is little research on the effect of calligraphy activities on participants' CDMSE and self-leadership. Accordingly, this research aims to determine the impact of nursing students' experience of participating in a calligraphy extracurricular program on their CDMSE and self-leadership.

This survey conducted a calligraphy extracurricular program for nursing students and attempted to determine its impact on CDMSE and self-leadership. The specific purposes are as follows.

First, determine the degree of CDMSE and self-leadership according to the subject's general characteristics.

Second, find out the effect of the calligraphy extracurricular program on college students' CDMSE.

Third, find out the effect of the calligraphy extracurricular program on college students' self-leadership.

Fourth, identify the relationship between CDMSE and self-leadership after the calligraphy extracurricular program.

MATERIALS AND METHODS

Research Design

This study is a single-group before-and-after experimental design to verify the effects of a calligraphy extracurricular program on nursing students' CDMSE and self-leadership.

Subject of the Study

The subjects of this study were second-year nursing students at KD University who consented to participate in the study, completely understood the purpose and process of this study, and gave written permission to participate in the study. Students were recruited freely through notices on the department bulletin board, and those who agreed to partake in the survey among the calligraphy extracurricular program participants were selected as research subjects. A total of 274 students participated in the calligraphy program, and data from 230 respondents were investigated, excluding 44 respondents who responded insincerely to the survey.

Tool of the Study

The general characteristics of this survey consisted of six items: sociodemographic characteristics such as age, gender, motivation for choosing nursing, satisfaction with the major, degree of self-expression, and degree of interpersonal relationships.

The CDMSES measurement in this study used the CDMSES-Short Form, an abbreviated scale of the original tool [10], translated into Korean and validated [11]. This scale consists of 4 factors (total 25 questions): 11 questions about goal selection, 6 questions about career information, 3 questions about problem solving, and 5 questions about future plans. It ranges from 1 point 'not at all' to 5 points 'very much so', and the total range is from a minimum of 25 points to a maximum of 125 points, with a higher total score indicating higher CDMSES. In this study, Cronbach's α was .90.

To measure self-leadership, a modified and supplemented tool [13] of the original tool [12] was used. It consists of 6 factors and a total of 18 questions: 3 questions about self-expectation, 3 questions about rehearsal, 3 questions about goal setting, 3 questions about self-reward, 3 questions about self-criticism, and 3 questions about constructive thinking. The total range is from 1 point 'not at all' to 5 points 'very much so', with a total range from a minimum of 18 points to a maximum of 90 points, with a higher total score indicating higher self-leadership. In this study, Cronbach's α was .85.

Data Collection and Analysis

During the first semester of the 2022 school year, a calligraphy extracurricular program was held for a total of 4 sessions, once a week, 50 minutes per session. The program was managed by two experts who had acquired professional calligraphy instructor certification and had several years of experience teaching calligraphy courses to the general public.

The detailed program is as follows: 1st session - basic understanding of calligraphy, areas where calligraphy is used, basic principles of using calligraphy, 2nd session - simple calligraphy demonstration, 3rd session - basic level short sentence writing training, 4th session - Creating calligraphy works. The pre- and post-survey was conducted 5 days before the start of the calligraphy program and 5 days after the end, and the time required to fill out this questionnaire was 10 to 15 minutes.

The data collected in this study were investigated using the Statistical Package for the Social Science WIN 25.0 program. Frequencies, percentages, averages, and standard deviations were calculated to identify the general characteristics of the subjects. A paired t-test was conducted to find out the impact of the calligraphy extracurricular program on nursing students' CDMSE and self-leadership. After applying calligraphy program, the relationship between nursing students' CDMSE and self-leadership was analyzed using Pearson correlation coefficient.

RESULTS

General Characteristics Of Respondents

The general characteristics of the respondents are shown in Table 1.

Table 1. General Characteristics of Respondents (N=230)

Variable	Classification	N(%) or Mean \pm SD
gender	male	33(14.3)
	female	197(85.7)
Age	≤ 22	8(3.5)
	> 22	222(96.5)
		20.1 \pm 1.52
Admission motivation	Encouragement by parents	21(9.1)
	Encouragement by teachers	9(3.9)
	Considering the high employment rate	109(47.2)
	for social service	23(12.1)
	according to GPA	8(3.5)
	according to my will (aptitude)	47(20.3)
	Others	8(3.9)
Satisfaction with major	Good	164(71.4)
	Middle	55(23.8)
	Bad	11(4.8)
		7.28 \pm 1.89
Relationships	Good	112(48.9)

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Self-expression	Average	100(43.3)
	Difficult	18(7.8)
	Good	93(40.3)
	Average	107(46.8)
	Difficult	30(13.0)

CDMSE and Self - Leadership Before And After Calligraphy Extracurricular Program

CDMSE ($t=7.20, p<.001$) and self-efficacy ($t=6.80, p<.001$) both increased after the program, with significant differences in each of the subcategories (Table 2).

Table 2. CDMSE and Self-Leadership before and after Calligraphy Extracurricular Program (N=230)

Variable		Pre-test	Post-test	t	p
		Mean±SD	Mean±SD		
CDMSE	Total	3.82±0.64	4.07±0.68	7.20	<.001
	Goal selection	3.91±0.66	4.10±0.68	5.53	<.001
	Career information	3.85±0.70	4.09±0.72	5.78	<.001
	Problem solving	3.76±0.74	4.00±0.77	5.17	<.001
	Future planning	3.64±0.72	4.01±0.75	8.62	<.001
Self-leadership	Total	3.82±0.58	4.06±0.66	6.80	<.001
	Self-expectation	3.87±0.74	4.10±0.74	5.50	<.001
	Rehearsal	3.97±0.71	4.16±0.73	4.44	<.001
	Goal setting	3.83±0.71	4.13±0.76	6.70	<.001
	Self-reward	4.00±0.68	4.15±0.74	3.51	.001
	Self-criticism	3.56±0.77	3.77±0.89	3.73	<.001
	Constructive thinking	3.70±0.72	4.04±0.80	7.30	<.001

Differences of CDMSE and Self-Leadership Between Post-Pre-According To General Characteristics

There was a difference in self-leadership before and after the program depending on satisfaction with the major ($F=4.06, p=.019$), but the difference between groups was not significant in the post hoc test (Table 3).

Table 3. Differences of CDMSE and Self-Leadership between Post-Pre according to General Characteristics (N=230)

Variable	Classification	N(%) or Mean±SD	CDMSE(post-pre)		Self-leadership (post-pre)	
			Mean±SD	t/F(p)	Mean±SD	t/F(p)
gender	male	33(14.3)	0.38±0.59	1.65(.100)	0.37±0.65	1.25(.219)
	female	198(85.7)	0.22±0.50			
Age	≤22	8(3.5)	0.23±0.50	1.46(.188)	0.23±0.52	-0.71(.480)
	> 22	223(96.5)	0.63±0.77			
		20.1±1.52				
Admission motivation	Encouragement by parents	21(9.1)	0.18±0.39	1.29(.263)	0.16±0.36	0.88(.513)
	Encouragement by teachers	9(3.9)	0.65±1.1		0.40±0.53	

			3			
Satisfaction with major	Considering the high employment rate	109(47.2)	0.27±0.54		0.23±0.58	
	for social service	23(12.1)	0.21±0.38		0.26±0.49	
	according to GPA	8(3.5)	0.20±0.29		0.45±0.76	
	according to my will(aptitude)	47(20.3)	0.17±0.40		0.16±0.47	
	Others	9(3.9)	0.19±0.36		0.46±0.48	
	Good	165(71.4)	0.21±0.51		0.19±0.48	
	Middle	55(23.8)	0.34±0.53	1.40(.248)	0.41±0.64	4.06(.019)
	Bad	11(4.8)	0.18±0.51		0.09±0.51	
	Relationships		7.28±1.89			
	Good	113(48.9)	0.21±0.41		0.24±0.47	
Average	100(43.3)	0.29±0.63	0.93(.395)	0.23±0.59	0.02(.978)	
Difficult	18(7.8)	0.16±0.36		0.24±0.53		
Self-expression	Good	93(40.3)	0.20±0.45		0.21±0.51	
	Average	108(46.8)	0.24±0.50	1.30(.274)	0.25±0.54	0.19(.827)
	Difficult	30(13.0)	0.37±0.70		0.27±0.56	

Correlations among CDMSE and Self-Leadership Before and After Calligraphy Extracurricular Program

As a result of analyzing CDMSE and self-leadership before the program, there was a strong correlation ($r = .81, p < .001$), and a strong correlation was found after the program ($r = .85, p < .001$) (Table 4).

Table 4. Correlations among CDMSE and Self-Leadership before and after Calligraphy Extracurricular Program

Variables	CDMSE before program	Self-leadership before program	CDMSE after program	Self-leadership after program
	$r(p)$	$r(p)$	$r(p)$	$r(p)$
CDMSE before program	1			
Self-leadership before program	.81(<.001)	1		
CDMSE after program	.70(<.001)	.69(<.001)	1	
Self-leadership after program	.57(<.001)	.64(<.001)	.85(<.001)	1

DISCUSSION

As nursing students enter the nursing department and their career as a nurse is already decided upon, it can be said that they begin their job search without giving in-depth consideration to their career exploration. There is also a study [14] that reported that the more students think their job is fixed from the start, like nursing students, the higher their job-seeking stress is. In order to help nursing students successfully find employment and adapt to various practical fields, it is necessary for university education to provide specific career related education, provide counseling and strengthen career preparation capabilities. The American Art Therapy Association

presents the purpose of art therapy as “providing opportunities for non-verbal expression and communication by utilizing art media, the art creation process, and the subject’s reflection on the created work of art.” And it is defined as “the realization of services that reflect on personal development, abilities, personality, interests, inner concerns, conflicts, etc.” [15]. Art therapy includes not only calligraphy, but also music, dance, reading, painting, and horticultural therapy [16].

Through this study, it was confirmed that CDMSE and self-leadership were improved after applying the calligraphy extracurricular program. Previous research in the same context as the results of this study included a study [17, 18] that found that a group art program for college students was effective in strengthening CDMSE and problem-solving abilities. There were also studies [19-22] that showed that it was effective in improving ego resilience, CDMSE, and career maturity. When comparing the results of this study with other studies, calligraphy, which essentially gives human sensibilities and aesthetic pleasure, allows expression of internal emotions that are relatively difficult to express externally, and is a tool that can express and convey emotions well from a human and emotional perspective. Therefore, it can be analyzed that it can bring positive changes to nursing students' self-efficacy such as problem solving and future planning, and self-leadership such as self-expectation, positive experience, and constructive thinking. There was a strong correlation between CDMSE and self-leadership. Studies in the same context as the results of this study include a study that investigated the effect of a group art program on CDMSE and self-leadership of nursing students [23] and a study that examined the effect of self-leadership on the CDMSE of college students majoring in Taekwondo [24]. Looking at another study related to art therapy, a study found that art therapy including calligraphy was effective in reducing depression, anxiety, and stress and improving psychological well-being in college students [25], and art therapy including clay making was effective in reducing stress and anxiety in college students [26]. In addition, there is an experimental study [27] that demonstrated the effect of stress reduction by showing a decrease in heart rate and an increase in skin temperature in the stress indicators of graduate students and faculty who applied calligraphy.

Modern university education requires the design, development, and operation of a systematic and flexible extracurricular curriculum, so it is necessary to organize a variety of extracurricular programs necessary for students to improve students' capabilities in various ways. A good extracurricular program can contribute to enhancing understanding of people and culture and humanities knowledge [28]. The calligraphy extracurricular program allows students to experience psychological relaxation and emotional tranquility and can also satisfy the desire for aesthetic experience.

This aesthetic sensibility is not just the experience of looking for beauty; one sense simultaneously evokes sensations in other areas throughout one's life. It is the power to realize the impact on one's emotions and feelings based on what one understands and feels, and to independently judge and act [29].

Aesthetic sensibility is the power to capture the overall quality of various social issues, including beauty, and to actively judge and act. Therefore, aesthetic sensibility can be linked to interest in everything around us, including the ecology, environment, and social changes surrounding humans. Humans come to recognize that each element does not exist separately from one another, but collectively forms a system. Therefore, the will and effort to respond to environmental issues such as the digital transformation of future society and the climate crisis, which are growing concerns and interests at home and abroad, is an aesthetic and emotional competency. What is required in the new digital environment, which is different from before, is digital sensibility, which means new aesthetic sensibility and expansion of senses [29]. In addition, at this time when we must respond sensitively to environmental issues and prepare countermeasures due to the serious global climate crisis, we must realize that nature itself has aesthetic value. In this way, it is ecological literacy that independently practices eco-friendly behavior based on empathy for the suffering of humans and nature existing in the ecosystem [30-33]. In this trend, aesthetic sensibility can be transferred to digital sensibility and ecological literacy, which are necessary in the era of the 4th industrial revolution where artificial intelligence and big data will be developed, and the safety of the ecosystem is threatened. With the convergence of the digital world and humans and the emergence of artificial intelligence, the distinction between machines and humans has become unclear, and as a result, emotions have emerged as one of human identity and dignity. Digital sensibility is presented as a

concept to independently accept and adapt to this digitally transitioned society, and to perceive and think about the expansion of human senses based on a humanistic understanding of it [29]. In a rapidly changing society, such as the pandemic, climate crisis, digital transformation, and declining school-age population, there is a need to develop the capabilities necessary for the future society and develop customized education services for learners. In modern times, calligraphy extracurricular programs can be used to develop college students' ability to respond to environmental issues such as industrial changes and climate crises due to the digital transformation of future society.

This study applied a calligraphy extracurricular program to students at a nursing college in some regions and confirmed CDMSE and self-leadership before and after the program. It was a single-group pre-post design study without a control group. Because it is a single-group pre-post design, there is a possibility of improvement in CDMSE and self-leadership due to the subjects' maturation. Additionally, because there is no control group, it is difficult to judgement that changes in CDMSE and self-leadership are the effects of the program. Additionally, because only nursing students at one university were selected as research subjects, there is a limitation in that a representative sample could not be formed. Therefore, it is hoped that stable research results on the effectiveness of the calligraphy extracurricular program will be derived through follow-up repeated research with a representative sample.

The results of this study found that the calligraphy extracurricular program was effective in promoting self-leadership and CDMSE in nursing students who did not have clear career goals. At a time when the implication of cultural arts education is increasingly emphasized around the world, the calligraphy extracurricular program integrates reason and emotion while pursuing beauty. This interactive process ultimately helps modern people think and make decisions actively. It can also be a driving force that drives humans to take action to achieve the goals they want to achieve. The calligraphy extracurricular program has the strength of laying the groundwork for the facilitation of fundamental arts to revitalize culture and arts and will help individuals pursue quality of life and self-realization by improving emotional expression and creative problem solving.

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