

A Study on the Structural Relationship about Online Dance Education Service Quality, Satisfaction, and Continuous Intention Participation in the Post COVID-19 Era Using SERVQUAL Models

Ji-Seol Lee¹, Jung-Hun An², and Sun-Young Lim²

¹(Department of Physical Education, Gangneung-Wonju National University, Gangneung, Republic of Korea)

²(Department of dance education, Kyung-Hee University, Seoul, Republic of Korea)

²(Department of Physical Education, Gangneung-Wonju National University, Gangneung, Republic of Korea)

Abstract

Background: This study empirically identified the relationship between online dance education service quality, satisfaction, and behavioral intention to continue participation perceived by university students who experienced online dance lectures as a liberal arts course during the COVID-19 period by using SERVQUAL Models.

Materials and Methods: During the COVID-19, a survey was conducted by selecting 500 university students in the Seoul region of Republic of Korea who participated in online dance education at universities as a sample group. All participants who participated in the survey provided informed consent. This research was approved by the Institutional Ethics Review Committee of Gangneung-Wonju National University and complied with research ethics. Data analysis was performed on Windows PC/SPSS 26.0 and AMOS 24.0 ver. frequency analysis, correlation analysis, confirmatory factor analysis and structural equation modeling were used to analyze the survey results. **Results:** First, all sub-factors (TB, RB, RS, AR, SF, and CPI) of online dance education service quality had a statistically consistent effect on university students' SF. Second, university students' SF on online dance education service quality had a statistically significant effect on CIP.

Conclusion: In conclusion, it was confirmed that TB, RB, RS, and AR of the quality of university online dance education service had a positive effect on college students' satisfaction, and due to the nature of subjects in the field of arts and sports, at present, online dance education is not a perfect substitute, but the direction of future dance education it seems reasonable to approach it as a supplementary role necessary for setting up.

Key Word: Post COVID-19 Era; Online Dance Education Service Quality; Online Dance Education Service Quality; SERVQUAL Models; Satisfaction; Continuous intention participation.

Date of Submission: 14-02-2023

Date of Acceptance: 28-02-2023

I. Introduction

Due to the COVID-19 pandemic, educational institutions around the world are facing an unprecedented crisis and experiencing new experiences along with many trials and errors. As each educational institution is partially or completely closed, it is estimated that 990 million students around the world are affected by COVID-19 [1]. The state and educational institutions are trying to revitalize non-face-to-face education to fill the learning gap for students, but infrastructure construction problems such as the Internet environment and the educational gap in using mobile devices for online education are still unresolved.

In this special situation of the times, the field of dance education is the most vulnerable to spatial constraints, unlike other genres of art. Non-face-to-face dance education, which was implemented in the early days of COVID-19, was an unfamiliar education method that was difficult to handle in the actual practical education field, but non-face-to-face classes are inevitable in arts middle and high schools and universities where practical dance education must be openly taught. The sudden transition to online classes caused instructors to seriously worry about the lack of adaptation to the e-learning system and how to communicate with students online [2], Students also asked for a refund of tuition fees due to the lack of alternatives to practical and practical subjects that cannot be replaced by remote classes, and the burden of learning due to the general task. As such, universities are places that form new values, but they are highly related to the problem of mental, physical, and behavioral stress depending on situational constraints [3].

In response, universities are making efforts to create an educational environment that can utilize the advantages of online learning and promote integrated online and offline education in order to adapt to the rapid change that they have not experienced [4]. This social phenomenon is reflected in the academic world, and

research on the problems and improvements of online education due to the spread of COVID-19 is being actively discussed [5-6]. In this regard, Kim & Moon (2020) [7], Kim (2020) [8], and Jung & Choi (2020) [9] conducted research to improve the problems of online dance education that occurred in the COVID-19 situation, but most of the online dance there is a lack of research that has led to discussions on practical improvement plans limited to education awareness surveys or current status analysis. In other words, in the current situation where COVID-19 is prolonged, it is time to conduct a detailed study on what kind of efforts should be made for online-based education considering the characteristics of dance education, where 'on-site' is prominent [10]. Moreover, dance education as a liberal arts class at a university has the meaning of liberal arts education or life-long education through dance, not simply art education through the body [11]. In particular, most dance subjects as liberal arts have a high motivation to accept learning through autonomous selection [12] and induce a positive response to the dance subject through physical achievements that naturally appear in the process, which affects the motivation to take classes and leads to leisure-type life-long education [13]. In other words, the ease of being able to easily experience dance activities that are difficult to encounter as a general student as a liberal arts class at a university will play an important role in daily life in the future. As a result, university students' awareness and satisfaction of online dance education service quality, which can be said to be the source of universities, can be presented as a decisive basis for increasing continued participation.

Therefore, this study purpose of empirically identify the relationship between online dance education service quality, satisfaction, and continuous intention participation of perceived by university students who experienced online dance lectures as a liberal arts course during the COVID-19 period by using SERVQUAL models. SERVQUAL models are service quality measurement tools developed through joint research by Parasuraman, Zeithaml, and Berry (1988) [14] evaluate service quality based on expectations and perceptions of specific services. In other words, SERVQUAL models is a technique that analyzes the degree of agreement between expectations and perceptions of university students, who are consumers of online dance education services, and can be said to be a suitable measurement tool to achieve the purpose of this study. The novelty of this study is to seek various online dance class methods that can meet the needs of students through the improvement of the service quality of university dance education in the post COVID-19 era and Using COVID-19 as an opportunity, not a crisis in dance education, it suggested the direction of the future-oriented education paradigm.

Conceptual Background

1. The relationship between tangibles (TB) and satisfaction (SF)

Tangibility (TB) includes physical facilities and tools used in online dance classes, and is a visible instructional material for communication between instructors and students [15]. A study by Kim [16] related to this revealed a significant relationship between the TB of online dance education service quality and learning satisfaction and Lee [17] argued that TB of human service quality in daily gymnastics strongly immerses in exercise, increases satisfaction and induces continued participation.

2. The relationship between reliability (RB) and satisfaction (SF)

Reliability (RB) is the ability to trust the promised educational service between the instructor and the learner and accurately carry out the learned content [18], which is the most important factor among the determinants of educational service quality perceived by students [19]. Accordingly, Paek & Lee [20] and Piccoli [21] presented research results that the higher the quality and RB of the online system, the more positive the effect on academic achievement and learning effect that can lead to student satisfaction.

3. The relationship between responsiveness (RS) and satisfaction (SF)

Responsiveness (RS) is the instructor's voluntary service to students taking online dance education and the will to provide educational services promptly to the students' needs [22]. Małgorzata et al. [23], through a study on exercise immersion and learning attitude in golf, said that the positive effect is high when responding immediately to learners' needs, complaints, and problems and providing friendly educational services, and Kim [24] also found that when satisfaction with dance classes is high, the RS of service quality is high, which is linked to the intention to continuously participate in dance education.

4. The relationship between assurance (AR) and satisfaction (SF)

Assurance (AR) is predicated on the instructor's effort to voluntarily individualize and understand the student. In other words, it is the ability to make students feel knowledge, ability, trust, and belief in online dance education services [22]. In this regard, Hwang [25] reported research results that AR of service quality in university classes can effectively improve learning satisfaction.

5. The relationship between satisfaction (SF) and continuous intention participation (CIP)

Satisfaction (SF) is a pleasant and positive psychological state experienced in the learning process as an individual student's feelings about the expectation that recognition, achievement, and reward will be obtained by participating in online dance education classes [26]. In addition, Continuous intention participation (CIP) is the student's willingness to continue participating in online dance education for a specific period of time until the student's set intention and purpose are achieved, and to participate in dance education even after the education is over Jung et al. [27]. Regarding the relationship between SF and CIP, Kuo et al. [28] said that students' satisfaction with education leads to diverse and positive responses to continued participation, and Bhattacharjee & Premkumar (2004) [29] suggested that students with a high level of satisfaction with online education showed a strong tendency to maintain it, which could affect the CIP, so they showed more dedication to online learning.

Based on the results of previous studies, the following hypotheses and models were established (Figure 1).

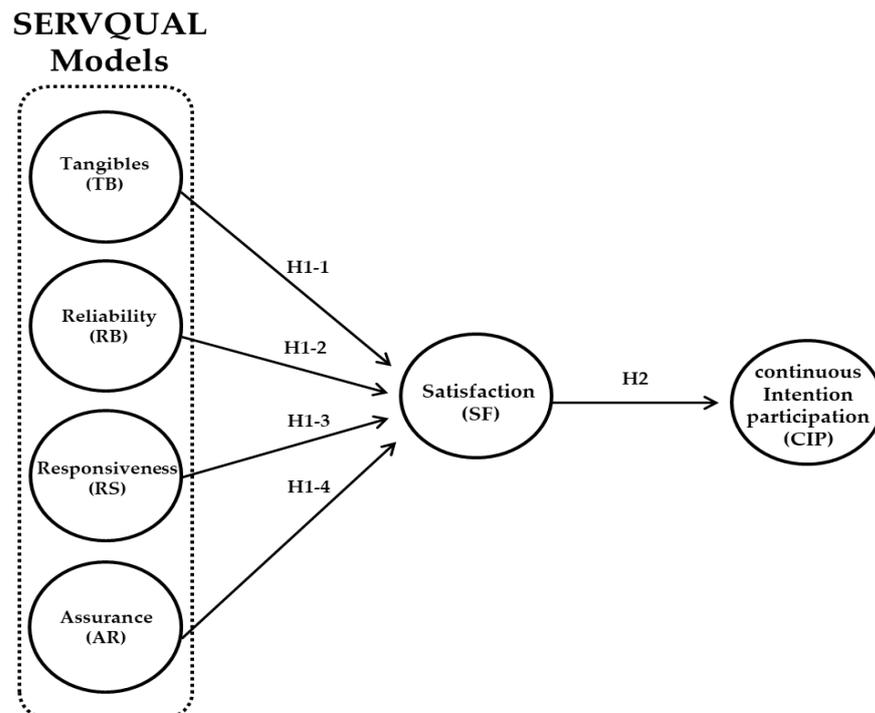


Figure no 1 : 1. Research mode

- H1-1: The TB, a sub-factor of SEVQUAL models will have a significant effect on SF.
- H1-2: The RB, a sub-factor of SEVQUAL models will have a significant effect on SF.
- H1-2: The RS, a sub-factor of SEVQUAL models will have a significant effect on SF.
- H1-3: The AR, a sub-factor of SEVQUAL models will have a significant effect on SF.
- H2: The SF will have a significant effect on CIP.

II. Material And Methods

Participants

In 2022, in South Korea number of university students about administrative district surveyed by the Korean Statistical information service (KOSIS, 2022) [30], in the Seoul region than in othe. Based on this, determined that the Seoul region was the most suitable to reflect the various personal characteristics of Korean university students, and 500 university students in the Seoul region who experienced online dance education during the COVID-19 during were selected as a sample group. To identify participants, the purposive sampling method used among non-probability sampling (random sample), and A non-face-to-face online survey was conducted in compliance with the quarantine guidelines following the COVID-19 pandemic. All participants who participated in the survey provided informed consent. This research was approved by the Institutional

Ethics Review Committee of Gangneung-Wonju National University and complied with research ethics. Questionnaires were distributed to a total of 500 undergraduates, and 475 questionnaires were selected and analyzed as final valid samples, excluding 25 that gave incomplete answers (Table 1).

Table no 1 : Shows metabolic parameters of patients of the three groups before treatment.

Variables	Classification	Frequency (n)	Percentage (%)
Gender	Male	225	48.6
	Female	46.3	51.4
Grade (University)	Freshmen	137	28.8
	Sophomore	128	27.0
	Junior	131	27.6
	Senior	79	16.6
Curriculum Information	One's own will	200	42.1
	Recommendation	90	18.9
	University website	160	33.7
	Community	25	5.3
Total		475	100

Measurement Tool

This study used a questionnaire that consisted of questions used and verified through previous studies. In order to measure the quality of online dance education services perceived by university students during the COVID-19 pandemic, the ‘SERVQUAL models’ developed by Parasuraman, Zeithaml, and Berry (1988) [14] were used and modified and supplemented to match the purpose and subject of this study. The detailed measurement questions consisted of three items about TB, three items about RB, three items about RS, and three items about AR. The questions that measured ‘SF’ consisted of three items defined by Cronin & Taylor (1992) [31] and Oliver (1993) [32] to meet the purpose and subject of this study. The questions to measure ‘CIP’ were composed of four items developed by Shin’s scale (2003) [33] modified and supplemented to match the purpose and subject of this research. All questions, except for the Demographic characteristic of participants, were measured using a 5-point Likert scale (1= not at all, 5= strongly agree).

Validity and Reliability of Measuring

A group of five experts, consisting of a professor in Sports Pedagogics, DFA (dance for all) professor, Sport Pedagogics Ph.D., and DFA Ph.D., verified the validity of the questionnaire’s contents. The content validity verification is conducted to confirm the appropriateness and representativeness of the question, and to verify whether each question is appropriate for the evaluation of the purpose as well as whether the content of the question faithfully represents the content to be measured [34]. In addition, a confirmatory factor analysis (CFA) was performed to present the contents of the questionnaire and to verify the discriminant validity thereof (Table 2) using the AMOS program, which was also used to implement the structural equation model. The number of factors and the measurement variables constituting them are designated prior to the analysis. Therefore, in the CFA, it was assumed that specific measurement variables are necessarily affected only by related factors and are not related to other factors based on strong theoretical background or previous research. In other words, confirmatory factor analysis can verify the discriminant validity that the correlation with other variables except for the measurement variables should be low (Van & Kloot, 2001) [35].

Table no 2 : Confirmatory factor analysis.

Variables	Items	SC	SE	t	CR	Cronbach’s α
Tangibility (TB)	The ODES has an operating system that can properly prepare for the COVID-19 situation.	0.870	-	-	0.917	0.915
	The operation of ODES courses is of a high standard.	0.916	0.036	28.818		
	There is no inconvenience in providing ODES.	0.869	0.041	25.914		
Reliability (RB)	ODES fulfills its promises regarding classes.	0.916	-	-	0.939	0.927
	The ODES provides an immediate solution to the issues issued.	0.869	0.035	30.996		
	The ODES notifies you of information and changes appropriately.	0.906	0.033	31.010		
Responsiveness	The ODES voluntarily helps students who have difficulties in class.	0.899	-	-	0.939	0.929

(RS)	The ODES appropriately includes the education (knowledge, skill) required by society.	0.891	0.030	31.135		
	The ODES provides the necessary information quickly.	0.904	0.030	32.303		
Assurance (AR)	The ODES trusts the students and guides them in a more progressive direction.	0.914	-	-	0.941	0.924
	The ODES is equipped with a communication channel that helps the students' individual interest and development.	0.898	0.032	32.135		
	The ODES provides appropriate answers to classes and questions.	0.092	0.030	32.492		
Satisfaction (SF)	I'm satisfied with the operation of the ODES during the COVID-19 pandemic.	0.913	-	-	0.931	0.931
	The ODES improved towards the second half.	0.890	0.032	30.528		
	I think it is very wise to take an ODES during the COVID-19 pandemic.	0.914	0.030	32.492		
Continuous Intention Participation (CIP)	I'm willing to take the ODES service again.	0.909	-	-	0.913	0.922
	I will continue to carry out what I have learned in my daily life even after the ODES service is over.	0.902	0.030	30.642		
	I want to participate in daily life dance as a leisure activity even after the ODES is over.	.0865	0.033	27.771		
$\chi^2=278.375$ ($df=120$, $p=.000$), CFI=.973, NFI=.962, TLI=.966, RMR=.022, RMSEA=.070						
ODES (online dance education service)						

According to Bagozzi and Dholakia (2002) [36], the best model was evaluated when CFI, NFI, and TLI were 0.8~0.9 or more, and RMR and RMSEA were 0.08 less. As a result of conducting confirmatory factor analysis based on this rationale, the model fit of this study was $\chi^2=278.375$, $df=120$, CFI=0.973, NFI=0.962, TLI=0.966, RMR=0.022, and RMSEA=0.070 which satisfies the acceptance level indicating a relatively good model. Also, the CR (construct reliability) of all variables was 0.913 to 0.941, indicating that the fit criteria suggested were (eigen value>0.5, CR>0.7) each variable was found to have concentrated validity by satisfying the values. Kim (2008) [34] explained that there was no problem with reliability if the alpha coefficient is .5 or more when the reliability test was carried out for all questions. As a result of using the internal consistency reliability analysis method with Cronbach's α value for reliability verification, it was found that Cronbach's α value was 0.915 ~0.931 with relatively high reliability.

Data Analysis Process

The questionnaire used for the final analysis was the result of a data analysis using Windows PC/SPSS 26.0 ver. and AMOS 24.0 ver. after coding and error reviews. First, demographic characteristic of the research participants were analyzed using a frequency analysis. Second, confirmatory factor analysis (CFA) was performed to verify all factors, and reliability verified by calculating the Cronbach's α coefficient to ensure internal consistency reliability. Third, correlation analysis was performed to analyze the relationship between variables, and structural equation modeling (SEM) was performed to derive a structural model.

III. Result

Correlation analysis

As a result of the correlation analysis between each variable, it was found that there was no multicollinearity problem because no variable showed a correlation of .8 or higher in the range of the correlation coefficient value (Challagalla & Shervani, 1996) of 0.614 to 0.787 (Table 3).

Table no 3 : Correlation analysis.

Variables	1	2	3	4	5	6
Tangibility ¹ (TB)	0.787					
Reliability ² (RB)	0.676** (.457)	0.837				

Responsiveness ³ (TRS)	0.692** (.479)	0.728** (.524)	0.837			
Assurance ⁴ (AR)	0.674** (.454)	0.768** (.590)	0.787** (.614)	0.844		
Satisfaction ⁵ (SF)	0.695** (.483)	0.656** (.430)	0.688** (.473)	0.714** (.510)	0.819	
Continuous Intention Participation (CIP)	0.624 (.389)	0.581** (.338)	0.614** (.377)	0.614** (.377)	0.656** (.430)	0.778

**P<0.01, () is the square value of the correlation coefficient, the shaded part is the AVE.

In addition, Fornel & Larcker (1981) [37] suggested that discriminant validity can be secured if the AVE value is larger than the squared value of the correlation coefficient the largest square value of the correlation coefficient was 0.787 (=0.614), and the smallest value of AVE was 0.778, ensuring discriminant validity.

Model Verification

The results of the analysis verified the suitability of the structural model established in this research: $\chi^2=419.711$, $df=124$, CFI=0.971, NFI=0.960, TLI=0.965, RMR=0.024, and RMSEA=0.071. According to Bagozzi and Dholakia (2002) [36], when the indicators of CFI, NFI, and TLI, which generally evaluate the overall fit of a model, are above 0.8-0.9 or more, RMR and RMSEA are evaluated as a good model when they are less 0.08. Therefore, it was confirmed that this research model explains the research hypothesis and empirical dataset as a suitable model for adoption relatively well (Table 4).

Table no 4 : Fit index of research model.

A construct	χ^2	df	p	CFI	NFI	TLI	RMR	RMSEA
Acceptance level	419.711	124	0.000	0.971	0.960	0.965	0.024	0.071

Hypothesis Testing

Based on the results of the testing analysis, H1-1 ($\beta=0.600$, $t=15.179$), H1-2 ($\beta=0.085$, $t=2.523$), H1-3 ($\beta=0.195$, $t=5.728$), and H1-4 ($\beta=0.498$, $t=13.485$), were accepted. H2 ($\beta=0.858$, $t=18.261$) was also accepted (Table 5).

Table no 5 : Hypothesis testing result.

H	Path	SE	C.R.	p	Accept/Reject
H1-1 Tangibility (TB) → Satisfaction (SF)	0.600	0.031	15.179	0.000***	Accept
H1-2 Reliability (RB) → Satisfaction (SF)	0.085	0.029	2.523	0.012*	Accept
H1-3 Responsiveness (RS) → Satisfaction (SF)	0.195	0.028	5.728	0.000***	Accept
H1-4 Assurance (AR)→ Satisfaction (SF)	0.498	0.032	13.485	0.000***	Accept
H2 Satisfaction (SF)→ continuous intention participation (CIP)	0.858	0.051	18.216	0.000***	Accept

*P<0.05, ***P<0.001

IV. Discussion

These results propose a discussion based on the results of analyzing the relationship between online dance education service quality, satisfaction, and continuous intention participation of perceived by university students who experienced online dance lectures as a liberal arts course during the COVID-19 period by using SERVQUAL models.

First, H1-1, that TB, a sub-factor of SEVQUAL models will have a significant effect on SF, was accepted. This is a result consistent with the study of Kim & Kang (2022) [38], who found that college kendo players' TB in online education service affects major satisfaction and career satisfaction, which positively affects career action preparation. TB in online dance education services means tangible clues such as facilities, equipment, and communication tools possessed by the entity providing education services. Therefore, instructors should make efforts to improve online lecture capabilities in order to develop and share customized contents for online dance education. Also, for smooth interaction with university students, it is necessary to secure various communication channels that can reduce the distance in the online space by actively utilizing e-lecture rooms, e-mail, and social media.

Second, H1-2, that RB, a sub-factor of SEVQUAL models will have a significant effect on SF, was accepted. This theoretically supports the results of this study in line with the studies of Kim (2020) [16], Park (2009), [39] and Shin & Hang (2006) [40] who reported that the RB of university online education services increases student satisfaction. RB is explained along with belief in the contents of online dance classes and acquisition of professional knowledge, so it can be interpreted as meaning that what students really want is the contents of the classes themselves. Ultimately, the most effective way to increase university students' satisfaction with online dance education is to improve the quality of lectures by instructors. For example, the quality of lectures can be improved by providing smooth feedback that can replace offline along with contents and latest information of education provided online. In addition, it is important to present credible standards not only in class content but also in evaluation methods.

Third, H1-3, that RS, a sub-factor of SEVQUAL models will have a significant effect on SF, was accepted. In this regard, Kim & Na (2021) [22] and Suh (2021) [41] emphasized that communication between professors and students is a strong factor influencing online education satisfaction, which is quite similar to the results of this study. In particular, since dance education should provide various educational opportunities for students to experience directly or indirectly in the online space, it is judged that the empathy and communication skills of the instructors are essential.

Fourth, H1-4, that AR, a sub-factor of SEVQUAL models will have a significant effect on SF, was accepted. According to Lee & Kim (2018) [42], the AR of educational service quality has a positive effect on student satisfaction reflecting the characteristics of educational service, which is in line with the results of this study. These results suggest that university students' who receive online dance education services value AR such as empathy and consideration through interaction with instructors as well as expertise that can be acquired in the learning process, which leads to satisfaction.

Finally, H2, that SF will have a significant effect on CIP, was accepted. Student satisfaction with online dance education is an important indicator of positive perception of the learning experience and learning performance, which affects continued participation in dance education [43]. As a result, it can be confirmed that it is important to manage and improve the quality of online dance education service in order to increase university students' satisfaction with online dance education.

V. Conclusion

This study empirically identified the relationship between online dance education service quality, satisfaction, and behavioral intention to continue participation perceived by university students who experienced online dance lectures as a liberal arts course during the COVID-19 period by using SERVQUAL Models. The conclusions drawn based on the results and discussions of this study are as follows.

First, As a result of testing the hypothesis that the factors (TB, RB, RS, AR) of online dance education service quality will have a significant effect on university students' satisfaction, this was accepted. In other words, if the TB, RB, RS, and AR factors are increased to improve university students' satisfaction with online dance education, it means that temporary satisfaction or intention to use the corresponding education program may increase. In the current situation where COVID-19 is likely to be prolonged or other viruses may occur intermittently in the future, online dance education can be more than a temporary aid. As a result, this study has academic significance in that it presented the detailed effects of educational service quality according to the onlineization of the existing dance education field, which was absolutely pursuing offline methods.

Second, As a result of examining the hypothesis that the satisfaction of dance education service quality perceived by university students during the corona during would have a significant effect on the intention to continue participating, this was accepted. Although these results are not new discoveries, they suggest the need for various studies and techniques to increase user satisfaction along with the quality of online education services for arts and sports related fields in different fields. Considering this, various educational institutions, including each university, should conduct systematic surveys such as satisfaction surveys and usability evaluations for online dance education programs themselves separately from satisfaction surveys specialized in online education in the post COVID-19 era.

Taken together, it was confirmed that TB, RB, RS, and AR of the quality of university online dance education service had a positive effect on college students' satisfaction, and due to the nature of subjects in the field of arts and sports, at present, online dance education is not a perfect substitute, but the direction of future dance education it seems reasonable to approach it as a supplementary role necessary for setting up. On the one hand, limitations were identified in the process of this study, and follow-up studies are needed to supplement them.

First, since this study was limited to university students in Seoul region of South Korea, the problem of representativeness of the sample may be raised in expanding and generalizing the results presented in this study. Therefore, in follow-up research, expanding the sampling area and participants for comparison and analysis is necessary.

Second, in this study, the Online dance education service quality, satisfaction, and continuous intention participation variables did not extend to an analysis of the contribution according to demographic characteristic of participants (gender, grade, and curriculum information). Therefore, in follow-up study, an in-depth analysis and examination of the influence relationship according to the demographic characteristics of participants should be conducted.

Finally, in this study, TB, RB, RS, AR, SF, and CPI were set as major variables to measure the service quality of online dance education perceived by university students according to the special during of COVID-19. However, it is thought that there are various variables that can induce satisfaction and continuous participation intention of university students in online dance education. Therefore, in follow-up research, in-depth research on the participation behavior of online dance education should be conducted by applying complex variables suitable for the post COVID-19 era.

References

- [1]. UNESCO. COVID-19 education response: how many students are at risk of not returning to school? Advocacy paper. United Nations Educational, Scientific and Cultural Organization (UNESCO). 2020.
- [2]. Lee B.K. A Study on Learners' Response to Online College English Class as General Education Due to the COVID-19 Pandemic. *Korean Journal of General Education*. 2020;14(4):97-112.
- [3]. Hong S. (2021). Mediating Effects of Social Isolation on the Relationship between COVID-19 Stress and College Life Adjustment in Nursing Students. *JLCCI*. 2021;21(20):301-310.
- [4]. Zhong B. L., and Nan X. P. Overall reflections on the development of China's higher education in the post-pandemic era. *Educ. Res*. 2021;5:108-116.
- [5]. Choi J, Kwon M, and Choi E.K. A Study on the Instructor Perceptions and Satisfaction levels of Real-time Online Classes: Focusing on the case of Korean language program at D University. *Journal of Dong-ak Language and Literature*, 2020;81:135-168.
- [6]. Kim D, and Choi J. A Study on the Actual Condition and Perception of Special Education Online Learning due to COVID-19. *Korean Journal of Special Education*. 2020;55(2):85-108.
- [7]. Kim S. J., and Moon Y. Arts education in preparation for post-COVID-19: A study on Body-based Education in the Untact Era. *The Korean Journal of Dance*. 2020;78(3):87-100.
- [8]. Kim D. H. (2020). A Study on the Untact Dance Practical Classes in Universities in the COVID-19 Era. *The Korean Journal of Dance*. 2020;78(5):37-61.
- [9]. Jung S. H. and Choi H. j. A Case Study on Participation in Real-Time Contactless Traditional Korean Dance Education as a Hobby in the Post-COVID-19 Era: With a Focus on the Traditional Korean Dance Education Company "Golden CATs" jcses. 2020;18(2):297-304.
- [10]. Yoo, Y. S. Effect of Service Quality of Dance Performance Information Websites on Customers' Satisfaction and Behavioral Intentions. *Official Journal of the Koeran Society of Dance Science*. 2022;39(3):31-42.
- [11]. Lee J. S. The Influence of University Students' Taking Liberal Dance Classes on Dance Perception, Dance Perception, and Dance Education Effect. *Korean Journal of Dance*. 2020;20(4):115-123.
- [12]. Amiot C. E, Vallerand R. J, and Blanchard C. M. (2006). Passion and psychological adjustment: A test of the person-environment fit hypothesis. *Society for Personality and Social Psychology*. 2006;32(2):220-229.
- [13]. Lee H. K. The relationship between fun factors, class satisfaction and continuous participation intention of university students attending required physical education class. *Korean Society For Early Childhood Physical Education*. 2014;25(2):55-67.
- [14]. Parasuraman A, Zeithaml V. A, and Berry L. L. SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 1988;64:12-40.
- [15]. Juran M. *Quality Control Handbook*. McGraw-Hill, New York. 1974.
- [16]. Kim G. J. A Study on the Types of Online Dance Education and the Education Effects Differences. *The Korean Journal of Dance*. 2020;78(5):21-35.
- [17]. Lee Y. S. A study on the correlation of between online learning patterns and learning effects in the non-face-to-face learning environment. *Journal of the Korea Academia- Industrial Cooperation Society*. 2020;21(8), 557-562.
- [18]. Spreng A. R, and Mackoy D. R. An empirical examination of a model of perceived service quality and satisfaction. *Journal of Retailing*. 196;72:201-214.
- [19]. Zafrul Allam. Students' perception of quality in higher education: An empirical investigation. *Management Science Letters*. 2018;8(5):437-444.
- [20]. Park B. Y, and Lee J. H. College students' classes type and campus life due to the COVID-19 pandemic. *Journal of The Health Care and Life Science*. 2021;9(2):245-252.
- [21]. Piccoli G, Ahmad R, and Ives B. Web-Based Virtual Learning Environments: A Research Framework and a Preliminary Assessment of Effectiveness in Basic IT Skills Training. *MIS Quarterly*. 2001;25:401-426.
- [22]. Kim G. J, and Na Y. B. A Study on the Influence of Education Service Quality of Online Dance Education on User Satisfaction. *Journal of Digital Convergence*. 2021;19(1): 401-410.

- [23]. Małgorzata D, Polecho J, Mynarski A , and Piotr P. Enjoyment and Intensity of Physical Activity in Immersive Virtual Reality Performed on Innovative Training Devices in Compliance with Recommendations for Health. *Int J Environ Res Public Health*. 2019;16(19):3673.
- [24]. Kim, G. J. Class satisfaction survey of online dance practical lecture: comparative analysis of recording lecture & real-time lecture. *Resach of Dance Education*. 2022;33(1):165-181.
- [25]. Hwang S. J, and Lee J. S. An Empirical Study of the Effect of Lecture Service Quality on Student Satisfaction and Learning Effect: Focusing on Brady and Cronin's Service Quality Dimensions. *The Korean Society Of Management Consulting*. 2020;20(1):295-305.
- [26]. Kim M. H, and Jung M. A. Exploring learning competencies as perception, satisfaction, and learning outcomes of general education. *Korean Journal of General Education*. 2018;12(6):41-66.
- [27]. Jung I, Choi S, Lim C, and Leem J. Effects of different types of interaction on learning achievement, satisfaction and participation in web-based instruction. *Innovations in Education & Teaching International*. 2002;39(2):153-162.
- [28]. Kuo Y. C, Walker A. E, Schroder K. E, & Belland B. R. (2014). Interaction, Internet Self-Efficacy, and Self-Regulated Learning as Predictors of Student Satisfaction in Online Education Courses. *The Internet and Higher Education*, 20, 35-50.
- [29]. Bhattacharjee A, and Premkumar G. Understanding Changes in Belief and Attitude toward Information Technology Usage: A Theoretical Model and Longitudinal Test. *MIS Quarterly*. 2004;28:229-254.
- [30]. KOSIS. The number of students in university (attempt/city/county/district). https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1YL8801&conn_path=I2
- [31]. Cronin Jr J. J, and Taylor S. Measuring Service Quality: A Reexamination and Extension. *The Journal of Marketing*. 1992;56:55-68.
- [32]. Oliver R. L. A Conceptual Model of Service Quality and Service Satisfaction: Compatible Goals, Different Concepts. *Advances in Services Marketing and Management*. 1993;2:65-85.
- [33]. Shin. Transactional presence as a critical predictor of success in distance learning. *Distance Education*. 2003;24(1):69-86.
- [34]. Kim K. S. AMOS, 18.0. Structural Equation Model Analysis. Hannah: Seoul, Korea. 2008.
- [35]. Van P. J, and Van der Kloot W. A. Confirmatory analysis of exploratively obtained factor structures. *J. EPM*. 2001;61:777-792.
- [36]. Bagozzi R. P, and Dholakia U. M. Intentional social action in virtual communities. *J. Interact. Market*. 2002;16:2-21.
- [37]. Fornell C, and Larcker D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*. 1981;18:382-388.
- [38]. Kim Y. J, and Kang J. H. The Relationship between Online Education and Major Satisfaction and Exercise Continuity perceived by College Kumdo Players. *The Korean Journal of kumdo*. 2021;32(1):1-9.
- [39]. Park K. H. The influence of perceived educational service quality on students satisfaction and relationship marketing of students majoring in dance. *Korean journal of physical education*. 2009;48(6):463-473.
- [40]. Shin G. S, and Hong G. S. A Study on Each Level of Educational Service Quality on Customer's satisfaction and Loyalty: Focused on Quality of College Educational Service. *Journal of economics and business studies*. 2006;24:1-41.
- [41]. Suh Y. W. Changes in College Dance Education after the Pandemic. *The Korean Journal of Dance Studies*. 2021;84(4):81-98.
- [42]. Lee S. C, and Kim J. A. Factors that affect student satisfaction with online courses. *The Journal of Educational Administration*. 2018;36(2):115-138.
- [43]. Kuo Y. C, Walker A. E, Schroder K. E, and Belland. B. R. Interaction, internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *The Internet and Higher Education*. 2014;20:35-50.

Funding: This research received no external funding.

Institutional Review Board Statement: This research was approved by the Investigator's Center for the Institutional Review Board (approval number: GWNU IRB 2021-34).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.