pISSN: 1906 - 3296 © 2020 AU-GSB e-Journal.
eISSN: 2773 – 868x © 2021 AU-GSB e-Journal.
http://www.assumptionjournal.au.edu/index.php/AU-GSB/index

Determinants Affecting Art Major Undergraduates' Satisfaction and Continuance Intention to Use E-Learning in Chongqing, China

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Received: March 23, 2023. Revised: August 15, 2023. Accepted: August 21, 2023.

Abstract

Purpose: The pandemic has diminished in-person learning and tends to prolong the use of e-learning. This study aims to analyze the significant determinants that affect undergraduate students in art majors of their continuance intention in e-learning at Chongqing University of Arts and Sciences of China. The research framework interconnected the key variables, which included information quality, system quality, service quality, perceived usefulness, perceived ease of use, satisfaction, and continuance intention. **Research design, data, and methodology:** This quantitative research approach with 476 respondents distributed the in-person and online questionnaire to undergraduate students. To gather the quantitative data for this study, non-probability sampling approaches were employed. For quantitative analysis, the Confirmatory Factor Analysis (CFA) and Structural Equation Model (SEM) were conducted, which encompassed goodness of model fits, the associated validity and reliability evaluation. **Results:** The results show that perceived usefulness has the greatest effect on satisfaction. Information quality, system quality, service quality, perceived usefulness significantly affect satisfaction. Furthermore, satisfaction significantly affects continuance intention. All the assumptions have been substantiated to accomplish the investigation objective. **Conclusions:** Educational faculty directors at public institutions should examine the fundamental contributions to the current e-learning implementation approach to promote art major undergraduates' learning satisfaction and continuance intention.

Keywords : E-Learning, Perceived Usefulness, Perceived Ease of Use, Satisfaction, Continuance Intention

JEL Classification Code: E44, F31, F37, G15

1. Introduction

Astin (1993) identified satisfaction as the recognized value students acquire after enrolling in classes at academic institutions. Furthermore, Chang (2012) defined a continuance intention as a participant's proclivity to employ the technology after engaging in the instructional technique. It is a significant assessment indication for the instructional strategy. E-learning, frequently defined as electrical teaching or internet instruction, is a method of acquiring knowledge that involves computational techniques for connection and participation (Özüdogru, 2022). E-learning or distance classes, particularly technologically delivered demos online, contrast with standard programs proposed in a conventional instructional environment.

The e-learning perspective is assumed to be a

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development of the 1980s-era remote training system (Al-Fraihat et al., 2020; Martinez-Cerda et al., 2020; Salam & Farooq, 2020). E-learning has been demonstrated to be the primary alternative for maintaining instruction under the current worldwide lockdown triggered by the coronavirus epidemic 2019 (COVID-19). Every academic organization worldwide has committed substantial expenditures to e-learning, and numerous courses previously exclusively available in the regular teaching atmosphere have been converted. While scholarship continues to emphasize students' viewpoints, utilization of the online platform by both learners and instructors has demonstrated that it could revolutionize traditional education approaches implemented in an interesting digital ecosystem (Alhabeeb & Rowley, 2017; Maqsood et al., 2021).

This is because both lecturers and learners could engage in e-learning environments. The e-learning system (ELS) has developed to provide functions apart from education since it provides the availability of educational information without regard to time or location (Salahshouri et al., 2022). E-learning approaches and technologies are critical for student exercises and educator organizational advancement. In recent years, there has been a heightened responsibility for e-learning professionals to maintain with the more accelerated advancement of technologies. For example, they have experienced mathematics, technology programmers, internet cybersecurity specialists, and digital artists who anticipate that applying basic art big improvement could culminate in a considerable change in how contemporary educational functions.

E-learning in Northeast Asia has risen significantly since 2019, as global network infrastructures have strengthened over decades and the pandemic has diminished in-person instructional involvement. According to an iResearch Statistical Institution inquiry, the expenditure on online instruction in China has exceeded around 2.73 billion U.S. dollars, with 14.12 million members. In preparation for the COVID-19 epidemic in 2020, various traditional teaching institutions immediately redesigned their teaching technique. Approximately 52% of higher education professional organizations switched to complete online instruction (Huachuang Securities, 2021). Based on the reviewing literatures, the project is anticipated to investigate six key variables, which are information quality, system quality, service quality, perceived usefulness, perceived ease of use, satisfaction related to e-learning for undergraduates at Chongqing University of Arts and Sciences.

2. Literature Review

2.1 Inforation Quality

Information quality is an important contributor to analyzing a comprehensive interaction infrastructure based on an operative approach and comparing the constructive, comprehensive, and accurate vital information provided to respondents by the innovation architecture (Mirabolghasemi et al., 2021). Information quality refers to the percentage of accurate, comprehensive, and appropriate information, as well as the quantity that the subscribers can comprehend. It is characterized as the suitable characteristics of network activities in terms of validity, proportionality, perspicuity, uniqueness, reliability, and maintainability (Kurt, 2019). Information quality determines the proportion of participants who expect a stream of information to be timely, trustworthy, and comprehensive (Masrek & Gaskin, 2016). Information quality demonstrates that the reliability of the data has a considerable effect on the degree of satisfaction and the possibility of recurrence (Ranganathan & Ganapathy, 2002). Individuals' judgments of the quantity of assistance supplied on a webpage are information quality characteristics (Mckinney et al., 2002). Information standards are another terminology for information quality (Panigyrakis & Chatzipanagiotou, 2006). The hypothesis is as follows:
H1: Information quality has a significant effect on satisfaction.

2.2 System Quality

System quality reflects the assessment of the information acquisition function from the platform (Chen, 2010). Connections from a significant quantity of investigations and system quality represented the utilization of the evaluation for correctness, dependability, accessibility, cooperativeness, and flexibility of software application characteristics concerned with the productivity of the information processing operations (Shih, 2004). An empirical investigation indicated that system quality had an immediate and significant effect on respondent satisfaction and an undetermined consequence on system use (DeLone & McLean, 2016). It is the professional principle for information systems employed to distribute data to network clients in a resource development and intelligible structure that is anticipated to be consistent, accessible, and provided with flexible connectivity characteristics (Ritanjali et al., 2019). System quality investigates the necessary characteristics of a theoretical viewpoint in the internet framework, such as portability, availability, trustworthiness, and versatility (Cheng, 2014). The hypothesis is as follows:
H2: System quality has a significant effect on satisfaction.

2.3 Service Quality

Service quality is established as an individual's perception that the overall quality of services presented by an interaction technique is appropriate (Almarashdeh, 2016). Various characteristics for an excellent service function have been developed, emphasizing how an e-learning approach could strengthen service delivery by providing appropriate suggestions and encouragement electronically. The dependability of the technological program, the network supporting infrastructures, and the specialized advice provided to program participants were considered to evaluate service quality in this investigation (Ojo, 2017). Individuals' assessments of an e-learning system's effectiveness in information communication and extraction influence service quality (Balog, 2011). The definition of service quality was essentially the attribute of the operations supplied by network providers (Wang et al., 2007). Service quality has been changed into e-service effectiveness due to technological progress, and multiple academicians have examined the significance of this development (Al-Dweeri et al., 2019). Providing many contact strategies to assist persons in quickly overcoming disputes with communication organization and consumption is a component of service quality. The hypothesis is as follows:

H3: Service quality has a significant effect on satisfaction.

2.4 Perceived Usefulness

Davis (1989) characterized perceived usefulness as a participant's perception that implementing a specified innovation would considerably improve his capability to accomplish a mission and determine his willingness to employ it. Perceived usefulness has a considerable and significant effect on the decision to use a specialized instructional technique (Alrousan et al., 2022). Consequently, the perceived usefulness of online education system platforms increases the possibility that the internet learning methodology will be accepted. Previous research has found that students' motivation to employ e-learning services positively correlates with increased practicability (Roca & Gagne, 2008). Perceived usefulness is developed from the assumptions of appropriateness and envisaged activities; it is specified as the capability to demonstrate or prevent from completing a specified educational assignment (Hussein et al., 2021). According to Islam (2011), implementing innovative technology is not exclusively based on how they perceive the advantages. Perceived usefulness is derived from the principles of appropriateness and projected operations; it is considered the willingness to undertake or refrain from performing a specified education assignment (Hussein et al., 2021). Thus, a hypothesis is set:

H4: Perceived usefulness has a significant effect on satisfaction.

2.5 Perceived Ease of Use

Perceived usefulness reflects the degree of the system, which is considered simpler to interpret than opponents. Participants will likely recognize it from the aspect of e-learning, demonstrating an individual's cognitive competence in understanding the associated technology (Lin et al., 2011). Experts' perspectives on the usability and usefulness of online learning systems differ significantly (Masrek & Gaskin, 2016). Perceived ease of use is the degree to which a representative determines that utilizing the specific system's support would be more advantageous (Davis, 1993). According to the antecedent research achievements, perceived ease of use is utilized to establish whether technological innovation is straightforward for the overwhelming of respondents to use and to evaluate individuals' awareness of various new technology standards as they use it (Chang, 2012). The perceived ease of use is one of the most fundamental determinants in influencing an individual's behavioral intention and satisfaction (Al-Ammari & Hamad, 2008). Therefore, this study hypothesizes that:

H5: Perceived ease of use has a significant effect on satisfaction.

2.6 Satisfaction

Satisfaction is a psychological or interpretative situation that develops from a cognitive examination of the difference between accomplishment and expectations (Chang, 2012). Satisfaction significantly predicts an e-learning system's effectiveness (Almarashdeh, 2016). User satisfaction might be employed to determine how effectively an e-learning technology satisfies the expectations of its learners, which would improve their fulfillment (Mirabolghasemi et al., 2021). According to Wang et al. (2007), satisfaction with interactive education systems is a compound psychological experience of varying strength that arises following e-learning interactions. Satisfaction is utilized to characterize how individuals experience after accepting a service and evaluate how well it was presented (Hsu & Chiu, 2004). Satisfaction is a psychiatric or subjective condition that emerges from a cognitive evaluation of the difference between expected and real willingness. It is the most frequently employed indicator to assess the accuracy of electronic education environments (Islam, 2011). Hence, a hypothesis is developed:

H6: Satisfaction has a significant effect on continuance intention.

2.7 Continuance Intention

The continuance intention of an individual is the willingness to remain to sustain an electronic service making progress (Chang, 2012). It is becoming increasingly important for researchers and organizations to comprehend what stimulates individuals using technology technologies (Cheng, 2014). According to Ojo (2017), among the greatest significant factors influencing whether e-learning is improved are the characteristics of a student's use of an online program and the objective of utilization. The anticipated affirmation approach has been discovered to be trustworthy, particularly when environmental motivations are incorporated, with strong prediction efficacy for digital technologies' persistent application expectations (VanBirgelen et al., 2008). Specifically, the continuance intention has been demonstrated to be a dependable presentation, particularly when checking at environmental stimulation, and has excellent forecasting accuracy (Tan & Kim, 2015). The user's desire to continue using the e-learning system to obtain information and capabilities after implementing it is called continuance intention. It concludes that there is a significant positive correlation between the objective of user engagement and the experience of accomplishment with using E-instructional platforms (Al-Azawei et al., 2017).

3. Research Methods and Materials

3.1 Research Framework

This survey's research framework was developed according to the previous scientific research techniques. It also depended on the TAM, ECM, and ISSM models established on three previous theoretical achievements. Cheng (2014) established a relationship between satisfaction and continuance intention. Chang (2012) discovered a connection between information quality, system quality, service quality, and satisfaction. Masrek and Gaskin (2016) further established the association between perceived usefulness, ease of use, and satisfaction. Figure 1 represents the research framework for this survey.

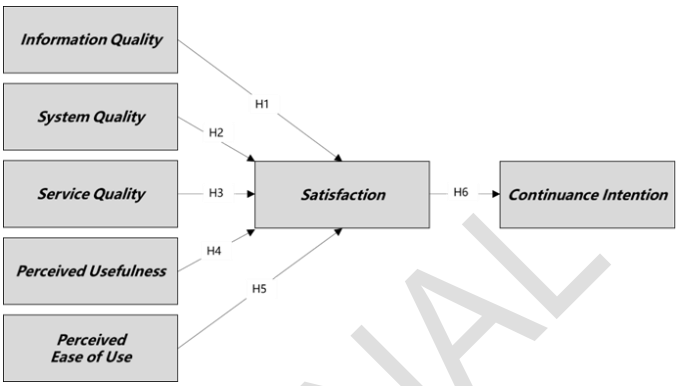

Figure 1: Conceptual Framework

H1: Information quality has a significant effect on satisfaction.
H2: System quality has a significant effect on satisfaction.
H3: Service quality has a significant effect on satisfaction.
H4: Perceived usefulness has a significant effect on satisfaction.
H5: Perceived ease of use has a significant effect on satisfaction.
H6: Satisfaction has a significant effect on continuance intention.

3.2 Research Methodology

The researchers employed a non-probability sampling methodology and conducted the quantitative in-person interview with undergraduate art majors from Chongqing University of Arts and Sciences who had undertaken e-learning for the estimation. Moreover, the interpretive data were combined and analyzed to determine the critical features that significantly affected the interviewees' long-term continuance intention to employ the e-learning approach. The examination was segregated into three components: screening questions, demographic information, and evaluation of each observed factor which was evaluated by a five-point Likert scale.

Four specialists with a Ph.D. and sufficient competence in the e-learning field were invited to accomplish the item-objective congruence (IOC) for the content validity examination to evaluate the appropriateness of the investigative instrument of this study. Moreover, the pilot exam with 40 samples to determine the internal consistency reliability according to Cronbach's Alpha points.

The paper-based questionnaires were delivered to 500 undergraduate students from the target university after the procedures of the content validity and internal consistency reliability assessments. The researchers utilized JAMOVI and AMOS to examine the attitude test data. Furthermore, confirmatory factor analysis (CFA) was utilized to evaluate construct validity, accompanied by the structural equation model (SEM) to examine the hypotheses of the interactions among the interrelated latent variables.

3.3 Population and Sample Size

The target population was all art major undergraduate students from Chongqing University of Arts and Sciences of China. According to Israel (1992), the minimal sample size for the sophisticated research framework in the structural equation model is 200 to 500 participants. After the screening, limiting, and non-probability sampling, 500 samples were chosen as the ultimate samples from the 1,285 participants for this empirical study.

3.4 Sampling Technique

Additionally, 500 respondents were chosen as the final sample using quota sampling. Table 1 demonstrates the sampling units and the corresponding sub-sample size:

Table 1: Sample Units and Sample Size

Target middle school	Population Size	Sample Size
Freshmen	313	122
Sophomores	325	126
Juniors	320	125
Seniors	327	127
Total	**1285**	**500**

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

After summarizing the accumulated data and removing the 24 invalid entries, 476 legitimate entries were obtained. Table 2 presents the demographic profile detail information for 476 respondents. Male respondents composed 31.72 percent of the total, while female participants made up 68.28 percent of the total. 24.16 percent were first-year students, 24.52 percent were sophomores, 28.99 percent were juniors, and 22.33 percent were seniors. Eventually, 27.73 percent of undergraduates majored in environment design, 18.70 percent in visual communication design, 21.21 percent in animation, 19.33 percent in art theory, and 13.03 percent in costume design.

Table 2: Demographic Profile

Demographic and General Data (N=476)		Frequency	Percentage
Gender	Male	151	31.72%
	Female	325	68.28%
Academic Year	Freshman	115	24.16%
	Sophomore	102	24.52%
	Junior	138	28.99%
	Senior	121	22.33%
Major Direction	Environment Design	132	27.73%
	Visual Communication Design	89	18.70%
	Animation	101	21.21%
	Art Theory	92	19.33%
	Costume Design	62	13.03%

4.2 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was conducted in this investigation to determine whether the number of components and loadings on the observed variables corresponded to what was anticipated based on the assumptions or approximations (Allen et al., 2009). The findings for each scale item's factor loading and allowable characteristics demonstrated the empirical structure's goodness of fit (Hair et al., 2010). Based on the quantitative assessment results in Table 3, Cronbach's Alpha value for three latent variables was over 0.90, and the rest of the 4 were over 0.80. While the entire value of the factor loadings and Average variance Extracted (AVE) were both greater than 0.50, the Composite Reliability (CR) was both greater than 0.70 (Hair et al., 2007).

Table 3: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Information Quality (IQ)	Chang (2012)	6	0.917	0.725 – 0.826	0.914	0.640
System Quality (SYQ)	Chang (2012)	3	0.870	0.782 – 0.871	0.872	0.696
Service Quality (SEQ)	Chang (2012)	3	0.832	0.768 – 0.816	0.832	0.623
Perceived Usefulness (PU)	Nagy (2018)	3	0.926	0.804 – 0.954	0.929	0.814
Perceived Ease of Use (PEOU)	Nagy (2018)	3	0.828	0.593 – 0.916	0.844	0.650
Satisfaction (SAT)	Chang (2012)	3	0.900	0.754 – 0.907	0.860	0.673
Continuance Intention (COI)	Chang (2012)	3	0.863	0.650 – 0.942	0.871	0.697

Seven categories of goodness-of-fit indicators were conducted to examine the procedure of the CFA, which was summarized in Table 4. The entire evaluations for the goodness of fits were acceptable due to this empirical survey's CFA evaluation.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values Adjustment
CMIN/DF	<3.00 (Hair et al., 2010)	1.794
GFI	>0.90 (Bagozzi & Yi, 1988)	0.935
AGFI	>0.80 (Filippini et al., 1998)	0.914
NFI	>0.90 (Hair et al., 2010)	0.970
CFI	>0.90 (Marsh & Hocevar, 1985)	0.975
TLI	>0.90 (Bentler & Bonett, 1980)	0.946
RMSEA	< 0.05 (Hu & Bentler, 1999)	0.041

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index and RMSEA = Root mean square error of approximation

For the discriminant validity, the diagonal points defined the AVE square roots of the variables. All coefficients associating any two constructs were lower than 0.80, according to the findings of discriminant validation, which are indicated in Table 5. This investigation verified that the utilization of statistical evaluations to assess discriminant validity was established.

Table 5: Discriminant Validity

	IQ	SYQ	SEQ	PU	PEOU	SAT	COI
IQ	**0.800**						
SYQ	0.077	**0.834**					
SEQ	0.069	0.219	**0.789**				
PU	0.202	0.215	0.141	**0.902**			
PEOU	0.153	0.039	0.178	0.161	**0.806**		
SAT	0.238	0.269	0.199	0.404	0.238	**0.820**	
COI	0.005	0.143	0.079	0.209	0.142	0.152	**0.835**

Note: The diagonally listed value is the AVE square roots of the variables
Source: Created by the author.

4.3 Structural Equation Model (SEM)

The structural equation model (SEM) evaluation was performed in conformity with the research objectives for the CFA assessment. The SEM evaluation is employed to examine whether a specific procedure of linear equation satisfies the specified regression framework. Furthermore, in the standardized techniques, SEM investigates the causal connection between each variable, including assessment inconsistencies or trustworthiness in the accompanied coefficient (Hair et al., 2007). While AMOS version 24 was used to analyze the data, the corrected values of CMIN/DF, GFI, AGFI, CFI, NFI, TLI, and RMSEA all achieved the acceptable threshold of the appropriate qualities, which are demonstrated in Table 6. Consequently, the SEM's goodness of fit was established.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable	Statistical Values Adjustment
CMIN/DF	<3.00 (Hair et al., 2010)	2.139
GFI	>0.90 (Bagozzi & Yi, 1988)	0.917
AGFI	>0.80 (Filippini et al., 1998)	0.898
NFI	>0.90 (Hair et al., 2010)	0.957
CFI	>0.90 (Marsh & Hocevar, 1985)	0.962
TLI	>0.90 (Bentler & Bonett, 1980)	0.932
RMSEA	< 0.05 (Hu & Bentler, 1999)	0.049

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index and RMSEA = Root mean square error of approximation

4.4 Research Hypothesis Testing Result

According to the assessed findings in Table 7, satisfaction generated a significant consequence on continuance intention, with the standardized path coefficient (β) threshold at 0.199 (t-value at 3.819***). Furthermore, all of the five independent variables which influenced satisfaction, information quality generated the strongest significant effect on satisfaction which β at 0.181 (t-value 3.729***), followed by system quality the β at 0.223 (t-value 4.486***), service quality the β at 0.129 (t-value 2.258*), perceived usefulness the β at 0.387 (t-value 6.822***), and perceived ease of use the β at 0.136 (t-value 2.794**).

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: IQ → SAT	0.181	3.729***	Supported
H2: SQ→ SAT	0.223	4.486***	Supported
H3: SEQ → SAT	0.129	2.588*	Supported
H4: PU → SAT	0.387	6.822***	Supported
H5: PEOU → SAT	0.136	2.794**	Supported
H6: SAT→ COI	0.199	3.819***	Supported

Note: *** p<0.001, ** p<0.01, * p<0.05
Source: Created by the author

According to the observations in Table 7, the accompanying findings have been proposed: With a standardized path coefficient (β) level of 0.181 in this structural approach, **H1** has demonstrated that information quality is a significant determinant of satisfaction. According to current research in digital learning, information quality is a considerable factor in student satisfaction with e-learning (Napitupulu & Patria, 2013).

The research outcomes for **H2** demonstrated that system quality is one of the primary predictors of satisfaction, with the second strongest influence effect in this exploration, with the standardized path coefficient degree of 0.223. In a characterization of ISSM implementation scenarios, system quality was demonstrated to be a substantial determinant of user satisfaction (Masrek & Gaskin, 2016).

With a standardized coefficient value of 0.129, the **H3** observational statistical findings supported the hypothesis of a significant impact from service quality to satisfaction. Recent analysis has indicated that the characteristics that individuals' satisfaction with e-learning was affected by service quality; compared with information quality and system quality, service quality was extremely significant (Chang, 2012).

Additionally, the **H4** assessment finding showed that perceived usefulness considerably influenced satisfaction, with the standard path coefficient estimated at 0.387, the strongest impact effect in this analysis. According to Limayem and Cheung (2008), perceived usefulness significantly impacts first-year management students' satisfaction with the online learning system.

Correspondingly, **H5** indicated that perceived ease of use is a significant component of satisfaction in this study, with a standard path coefficient of 0.136. According to Limayem and Cheung (2008), perceived ease of use has a considerable consequence on target students' satisfaction and willingness to keep using blackboard innovation in online learning.

Subsequently, For **H6**, it was demonstrated that satisfaction significantly influenced continuance intention, culminating in a standard path coefficient of 0.199. The antecedent investigation has indicated that participant satisfaction determines whether to employ the e-learning technique (Ismail et al., 2012).

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This journal article aimed to determine the significant influence on the continuance intention of art major undergraduate students at Chongqing University of Arts and Sciences of China. The research framework generated six hypotheses for evaluating the key determinant involving information quality, system quality, service quality, perceived usefulness, perceived ease of use, and satisfaction. The scale items were developed and disseminated to 500 target students with sufficient e-learning competence, yielding 476 valid data was selected. CFA was performed to execute quantitative estimations to evaluate the validity and reliability of the data-research framework interaction. Additionally, the SEM was used to confirm the primary determinants that affect the components related to continuance intention. The overall hypotheses were supported in this quantitative research.

According to the outcomes of this investigation, the mediator variable satisfaction had a significant direct effect on continuance intention. Additionally, among the independent variables which affect satisfaction, perceived ease of use had the highest effect, followed by information quality as the second most powerful predictor of satisfaction, and perceived usefulness, service quality, and system quality correspondingly.

5.2 Recommendation

The academic affairs office of public universities and the educational administration department of secondary colleges may respond to the following practice recommendations to strengthen the continuous intention of art major undergraduates in public universities toward the potential implementation of e-learning:

According to the outcome of this study, satisfaction had a significant impact on continuing intention, and satisfaction was affected by every independent variable.

Initially, among the other five independent variables, respondents consider that information quality is a powerful component affecting satisfaction. Consequently, instructional organizations should contemplate offering specialized understanding content in the digital education platform that exceeds the capabilities of course hours. A massive range of software courses could be presented to students based on the professional software used in art design, guaranteeing that scholars can get sufficient specialist expertise and information.

Additionally, regarding system quality, a reliable education administration system is essential to effective e-learning deployment. Consequently, instructional organizations should gather all the students' disruptions and system deficiencies in the education managing platform and send them to the technical assistance employees of the software backdrop in a timely approach to ensure that the electronic learning system is stable.

Moreover, for service quality, the instructional department shall provide equivalent technical service assistance for students' challenges with the functioning of the online learning management system. The academies may establish the specific operation instructor or supply the related thorough operation service tutorial. Simultaneously, make full use of the qualities of an online teaching platform to give students comparatively effective learning service and management.

Meantime, when it arrives to perceived ease of use, a large percentage of students presume that if the management system of online instruction is not too challenging or if the complexity of the existing art courses can be limited through e-learning, it will have the optimistic influence on learning satisfaction and retainment. As a result, in the future, the instructing division would examine the course design for online art major instruction to guarantee that course complexity is decreased. Consequently, depending on perceived usefulness, educational developers should

consider how to generate successful learning outcomes through digital training, increasing students' satisfaction and perseverance with e-learning. Instructors can use screen recording to capture the technical functioning of some complex art design software, such as 3ds Max or Autodesk Maya, so that students can view it again to guarantee precise comprehension, ensuring that learners can successfully understand the suitable teaching objectives.

5.3 Limitation and Further Study

For practicality, the demographic and selection were limited to one public university in Chongqing, China, and approximately seven latent variables were evaluated in the research framework. The following examination could be divided into two perspectives: expanding the investigation of respondents into new Chinese provinces. Moreover, additional innovation acceptance theories, such as ECM, TRA, and UTAUT, could be examined to enhance the quantitative research frameworks further.

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