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Factors Influencing Chinese Vocational College Students' Satisfaction with Learning Management Platform

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Abstract

Background and Aim: In the rapidly evolving landscape of education, online learning platforms, such as the Chaoxing Learning Platform, have gained substantial attention. Recognizing the pivotal role of student satisfaction in the effectiveness of these platforms, this study aims to investigate the factors influencing college students' satisfaction specifically within the context of Beihai Vocational College.

Materials and Methods: This study employed a purposive sampling method, selecting 150 respondents from Beihai Vocational College who met the research objectives to ensure the representativeness and credibility of the survey results. Quantitative research methods were applied, utilizing measurement tools in various aspects, including system quality, information quality, interaction, perceived usefulness, and student satisfaction. Results of Cronbach's Alpha of the research instruments show that the alpha coefficient of information quality and interaction is within the range of 0.8 to <0.9， and the alpha coefficient of system quality, perceived usefulness, and student satisfaction is within the range of 0.9. The level of Cronbach's alpha in the variables is within very good to excellent level. This indicated the acceptable level of internal consistency of the research instrument, which confirmed the reliability of the research instrument. Ultimately, methods such as descriptive statistics and multivariate regression analysis were used to conduct in-depth data analysis, aiming to comprehensively understand the impact of the Chaoxing learning platform on student satisfaction.

Results: The results of the study showed that the independent variables system quality (β = 0.1465, P = 0.287), information quality (β = 0.3602, P = 0.016), and perceived usefulness (β = 0.5478, P = 0.005) were significantly positively correlated. In addition, the test also found that interaction (β = -0.0430, P = 0.084) did not have a significant effect on students' satisfaction with the Chaoxing Learning Platform at Beihai Vocational College.

Conclusion: The results of the study indicate that most of the students of Beihai Vocational College are satisfied with using the Chaoxing Learning Platform for learning, and students can learn, communicate, and collaborate well through this platform, which provides satisfactory learning results.

Keywords: Learning Management Platform; Students' Satisfaction; Vocational College

Introduction

The landscape of higher education has witnessed a transformative shift with the widespread integration of Learning Management Systems (LMSs), which play a pivotal role in shaping the educational experience of college students (Aldiab et al., 2019; Benta et al., 2014; Gamage et al., 2022). As educational institutions embrace digital platforms, understanding the factors that influence students' satisfaction with specific LMSs becomes crucial for enhancing the overall learning environment. This study explores the case of Beihai Vocational College and investigates the factors influencing college students' satisfaction with the Chaoxing Learning Platform.

The adoption of e-learning platforms has become imperative, especially in the context of the global COVID-19 pandemic, where technology-mediated education has experienced unprecedented significance (Ebadi et al., 2020; Irfan et al., 2020). Chaoxing Learning Platform, a prominent player in the realm of LMSs, provides a diverse array of features and tools designed to facilitate student learning and engagement. Understanding the dynamics that contribute to students' satisfaction with this platform holds substantial implications for educational institutions seeking to optimize the effectiveness of their digital learning environments.

Previous research has highlighted various dimensions that impact users' acceptance and satisfaction with LMSs, including system quality, perceived usefulness, and the overall quality of the learning experience (Haddad, 2018; Ohliati & Abbas, 2019; Ozkan & Koseler, 2009). Furthermore, the unique challenges posed by the pandemic have underscored the importance of e-learning in maintaining

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educational continuity, making it imperative to explore user satisfaction within this evolving educational landscape (Irfan et al., 2020; Koh & Kan, 2020).

Building upon prior research, this study seeks to unravel the fundamental factors influencing college students' satisfaction with the Chaoxing Learning Platform, focusing specifically on the context of Beihai Vocational College. The primary objective is to examine the determinants that shape students' contentment with this digital learning environment. Employing a quantitative approach, the study utilizes a questionnaire as its principal data collection tool, aiming to garner insights from the student population at Beihai Vocational College.

Key factors, including "System Quality" (SQ), "Information Quality" (IQ), "Interaction" (IT), and "Perceived Usefulness" (PU), will be central to the investigation. The purpose of this examination is to assess the extent to which these variables impact the satisfaction levels of college students at Beihai Vocational College regarding their experiences with the Chaoxing Learning Platform. Through a systematic analysis, this study aims to contribute valuable insights that can inform educational practitioners and administrators in optimizing the quality of digital learning environments within the specific context of Beihai Vocational College.

Objectives of Research

To examine the factors influencing students' satisfaction with the Chaoxing Learning Platform at Beihai Vocational College.

1. By focusing on key variables such as system quality, information quality, interaction, and perceived usefulness, the study seeks to unravel the nuanced dynamics that contribute to or hinder students' contentment.

2. Through rigorous data collection via questionnaires and advanced statistical analyses, the research aims to provide actionable insights for both educators and the Chaoxing Learning Platform developers, fostering an environment that optimally supports student learning and satisfaction.

Literature review

Chaoxing Learning Platform

The platform is a widely used learning system that provides students with a rich and colorful learning experience. The platform incorporates a wide range of features including personalized learning paths, interactive learning tools, flexible study slots, and multimedia learning resources. Through an intelligent recommendation system, it can tailor personalized learning experiences to individual student's learning styles and interests to improve learning efficiency. Interactive learning tools such as online discussions, group projects, and communication among students (Datta Barua et al., 2015). The platform's flexible study slots allow students to schedule their studies at any location, while multimedia learning resources including video lectures and interactive simulations provide more vivid and enriched learning content. To adapt to individual learning preferences, the Chaoxing Learning Platform creates a convenient and diversified online learning environment for a wide range of students.

System Quality

Refers to students' evaluation of the technical performance and functionality of the Chaoxing Learning Platform. This variable can assess the impact of platform reliability, speed, and usability on student satisfaction (Koh & Kan, 2020).

Collective insights from past research and academic discourse unveil multifaceted perspectives on 'system quality' within the realm of Learning Management Systems (LMS), providing valuable insights for educators and institutions alike. Mukhametshin et al. (2019) offer a glimpse into the potential of LMS platforms like Moodle in contemporary education, emphasizing their role in facilitating distance learning initiatives. Their study highlights the significance of user-friendly platforms to effectively disseminate knowledge. Similarly, Nakamura et al. (2019) delve into User Experience (UX) evaluation methodologies, emphasizing the pivotal role of an intuitive LMS interface in elevating user satisfaction and engagement.

Information Quality

Represents students' evaluation of the learning content and resources provided by the Chaoxing Learning Platform. This variable can measure the influence of the accuracy, completeness, and comprehensibility of instructional materials on student satisfaction (Joyce & Rebecca, 2020).

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Sarker et al. (2019) contributed by critically assessing the viability of effective eLearning implementation through learning management systems (LMS) in Bangladesh's tertiary educational landscape. Their exploration of both student and teacher experiences with these platforms' sheds light on the nuanced dynamics surrounding information dissemination and accessibility. A similar theme is echoed by Rahman et al. (2019), who delve into students' perspectives regarding LMS benefits, emphasizing the role of information quality in influencing educational outcomes.

Interaction

Reflects students' evaluation of the social and collaborative features of the Chaoxing Learning Platform. This variable can assess the impact of student-teacher and peer interactions, information exchange, and collaborative learning on student satisfaction (Joyce & Rebecca, 2020).

Dias et al. (2020) take a technological leap by employing Deep Learning techniques to forecast the quality of interaction (QoI) with LMS, potentially revolutionizing the way educators gauge learner engagement. This innovation prompts contemplation on how predictive modeling aligns with the multifaceted nature of student interaction. In the realm of mobile platforms, Du et al. (2013) proposed an integrated approach, melding LMS with social software for enhanced interaction and collaboration. This integration strategy encourages consideration of how pedagogical goals harmonize with social features.

Perceived Usefulness

As per Davis et al.'s (1989) delineation, PU expresses a person's belief that using a specific instrument will significantly improve their productivity and overall performance. This notion extends beyond the scope of specific tools. Building on this, Cigdem and Ozturk (2016) emphasize that employing certain strategies can fortify task achievement in collaborative composition endeavors. Davis (1989) further underscores that PU signifies the extent to which individuals hold the conviction that technology employment can augment their overall efficiency. Moreover, previous research hypotheses indicate that users are motivated to adopt information technology due to two factors: intrinsic motivation and extrinsic motivation, with PU serving as the extrinsic incentive for information technology utilization (Davis et al., 1992).

According to the perceived ability to increase user productivity. It also plays a key role in determining how much people want to use technology (Cigdem et al., 2014). Numerous studies have focused on the influence of perceived usefulness on attitudes and perceptions (Celik, 2013; Cheng et al., 2006; Chiou & Shen, 2012).

Student Satisfaction

Refers to students' satisfaction with the Chaoxing Learning Platform. This variable can comprehensively evaluate the combined impact of system quality, information quality, interaction quality, and instructional quality on student satisfaction (Joyce & Rebecca, 2020).

Hongxing et al. (2021) embark on an exploration of student satisfaction in the context of blended teaching within an online vocal music course. The involvement of 51 college students offers a glimpse into the dynamic realm of creative courses, prompting considerations about the intersection of pedagogical approaches and student contentment.

Conceptual Framework

The conceptual framework adopted for this study is a meticulously crafted structure that draws on a synthesis of existing literature and theoretical foundations in the realm of Learning Management Systems (LMS). Informed by seminal works such as Al Habsyi et al. (2021), it delves into the transformative role of LMS in contemporary higher education, highlighting their capacity to reshape pedagogical approaches through seamless access to educational resources and interactive learning experiences. Additionally, the framework extends its reach to incorporate studies specific to the Chaoxing Learning Platform, recognizing its unique position as a groundbreaking paradigm in the landscape of online education. By focusing on key variables such as system quality, information quality, interaction, and perceived usefulness, the conceptual framework establishes a comprehensive structure that not only synthesizes diverse research paradigms but also paves the way for a nuanced exploration of student satisfaction in the context of Beihai Vocational College.

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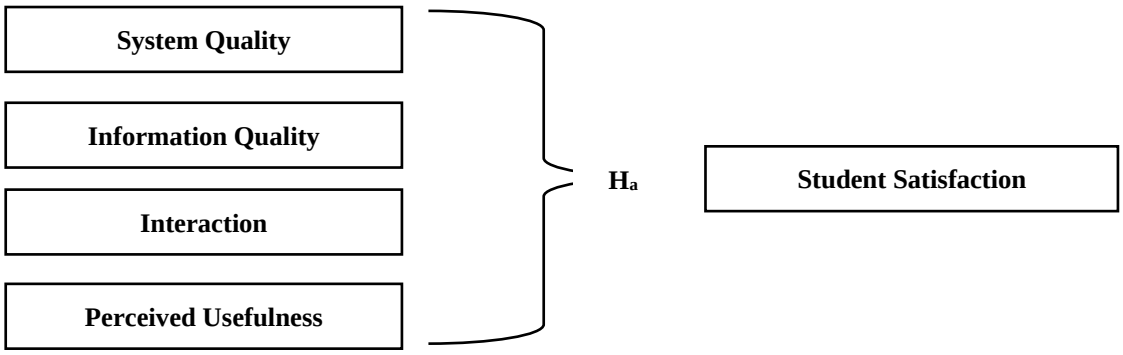

Figure 1 Conceptual Framework

Hypothesis and theoretical model

Research Design

This study aimed to investigate the factors influencing Beihai Vocational College students' satisfaction with the Chaoxing Learning Platform. The study uses a quantitative research approach, collects data using questionnaires, and uses descriptive and inferential analyses to analyze data. Based on the literature review, this study covers four independent variables: system quality, information quality, interaction, and perceived usefulness, and one dependent variable, student satisfaction with the Chaoxing Learning Platform. Questionnaire questions were adopted from previous studies. The study was conducted on 150 students from a public university in Beihai, China. A census sampling strategy has been used to recruit the samples.

Hypotheses

This study focuses on four latent variables: system quality, information quality, interaction, and perceived usefulness. These variables encompass critical aspects of student interaction and satisfaction within the Chaoxing Learning Platform. By delving into how system quality, information quality, interaction, and perceived usefulness impact student satisfaction, substantial recommendations for the improvement of this platform are provided. The research employs a quantitative survey approach, integrating key variables to validate hypotheses regarding student satisfaction. Based on the conceptual framework, explicit hypotheses have been formulated, establishing a clear direction and foundation for testing the relationships between system quality, information quality, interaction, perceived usefulness, and student satisfaction:

H1: System quality significantly influences student satisfaction.
H2: Information quality significantly influences student satisfaction.
H3: Interaction significantly influences student satisfaction.
H4: Attitude towards using blended learning influences the students' behavioral intention.
H5: Perceived usefulness significantly influences student satisfaction.

Methodology

This study employs a quantitative research approach to comprehensively investigate the impact of the Chaoxing Learning Platform on student satisfaction at Beihai Vocational College. The research focuses on key variables, namely system quality, information quality, interaction, and perceived usefulness. The study involves surveying students at Beihai Vocational College to gather substantial numerical data.

Research Instrument

This study employs a questionnaire as the primary research instrument to obtain objective feedback on student satisfaction and key variables. The questionnaire will be divided into several sections, including basic information, assessment of system quality, assessment of information quality, assessment of interaction, assessment of perceived usefulness, and overall satisfaction. A 5-point Likert Scale will be used, where students will indicate their agreement with each statement related to the variables on a scale ranging from "strongly disagree" to "strongly agree." This assessment method will provide quantitative data for statistical analysis. Through the questionnaire survey, the research aims to

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capture students' perceptions and satisfaction with various aspects of the Chaoxing Learning Platform. The structure and design of the questionnaire are intended to accurately capture students' opinions, providing a reliable data foundation for subsequent statistical analysis.

Validation of the Research Instrument

The validation process of the research instruments, through scrutiny and evaluation by expert assessors, ensured that the design of the research tools adhered to professional standards and aligned with the research objectives. Valuable feedback was provided by the expert assessors. Clearly defining the objectives of the assessment was a crucial step in the validation process to ensure that the tools effectively met the needs of the study.

During the Initial to overall concept (IOC) testing phase, an initial validation was conducted to assess the degree of correlation between various measurement indicators in the research instruments and the overall conceptual framework. Preliminary results indicated that each measurement item was consistent with the research objectives, aligning with theoretical expectations. A comprehensive assessment of the internal consistency of the research tools was conducted using Cronbach's Alpha statistical method. The results revealed Cronbach's Alpha values of 0.802 for System Quality, 0.884 for Information Quality, 0.944 for Interaction, 0.936 for Perceived Usefulness, and 0.908 for Student Satisfaction. The level of Cronbach's alpha in the variables is within very good to excellent level. Thus, this indicated the acceptable level of internal consistency of the research instrument, which confirms the reliability of the research instrument.

Therefore, through expert assessment, IOC testing, and internal consistency evaluation, the entire validation process ensured that the research tools were both theoretically and statistically effective and reliable. This provides a trustworthy foundation for subsequent data collection and analysis.

Population and Sample Size

The sample consisted of 150 second-year specialist students at Beihai Vocational College in China. All of whom were taking courses through the Chaoxing learning platform. This group is representative of the college's student population in their second year and provided the study with insights into the students' learning experiences on the Chaoxing learning platform.

Sampling Methodology

The study employed purposive sampling to select participants who met the research objectives. A total of 150 respondents were chosen from Beihai Vocational College to ensure the representativeness and credibility of the survey results. This sampling method allows for a targeted selection of participants based on specific criteria relevant to the research objectives.

Data Collection and Statistical Progress

Questionnaire Design and Translation

A research questionnaire was employed to ensure its validity and reliability, building upon previous surveys. Since the questionnaire was originally in English and the target population was Chinese, two experts reviewed and translated the questionnaire into Chinese to ensure linguistic accuracy.

Utilization of Questionnaire Star Platform

The finalized questionnaire items were incorporated into the Questionnaire Star platform. Participants were assured of the anonymity of their responses and informed that the collected data would be used solely for academic research purposes. The sample consisted of 150 second-year students at Beihai Vocational College in China. The survey was conducted within a course utilizing Study Pass, and respondents accessed and completed the questionnaire by scanning the WeChat QR code, ensuring a convenient and efficient data collection process.

Data Analysis

All collected data were downloaded, and a rigorous analysis was conducted using JAMOVI software. The analysis aimed to derive meaningful findings and conclusions for the study. This systematic approach aimed to ensure the accuracy and integrity of the collected and analyzed data.
Through these steps, the study employed a comprehensive approach, from questionnaire design and translation to data collection and analysis, ensuring the scientific rigor and credibility of the entire research process.

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Results

Internal Consistency Reliability (Cronbach's Alpha)

Cronbach's Alpha is often used in science education research to assess the internal consistency of a research instrument (e.g., a questionnaire), which is the degree of correlation or consistency between the items in a scale that allows researchers to assess the reliability and validity of the scale (Taber, 2018). Cronbach's alpha value ranges from 0 to 1 (Tavakol & Dennick, 2011), and if Cronbach's alpha value is > 0.7, the scale is confirmed reliable at the moderate level, according to Hair et al. (2010).

Table 1 The Cronbach's alpha level and strength of association based on Hair et al. (2010)

Alpha Coefficient Range	Strength of Association
< 0.6	Poor
0.6 to < 0.7	Moderate
0.7 to < 0.8	Good
0.8 to < 0.9	Very good
≥ 0.9	Excellent

Table 2 Results of Cronbach's Alpha of the research instruments

Variable	Number of Items	Cronbach's Alpha	Interpretation
System quality	4	0.802	Excellent
Information quality	4	0.884	Very Good
Interaction	4	0.944	Very Good
Perceived usefulness	3	0.936	Excellent
Student Satisfaction	3	0.908	Excellent

The level of Cronbach's alpha in the variables is within very good to excellent level. Thus, this indicated the acceptable level of internal consistency of the research instrument, which confirms the reliability of the research instrument.

Demographic Information

The demographic information of the sampled participants is summarized in Table 3. The age distribution reveals that 3.4% of participants are under 18 years old, while the majority, comprising 96.6%, are above 18 years old, resulting in a total of 150 participants. This breakdown provides insights into the age distribution of the sample, which will be valuable in the subsequent analysis of the research findings.

Table 3 Demographic Information of Samples

Variable	Category	Frequency	Percentage
Age	Under 18 years	5	3.4%
	Above 18 years	145	96.6%
Total		150	100%

Descriptive Statistics of Variables

In this section, the descriptive statistics for all the variables included in the study have been analyzed by applying mean and standard deviation.

Arbitrary Level of Questionnaire

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In the study, the 5-Level Likert Scale questionnaire (Agreement) has been employed to collect samples' attitudes toward each variable measured. To interpret the data obtained, the arbitrary level as shown in Table 4 has been utilized to interpret the mean value of each variable.

Table 4 Arbitrary Level for Interpretation of the Mean Value

Arbitrary Level	Interpretation
1.00 - 1.79	Strongly Disagree
1.80 - 2.59	Disagree
2.60 - 3.39	Neutral
3.40 - 4.19	Agree
4.20 - 5.00	Strongly Agree

(Pimentel, 2010)

Descriptive Statistics of System Quality

Table 5 shows the statistical data analysis of System Quality. The descriptive analysis of the system quality component of the questionnaire indicates participants' positive perceptions of various aspects of the Chaoxing Learning Platform. Specifically, participants generally agreed that fonts on the screen are easy to read with a mean of 4.11, and that they can easily find needed information on the platform with an average value of 4.11.

Additionally, participants reported infrequent encounters with system errors with a mean of 3.44. Moreover, participants strongly agreed that content is easily accessible across devices with a mean of 4.15. The overall mean score of 3.95 suggests an overall positive sentiment regarding system quality. These findings underscore participants' favorable evaluations of the platform's user interface, information accessibility, and content availability.

Table 5 Descriptive Statistics of System Quality

	Item Statement	Mean	SD	Interpretation
1	Fonts (style, color, saturation) are easy to read on the screen.	4.11	.801	Agree
2	I can easily find the information I need on this system.	4.11	.698	Agree
3	I have not encountered system errors in this system.	3.44	.892	Agree
4	I can easily access this content from any device (tablet, laptop, iOS, Android).	4.15	.662	Agree
	Total	3.95	.609	Agree

Descriptive Statistics of Interaction Quality

Table 6 shows the statistical data analysis of interaction quality. The descriptive analysis of the interaction quality dimension provides insights into participants' perceptions of their interactions with the Chaoxing Learning Platform. Participants demonstrated strong agreement with statements related to software usability and ease of use. Specifically, participants found it easy to use the software with a mean of 4.26, and reported that becoming familiar with the software did not require much time with a mean of 4.33. They also strongly agreed that the software was user-friendly from the outset with a mean of 4.22. Additionally, participants indicated agreement that the guidelines provided were designed in an easy-to-understand manner with a mean of 4.11. The overall mean score of 4.23 suggests a prevailing sentiment of strong agreement regarding interaction quality. These findings underscore participants' positive evaluations of the platform's user-friendliness, ease of use, and comprehensible guidelines.

Table 6 Descriptive Statistics of Interaction Quality

	Item Statement	**Mean**	**SD**	**Interpretation**
5	I find it easy to use the software.	4.26	.656	Strongly Agree

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	Item Statement	Mean	SD	Interpretation
6	It does not take much time to become familiar with the software.	4.33	.555	Strongly Agree
7	The software was easy to use the first time.	4.22	.698	Strongly Agree
8	All guidelines are designed in an easy-to-understand structure.	4.11	.801	Agree
	Total	4.23	.58	Strongly Agree

Descriptive Statistics of Interaction

Table 7 shows the statistical data analysis of the Statistics of interaction, shedding light on participants' perceptions of their interactions with the Chaoxing Learning Platform. The results indicate that participants overwhelmingly expressed strong agreement with the ease of using the software for the first time with a mean of 4.30 and the rapidity with which they became familiar with it with a mean of 4.19. Similarly, participants strongly agreed with the statement that they could easily use the software upon their initial interaction with a mean of 4.33. Regarding the clarity of guidelines, participants indicated agreement that all guidelines were designed in an easy-to-understand structure with a mean of 4.11. The combined mean score of 4.23 reinforces the prevalent sentiment of strong agreement across the interaction dimension. This indicates participants' positive evaluations of the software's initial usability, the ease with which they familiarized themselves with it, and the user-friendly design of instructional guidelines.

Table 7 Descriptive Statistics of Interaction

	Item Statement	Mean	SD	Interpretation
9	I could easily use this software for the first time.	4.30	.669	Strongly Agree
10	It takes me not too much time to get familiar software.	4.19	.736	Agree
11	I could easily use this software for the first time.	4.33	.555	Strongly Agree
12	All guidelines are designed in an easy-to-understand structure.	4.11	.751	Agree
	Total	4.23	.631	Strongly Agree

Descriptive Statistics of Perceived Usefulness

Table 8 shows the statistical data analysis of Statistics of Perceived Usefulness. The results reveal that participants generally agreed that the software is useful for their studying with a mean of 4.15. Furthermore, participants strongly agreed that the software facilitates easy access to school announcements with a mean of 4.41, and they also agreed that the software effectively assists them in exam revision with a mean of 4.22. The cumulative mean score of 4.2 suggests an overall agreement among participants in recognizing the software's utility for their educational needs. This indicates a positive perception of the platform's contribution to their studying, accessibility to important announcements, and assistance in exam preparation.

Table 8 Descriptive Statistics of Perceived Usefulness

	Item Statement	Mean	SD	Interpretation
13	This software is really useful for my studies.	4.15	.770	Agree
14	This software helps me to easily get an approach to school announcements.	4.41	.636	Strongly Agree
15	This software effectively assists me in exam revision.	4.22	.698	Strongly Agree
	Total	4.2	.662	Strongly Agree

Descriptive Statistics of Students' Satisfaction

In Table 9, the descriptive statistics provide insights into participants' satisfaction with the Chaoxing Learning Platform. The results indicate that participants agreed that the platform's materials

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were more interesting compared to other materials they have used as part of a course with a mean of 4.11. Additionally, participants agreed that learning through a mobile device improved their experience in topics related to onboard safety and security and personality development with a mean of 4.04, and they also agreed that learning through a mobile device facilitated quicker and easier comprehension of lessons with a mean of 4.07. The cumulative mean score of 4.2 suggests a strong agreement among participants, indicating a high level of satisfaction with the platform's content and its effectiveness in enhancing their learning experiences.

Table 9 Descriptive Statistics of Students' Satisfaction

	Item Statement	Mean	SD	Interpretation
1	It is more interesting than other materials I have used as part of a course.	4.11	.801	Agree
2	Learning through mobile devices made learning about onboard safety and security and personality development a better experience than I would otherwise.	4.04	.759	Agree
3	I learned the lessons more quickly and easily because of learning through a mobile device.	4.07	.958	Agree
	Total	4.2	.775	Strongly Agree

Hypotheses Testing

H_0: There is no significant influence of system quality, information quality, interaction, or perceived usefulness towards student satisfaction on Chaoxing learning platform usage.

H_a: There is a significant influence of system quality, information quality, interaction, and perceived usefulness towards student satisfaction on Chaoxing learning platform usage.

To assess the influence of System Quality (SQ), Information Quality (IQ), Interaction (AT), and Perceived Usefulness (PU) of the Chaoxing learning platform on students' satisfaction, a Multiple Linear Regression analysis was performed.

Table 10 ANOVA Omnibus Tests

	SS	df	F	p	η^2p
Model	13.31591	4	31.6536	< .001	0.852
SQ	0.12522	1	1.1907	0.287	0.051
IQ	0.71113	1	6.7618	0.016	0.235
IT	0.00438	1	0.0417	0.840	0.002
PU	1.01265	1	9.6288	0.005	0.3
Residuals	15.62963	22			
Total	13.31591	62			

Table 10 shows the multiple linear regression model. The ANOVA results demonstrated a statistically significant model effect, $F(4, 22) = 31.6536$, $p < 0.001$, indicating that the combined influence of the independent variables significantly impacts the dependent variable. The substantial effect size, with a beta squared (η^2p) of 0.852, highlights the strong explanatory power of the model.

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Table 11 Fixed Effects Parameter Estimates

Construct	β	t	p
SQ	0.147	1.091	0.287
IQ	0.360	2.600	0.016
IT	-0.043	-0.204	0.084
PU	0.548	3.103	0.005

Table 11 shows the relative strength of the independent variables on the dependent variable. These parameter estimates provide insights into the relationships between the independent variables (SQ, IQ, IT, PU) and the dependent variable. The p-values allow us to determine the significance of each effect, and the β values provide information about the strength and direction of the relationships. The parameter estimate for SQ is 0.1465, with a t-value of 1.091. The associated p-value is 0.287, which indicates that the effect of SQ is not statistically significant at conventional levels. or IQ, the parameter estimate is 0.3602, and its t-value is 2.600. The p-value is 0.016, indicating that the effect of IQ is statistically significant. The parameter estimate for IT is -0.0430, and the t-value is -0.204. The p-value is 0.084, suggesting a lack of statistical significance for the effect of Interaction. Lastly, the parameter estimate for PU is 0.5478, with a t-value of 3.103. The associated p-value is 0.005, indicating that the effect of PU is statistically significant.

The formula for the model of the independent variables towards students' Satisfaction with Chaoxing Learning Platform is

$$\hat{Y} = .147X_1 + .360X_2 + (-.043)\ X_3 + .548X_4$$

Table 9 Summary of the Hypothesis Testing

Statement	Results
H_0: There is no significant influence of system quality, information quality, interaction, or perceived usefulness towards student satisfaction on Chaoxing learning platform usage.	Rejected

Conclusions

This study sheds light on the multifaceted factors influencing student satisfaction with the Chaoxing Learning Platform at Beihai Vocational College. The research findings provide valuable insights into the significance of information quality, interaction, and perceived usefulness in shaping students' overall contentment with the platform. While the study supports the null hypothesis regarding system quality, it unveils a positive relationship between perceived usefulness and student satisfaction. These conclusions highlight the complex interplay between technological attributes and user experience, offering implications for enhancing educational platforms and fostering more engaging and effective learning environments. However, we also identified some limitations in that our sample size was small, focusing only on visual communication design students from a single university. This limits the generalizability of the findings, so further research should expand the sample size to include more students from different schools and majors.

Discussion

To what extent do system quality, information quality, interaction, and perceived usefulness influence students' overall satisfaction with the Chaoxing Learning Platform at Beihai Vocational College?

The study offers insightful information about the elements affecting students' satisfaction with Beihai Vocational College's Chaoxing Learning Platform, with a particular emphasis on information

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quality, interaction, and perceived usefulness. The results highlight the multifaceted nature of user experience in educational technology settings and highlight the significance of these factors in determining students' overall satisfaction with the platform (Alzahrani & Foo, 2019). Notably, the study finds a strong positive correlation between perceived usefulness and student satisfaction even though it supports the null hypothesis regarding system quality. This implies that students are more likely to be content with the platform if they believe it is helpful for their learning needs, even in the event that there are possible flaws in the system's quality (Venkatesh et al., 2012). These findings offer important implications for enhancing the functionality and design of educational platforms to better serve the needs of students. They also contribute to a deeper understanding of the intricate relationship between technological features and user experience in educational settings.

However, the study also notes some restrictions that might limit how broadly the results can be applied. The small sample size—all students majoring in visual communication design from a single university—is one significant drawback. Because of this restricted focus, the results' wider applicability is limited, and it is unclear how much of them can be applied to other student populations or academic fields (DeLone & McLean, 2003). Moreover, the study may miss possible differences in satisfaction levels and usage patterns across various schools, majors, or demographic groups because it only focuses on students from one university. Therefore, in order to provide a more thorough understanding of students' satisfaction with educational platforms, more research is required to increase the sample size and include students from various backgrounds and educational contexts.

By using larger and more varied samples of students from various universities, disciplines, and demographic backgrounds, future research should try to address these limitations. Researchers can obtain more robust and generalizable findings that take into account the diverse needs and preferences of students across different educational settings by expanding the scope of their study (Alzahrani & Foo, 2019). Further research could also take a mixed-methods approach, combining focus groups or qualitative interviews with quantitative surveys, in order to obtain a more comprehensive understanding of the variables affecting students' satisfaction with learning environments. With this thorough approach, researchers could investigate not only the quantitative relationships between variables but also the qualitative aspects of user satisfaction and experience, leading to a deeper understanding of the intricate dynamics surrounding the adoption and use of educational technology.

Recommendation

The overall model of the Multiple Linear Regression showed that when all the variables combined, they influenced students' satisfaction with the Chaoxing Learning Platform at Beihai Vocational College. However, when considering each variable separately, the following answers were explained.

To what extent does system quality influence students' overall satisfaction with the Chaoxing Learning Platform at Beihai Vocational College?

The analysis of the data suggests that system quality has a notable impact on students' overall satisfaction with the Chaoxing Learning Platform at Beihai Vocational College. The participants generally expressed positive perceptions of various aspects of system quality, including the ease of reading fonts on the screen, the ability to find needed information, minimal encounters with system errors, and easy access to content across devices. The overall positive sentiment, reflected in the mean score of 3.95, emphasizes the favorable evaluations of the platform's user interface, information accessibility, and content availability. However, the system quality did not find a statistically significant influence on students' satisfaction towards the Chaoxing Learning Platform at Beihai Vocational College ($p=0.287$) with a beta value of 0.1465, which indicated that system quality has a low impact on students' satisfaction.

To what extent does Information Quality influence students' overall satisfaction with the Chaoxing Learning Platform at Beihai Vocational College?

The analysis of the data indicates that Information Quality significantly influences students' overall satisfaction with the Chaoxing Learning Platform at Beihai Vocational College. Participants expressed positive perceptions of various facets of Information Quality, such as the clarity of information, ease of

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comprehension, and absence of errors. The mean score of 4.12 underscores the favorable evaluations of the platform's information-related aspects. The statistically significant findings ($p = 0.016$) and a beta value of 0.3602 indicate a strong impact of Information Quality on students' satisfaction. This suggests that improvements in Information Quality are likely to lead to increased satisfaction among students using the Chaoxing Learning Platform at Beihai Vocational College.

To what extent does Interaction influence students' overall satisfaction with the Chaoxing Learning Platform at Beihai Vocational College?

The analysis of the data suggests that Interaction does not have a statistically significant impact on students' overall satisfaction with the Chaoxing Learning Platform at Beihai Vocational College. Participants provided varied responses to aspects related to Interaction, including ease of use, familiarity, and understanding of guidelines. The mean score of 4.23 indicates a generally positive sentiment, but the non-significant findings ($p = 0.084$) and a low beta value of -0.0430 suggest that changes in Interaction are not reliably associated with changes in students' satisfaction. Therefore, it can be concluded that Interaction does not play a significant role in determining students' satisfaction with the Chaoxing Learning Platform at Beihai Vocational College.

To what extent does Perceived Usefulness influence students' satisfaction with the Chaoxing Learning Platform at Beihai Vocational College?

The analysis of the data indicates that Perceived Usefulness has a statistically significant and notable impact on students' overall satisfaction with the Chaoxing Learning Platform at Beihai Vocational College. Participants consistently expressed positive perceptions regarding the usefulness of the platform, including its ease of use, time efficiency, and overall practicality. The mean score of 4.36 emphasizes a strong agreement among participants. The significant findings ($p = 0.005$) and a high beta value of 0.5478 suggest that changes in Perceived Usefulness are reliably associated with changes in students' satisfaction. Therefore, it can be concluded that Perceived Usefulness plays a crucial role in determining students' satisfaction with the Chaoxing Learning Platform at Beihai Vocational College.

Implications for Practice

The purpose of this study was to investigate the factors influencing students' satisfaction with the Chaoxing Learning Platform at Beihai Vocational College. The study's implications for practice underscore the importance of prioritizing perceived usefulness and information quality in the design of the Chaoxing Learning Platform at Beihai Vocational College. The platform plays a vital role by expanding teaching channels, optimizing resources, and enhancing instructional convenience. It supports data collection for teaching analysis, allowing for informed feedback and improving teaching evaluation mechanisms, ultimately contributing to more effective educational practices. This is of great practical significance for improving the quality of online education and stimulating students' motivation and sense of achievement.

Future Research

While this study has provided valuable insights into the factors influencing students' satisfaction with the Chaoxing Learning Platform at Beihai Vocational College, there remain several avenues for future research that can further enrich the understanding of online learning experiences and platform design. Building upon the limitations and gaps identified in this research, future investigations can explore the following areas:

Comparative Studies: Comparing the satisfaction levels and factors influencing satisfaction across different online learning platforms can yield valuable insights into the strengths and weaknesses of various platforms. This could involve comparing the Chaoxing Learning Platform with other LMSs or even exploring differences in satisfaction between different versions or implementations of the same platform.

Cultural and Contextual Considerations: Given that online learning experiences can be influenced by cultural and contextual factors, future studies could investigate how students from diverse backgrounds perceive and interact with the Chaoxing Learning Platform. This could involve examining the impact of cultural norms, learning preferences, and regional educational practices.

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By addressing these recommendations and extending the investigation to a broader context, researchers can contribute further to the field's knowledge of enhancing online learning experiences and platform satisfaction.

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