Factors Impacting Students' Confirmation, Learning Engagement, Satisfaction, and Continuous Intention of Online English Learning in Vocational Colleges in Hangzhou, China

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Abstract

Purpose: This paper examines first-year and second-year students' satisfaction and continuous intention toward online English learning in Hangzhou, China. The conceptual framework includes interactivity, perceived usefulness, confirmation, self-efficacy, learning engagement, satisfaction, and continuous intention. **Research design, data, and methodology:** The study adopted a quantitative research strategy and collected data from 500 participants in Zhejiang Business College in Hangzhou using online questionnaire distribution approach. The index of item-objective congruence (IOC) is used to examine content validity and Cronbach's Alpha to test the reliability of each construct. Sampling techniques are judgment sampling, quota sampling, and convenience sampling. Structural Equation Modeling (SEM) and Confirmatory Factor Analysis (CFA) are adopted to test structural models and to explain eight hypotheses out of seven variables in the conceptual framework. **Results:** The results explicated that interactivity greatly affects the confirmation of perceived usefulness and significantly influences learning engagement. Interactivity presented the strongest impact on learning satisfaction, followed by perceived usefulness, learning engagement, and confirmation. Learning satisfaction greatly affects continuous intention. Nevertheless, a non-support relationship exists between students' self-efficacy and learning satisfaction. **Conclusions:** Lecturers, relevant management personnel from school academic affairs, and online English learning platform designers are very necessary to optimize students' interactivity and perceived usefulness to enhance confirmation and learning engagement, respectively.

Keywords : Online English Learning, Confirmation, Learning Engagement, Satisfaction, Continuous Intention

JEL Classification Code: E44, F31, F37, G15

1. Introduction

Online learning, a resilient response to the coronavirus pandemic, has shown remarkable adaptability and growth in 2020. The closure of colleges and universities during the pandemic necessitated a shift to online learning, making it the primary mode of education at that time (Gamage et al., 2020). As Jamaludin et al. (2020) predicted, this transition from offline to online learning is becoming the "new normal." Online learning, facilitated by the Internet, allows lecturers to develop teaching modules and deliver lectures to learners in real-time or asynchronously, thereby enhancing teaching procedures and performance through the network (Singh & Thurman, 2019).

Unlike attending physical school in person, online English learning's strengths lie in its great flexibility, self-paced learning, accessibility of time and location, affordability, availability and personalization of diverse online English resources, and repeated and easy access to online English study materials. Additionally, students can take online English tests and get automatic grading after a period of learning. On the other hand, being self-motivated and staying highly focused can be challenging for those dependent learners. Limited face-to-face interactions mean fewer opportunities to connect with classmates, which may hinder students' social growth. Lack of hands-on learning may not be a highly effective alternative for courses that require practice. Due to these weaknesses, some learners are not willing to use such an online education method,

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adversely impacting the anticipated performance of such virtual learning (Le & Fan, 2019; Wan et al., 2020). Furthermore, Djouad and Mille (2018) claimed that online learning platforms differ in characteristics and purposes, which may influence the effectiveness, satisfaction, and continuous intention of learning.

By comprehensively analyzing students' willingness to engage in online English learning, this study has uncovered the potential of online learning to boost efficiency and performance. The integration of models has identified five independent factors that significantly influence student satisfaction with online English learning in vocational colleges in Hangzhou. These factors-interactivity, confirmation, perceived usefulness, learning engagement, and students' self-efficacy-not only influence satisfaction but also students' continuous intention. This research provides practical suggestions and recommendations for online instructors, inspiring future researchers to investigate the effectiveness of online learning in English courses in Hangzhou.

2. Literature Review

2.1 Continuance Intention

Continuance intention is the willingness and behavior to adopt information systems again (Limayem & Cheung, 2011). Zhu et al. (2020) believed that academic impetus, self-competence, attitudes, experience, and self-efficacy determine continuance intention. Put forward by Bhattacherjee (2001), individuals' contentious intention to adopt certain information systems depends on their satisfaction and perceived usefulness of reuse based on the expectation-confirmation model (ECM). Research confirmed that family encouragement, lecturers' attitude, match of a given assignment, and technology greatly impact individuals' continuance intention (Mo et al., 2021).

2.2 Interactivity

Interactivity is the basis for gaining knowledge and cultivating cognition competence (Evans & Gibbons, 2007). Zazelenchuk (1997) put forward that interactivity should be studied in a series of interactive activities and consists of six requisites constitute, namely positive study environment, students' restraint, feedback, multimedia, individuals' response choices, and adaptability. Anderson (2003) defined interactivity as a term derived from interaction and viewed as a key constituent of traditional and online learning. For online learners, interactivity is a pivotal aspect of the virtual study context (Rodriguez-Ardura & Meseguer-Artola, 2016;

Van den Berg, 2020). Nolan-Grant (2019) view interactivity as the critical factor that contributes to involvement and study acquisition. According to Yang (2016), MOOC learners concluded that interactivity would positively impact their confirmation. When people emphasize online platform interactivity, communication among users would be greatly booted, enhancing their confirmation and expectations (Liu, 2010). Interactivity significantly affects customer satisfaction and building relationships (Joo et al., 2018). Byers (2010) argued that interactivity technologies in content design, such as imitation, references for interactive and hands-on activities, and learners' feedback, will boost individuals' online study satisfaction. Therefore, this paper puts forward the assumption listed below:

H1: Interactivity has a significant effect on confirmation.
H3: Interactivity has a significant effect on satisfaction.

2.3 Perceived Usefulness

According to Ozturk (2016), perceived usefulness refers to an individual's willingness to apply new technologies in that they firmly believe this would boost their work. Jung and Lee (2018) proved that perceived usefulness can positively impact individuals' engagement in the MOOC learning environment. Bhattacherjee (2001) and Lin and Lu (2011) found in their studies that perceived usefulness can positively affect individuals' satisfaction. The relationship between perceived usefulness and satisfaction is revealed in diverse research, such as online learning systems (Almahamid & Rub, 2011; Ho, 2010;). Al-Samarraie et al. (2018) and Hui et al. (2019) found that perceived usefulness can predict learners' satisfaction. The positive correlation between perceived usefulness and satisfaction has been explained in previous studies, for example, in the context of e-book learning (Stone & Baker-Eveleth, 2013). Therefore, this research hypothesizes the following:

H2: Perceived usefulness has a significant effect on learning engagement.
H5: Perceived usefulness has a significant effect on satisfaction.

2.4 Confirmation

Confirmation is interpreted as gaining recognition, and there are differences in scope, strength, quantity, and quality (Laing, 1961). Sieburg (1976) is actions that can be communicated and underline individuals' importance in a certain context while stressing people's connections with each other. Regarding class learning, confirmation means the exchange process between teachers and students, in which students are confirmed and gain recognition as worthy and meaningful people from teachers (Ellis, 2000). In the learning context, confirmation is studied from two aspects:

confirmation messages from teachers and learner communication feedback (Johnson & LaBelle, 2020). Based on expectation-confirmation theory, the degree of individuals' confirmation is considered one of the most significant prerequisites for achieving satisfaction (Lee, 2010). Halilovic and Cicic (2013) put forward that there is a positive correlation between and confirmation in the usage of information systems. If individuals think certain technology is remarkably helpful and actual utilization is in line with or beyond their original anticipation, confirmation contributes to satisfaction in such cases (Cao et al., 2018). With the findings mentioned above, the paper puts forward that:

H4: Confirmation has a significant effect on satisfaction.

2.5. Learning Engagement

Learning engagement is the endeavor of one's commitment in terms of psychology, in which learners try to facilitate their involvement during the learning process to gain knowledge and form critical thinking (Dixson, 2015). Learning engagement is defined as students who have participated positively in assignments and activities in class (Lei et al., 2018). It is defined as students' endeavor quality when they commit to participating in meaningful educational activities that help them achieve expected results (Hu & Kuh, 2001). Most studies defined learning engagement as involving engagement of emotion, behavior, and cognition (Coates, 2006; Fredricks et al., 2004) and agentic engagement (Reeve & Tseng, 2011). Denovan et al. (2020) defined learning engagement as those behaviors that involve students' concentration on listening, note-taking, and oral discussions, showing the inclusion of learning performance and meaningful social activities. In the online learning environment, previous research has proved the positive influence of learning engagement on satisfaction. For instance, in a blended learning context, learners' satisfaction with flipped classrooms is greatly affected by engagement (Murillo-Zamorano et al., 2019) when technologies like taking videos in advance are adopted by students and cooperate with classmates with the help of online lectures (Findlay-Thompson & Mombourquette, 2014). Using the argument stated above, the hypothesis is put forward as follows.

H6: Learning engagement has a significant effect on satisfaction.

2.6 Students' Self-efficacy

Hasan (2003) defined self-efficacy as individuals who show their interests and are willing to try and interact with technologies. In an educational environment, self-efficacy is associated with students' faith and decisions, which center on their abilities to accomplish learning obligations and duties (Fife et al., 2011). Motlagh et al. (2001) explained that students' self-efficacy is the most significant factor in their successful academic performance and can also predict learning performance. Studies have shown that self-efficacy is positively related to learning outcomes and effective tackling mechanisms (Paciello et al., 2016). Lin et al. (2008) argued that self-efficacy greatly affected students' satisfaction with online learning. Research showed that students' self-efficacy can be the most significant factor in predicting online learning satisfaction (Gunawardena et al., 2010). Lee et al. (2020) found that students will be discouraged from completing given assignments and stop trying if their self-efficacy is undermined, impacting their satisfaction. Hence, this study hypothesizes:

H7: Students' self-efficacy has a significant effect on satisfaction.

2.7 Learning Satisfaction

Bolliger (2004) defined learning satisfaction as learners' cognition, which is gained from experiencing lectures, and cognition value gained from learning organizations.

Learning satisfaction is vital to show individuals' learning performance and accomplishment (Virtanen et al., 2017). Zapko et al. (2018) articulated learning satisfaction as the sense of self-fulfillment and enthusiasm after a study associated with learners' original anticipation. (Bangert, 2006) interpreted that online learning satisfaction is determined by four perspectives: interaction and communication between learners and lecturers, time of assignment given to learners, active involvement in learning, and collaboration with classmates. Bearden and Teel (1983) and Oliver (1993) explained that satisfaction is the major reason customers purchase again in marketing. The study found that users would visit media platforms frequently and continue to use them if they were satisfied with social media interactions (Hallock et al., 2016). Studies have proved that individuals' learning satisfaction positively affects their willingness to use online learning again (Bashir, 2019; Chiu et al., 2005; Joo et al., 2018; Lee, 2010; Taghizadeh et al., 2022; Wang & Gan, 2014; Yang et al., 2022). The above-mentioned studies have provided sufficient evidence about the association between learning satisfaction and continuous intention. Therefore, the following hypothesis is assumed:

H8: Learning satisfaction has a significant effect on continuous intention.

3. Research Methods and Materials

3.1 Research Framework

The conceptual framework of this study (Figure 1) is based on prior studies by Maini and Agrawal (2021) and Cheng (2022).
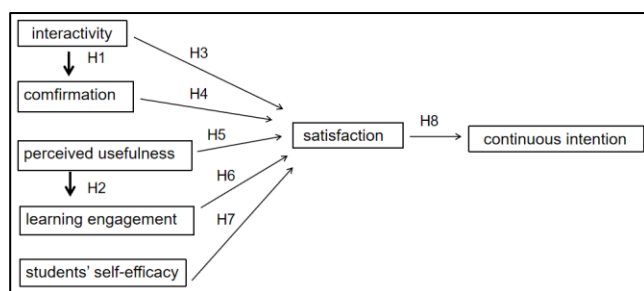

Figure 1: Conceptual Framework

H1: Interactivity has a significant effect on confirmation.
H2: Perceived usefulness has a significant effect on learning engagement.
H3: Interactivity has a significant effect on satisfaction.
H4: Confirmation has a significant effect on satisfaction.
H5: Perceived usefulness has a significant effect on satisfaction.
H6: Learning engagement has a significant effect on satisfaction.
H7: Students' self-efficacy has a significant effect on satisfaction.
H8: Learning satisfaction has a significant effect on continuous intention.

3.2 Research Methodology

Quantitative analysis is regarded as the most appropriate method when the major goal of the study is determining the correlation between variables (Creswell et al., 2003). This study adopts a quantitative research strategy by analyzing 500 valid questionnaires distributed online to students who have online English classes at Zhejiang Business College, with 30 samples as a pilot test. The research first filters ineligible participants by screening questions and then introduces the 5-point Likert scale method to test items. Then, demographic questions such as gender, age, learning experience, and preference will be used.

Confirmatory factor analysis (CFA) is applied in this study to examine measurement models, ensuring the research's precision. Cronbach's Alpha is introduced to test the research's dependability, aiming to ensure the study's data is credible and the uniformity of the questionnaire's internal data is high. When credibility was ensured, the researcher

analyzed 500 accepted questionnaires. Structural Equation Modeling (SEM) is adopted to study the effects of variables and the structure of the framework.

3.3 Population and Sample Size

In qualitative surveys, how to choose a target population depends on whether the person is capable of best-expressing ideas to achieve objectives. Therefore, the target population in this paper was those who had online English study experience for more than one term at Zhejiang Business College (ZJBC) in Hangzhou, China.

The study employed online statistical techniques provided by Soper (2018) to calculate the appropriate sample size. A sample of 500 participants was determined using the sample size calculation estimator proposed by Soper (2018). The surveyor then used the Structural Equation Modeling (SEM) technique to approach a collection of 500 participants who could clearly understand the original English version of the questionnaire. The sample units included students at ZJBC who had been using online English learning for more than one semester. However, third-grade students were excluded from the study due to their participation in an internship program, which could potentially affect their online English study experience. The study collected data from 500 participants out of 6943 students at ZJBC, using a combination of online and offline questionnaire distribution methods.

3.4 Sampling Technique

Probability and non-probability sampling techniques are applied to produce better and more accurate results. The study adopted three-stage methods: judgment sampling, quota sampling, and convenience sampling. Judgmental sampling was used to select online English learners in Zhejiang Business College for more than one semester in Hangzhou, China. In Table 1, quota sampling was adopted to analyze 500 participants, with convenience sampling being utilized to distribute respondents to online questionnaires.

Table 1: Sample Units and Sample Size

Department	Grade	Number of Students	Proportional sample size
School of Electronic Commerce	Grade 1	650	47
School of Economics and Management	Grade 1	572	41
School of Applied Engineering	Grade 1	467	34
School of Art and Design	Grade 1	534	38
School of Culinary Tourism	Grade 1	241	17

Department	Grade	Number of Students	Proportional sample size
School of Accounting and Finance	Grade 2	926	67
School of Electronic Commerce	Grade 2	942	68
School of Economics and Management	Grade 2	1034	74
School of Applied Engineering	Grade 2	571	41
School of Art and Design	Grade 2	536	39
School of Culinary Tourism	Grade 2	470	34
Total		**6943**	**500**

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

As shown in Table 2 below, 500 participants were selected to conduct the survey, with males accounting for 39.8%, whereas females 60.2%. For the grade group, first grade dominates online English learning, with 76.2% of students, followed by second grade with 23.8%. None of them in third grade have online English courses because of curriculum arrangement and internship. In terms of age, students between 17 and 18 years old take the largest proportion, occupying 87.4%; 19-20 years old comes in the second place, making up 8.2%, 21-22 years old at 3% and more than 22 years old at 1.4% because they are veterans or they suspend schooling and resume studies. Respondents have 1-2 times online English learning at 80.8%, 3-4 times at 15%, 5-6 times at 3.2%, and more than six times at 1%. Regarding the attraction of online English learning, 64.4% of respondents choose online English learning because of its convenience and flexibility, 6.2% for online activities, and 4.4% for online homework. Online games at 23.2% and other attractions at 1.8%, respectively.

Table 2: Demographic Profile

Demographic and Behavior Data (N=500)		Frequency	Percentage
Gender	Male	199	39.8%
	Female	301	60.2%

Demographic and Behavior Data (N=500)		Frequency	Percentage
Grade	First grade	381	76.2%
	Second grade	119	23.8%
	Third grade	0	0%
Age	17-18 years old	437	87.4%
	19-20 years old	41	8.2%
	21-22 years old	15	3%
	More than 22 years old	7	1.4%
How many times have you had experiences with online English learning during one week?	1-2 times	404	80.8%
	3-4 times	75	15%
	5-6 times	16	3.2%
	More than 6 times	5	1%
What is the attraction of Online English Learning do you prefer most?	Convenience and flexibility	322	64.4%
	Online activities	31	6.2%
	Online homework	22	4.4%
	Online games	116	23.2%
	Other attractions	9	1.8%

4.2 Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) is employed to conduct the research in this paper. Confirmatory factor analysis (CFA) is an essential statistical technique used to measure and validate the structure's factor (construct), which consists of analyzed variables. It offers indispensable proof for constructs in terms of discriminant validity and convergent (Brown & Moore, 2012). When it comes to statistically significant results of all indicators, factor loading should be at least above 0.5 and would be ideal when the value is greater than 0.7, and the average variance extracted value should be at least greater than 0.5 to symbolize good convergent validity (Hair et al., 2010). The values of factors loading are higher than 0.6, and the average variance extracted values are above 0.5 in Table 3, which is adequate for convergent validity. Composite Reliability (CR) is a tool to analyze internal consistency without assuming every indicator has the same weight. Constructs' credibility proves to be good when its limit value is higher than 0.7 and turns out to be very satisfactory when its value is greater than 0.8. All the results are higher than 0.8, and the constructs' credibility performs well in Table 3.

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
Interactivity (ITA)	Chen et al. (2017)	6	0.932	0.820-0.850	0.932	0.696
Confirmation (CF)	Cheng et al. (2019)	3	0.766	0.632-0.775	0.772	0.532
Perceived Usefulness (PU)	Cheng (2014)	5	0.879	0.697-0.838	0.881	0.599
Learning Engagement (LE)	Maini and Agrawal (2021)	5	0.890	0.610-0.848	0.892	0.626
Students' Self-efficacy (SSE)	Hasan (2003)	5	0.857	0.638-0.797	0.858	0.549
Satisfaction (SF)	Darawong and Sandmaung (2019)	6	0.906	0.754 -0.887	0.906	0.618
Continuous Intention (CI)	Cheng (2022)	4	0.841	0.673 -0.869	0.845	0.580

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 3.00 (Hair et al., 2006)	1059.034 / 506 = 2.093
GFI	≥ 0.90 (Hair et al., 2006)	0.881
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.860
NFI	≥ 0.90 (Hair et al., 2006)	0.899
CFI	≥ 0.90 (Hair et al., 2006)	0.944
TLI	≥ 0.90 (Hair et al., 2006)	0.938
RMSEA	< 0.08 (Pedroso et al., 2016)	0.047
Model Summary		Acceptable Model Fit

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 = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index, and RMSEA = root mean square error of approximation

In Table 5, the value of the square root of each construct's AVE is greater than the correlations with other latent constructs, which concludes that the result of discriminant validity is acceptable to measure this model and support the discriminant validity between the constructs.

Table 5: Discriminant Validity

	ITA	CF	PU	LEN	SSE	LSF	CI
ITA	**0.834**						
CF	0.291	**0.729**					
PU	0.335	0.369	**0.774**				
LEN	0.349	0.366	0.391	**0.791**			
SSE	0.049	-0.076	-0.072	-0.025	**0.741**		
LSF	0.370	0.316	0.379	0.351	-0.020	**0.786**	
CI	0.385	0.347	0.377	0.334	-0.041	0.451	**0.762**

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

4.3 Structural Equation Model (SEM)

According to Hoyle (1995), the structural equation model (SEM) is applied to verify variables' relationships, representing an all-around means in statistics to examine hypothesized links between observed and unobserved variables. CMIN/DF, GFI, AGFI, NFI, CFI, TLI, and RMSEA are examined to evaluate overall model fit in

Confirmatory Factor Analysis (CFA). The chi-square/degrees of freedom ratio (CMIN/DF) suggest the accepted fit when its ratio is lower than 3 (Kline, 1998). It reveals a good model fitness when its ratio does not exceed 5 (Marsh & Hocevar, 1985). Model fit is regarded as good when the value of RMSEA is smaller than 0.05 and considered acceptable fitness when its value is below 0.08, which allows rational mistakes (Pedroso et al., 2016).

In Table 6, all the values prove to be acceptable, with CMIN/DF=2.485, GFI=0.861, AGFI = 0.841, NFI=0.877, CFI=0.922, TLI=0.916 and RMSEA=0.055. This indicates that the measurement model achieved its reliability and validity, constituting an acceptable model fit.

Table 6: Goodness of Fit for Structural Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 3.00 (Hair et al., 2006)	1289.951 / 519 = 2.485
GFI	≥ 0.90 (Hair et al., 2006)	0.861
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.841
NFI	≥ 0.90 (Hair et al., 2006)	0.877
CFI	≥ 0.90 (Hair et al., 2006)	0.922
TLI	≥ 0.90 (Hair et al., 2006)	0.916
RMSEA	< 0.08 (Pedroso et al., 2016)	0.055
Model Summary		Acceptable Model Fit

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 = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index, and RMSEA = root mean square error of approximation

4.4 Research Hypothesis Testing Result

The model demonstrated the continuance intention variance, as shown in Table 7. The relationship among variables put forward in the hypothesis is tested by standardized path coefficients and t-value as follows. It can be seen from Table 6 that most testing results are supported on the condition that the value of p equals 0.05, with students'

self-efficacy's effect on learning satisfaction as an exception, which is not supported. Learning satisfaction has the most significant impact on continuance intention, with a standardized path coefficient (β) at 0.521, whereas confirmation has a minimal effect on learning satisfaction (β =0.172).

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: ITA→CF	0.328	6.213*	Supported
H2: PU→LEN	0.415	8.153*	Supported
H3: ITA→LSF	0.245	5.030*	Supported
H4: CF→LSF	0.172	3.283*	Supported
H5: PU→LSF	0.218	4.213*	Supported
H6: LEN→LSF	0.180	3.557*	Supported
H7: SSE→LSF	-0.013	-0.295	Not Supported
H8: LSF→CI	0.521	9.312*	Supported

Note: * p<0.05
Source: Created by the author

The conclusion can be drawn from Table 7: H1, which illustrates that interactivity greatly affects the confirmation, with a standardized path coefficient of 0.328 and t-value of 6.213, which previous research can support. When users interact with online study systems, recognition of better quality has a strong possibility of exceeding their anticipations, bringing about positive confirmation of the system, where users think online study quality performs better than their expectation (Chiu et al., 2005).

H2 has postulated the significant influence of perceived usefulness on learning engagement, representing the standardized path coefficient of 0.415 and t-value of 8.153. To support this statement, according to Ajzen and Fishbein (1980), the level of engagement and attitudes devoted to the plan has been measured by users' outcome assessment and behavioral beliefs' prediction under the circumstances of TRA.

The strongest impact on learning satisfaction is interactivity. The path relationship of interactivity and learning satisfaction has a standardized path coefficient of 0.245 and a t-value of 5.030 in H3. The result is consistent with Espasa and Meneses (2010), whose analysis data prove that online learning features with high interactivity will translate into increasing motivation, academic performance, and growing satisfaction compared with a less interactive study atmosphere.

Another vital factor affecting learning satisfaction is confirmation, which is supported by the standardized path coefficient value of 0.172 and t-value of 3.283. When individuals assume that certain technology is useful and experience its usage in a real context beyond their original expectation, confirmation results in satisfaction(Cao et al., 2018; Huang, 2019; Lu et al., 2019).

As for H5, the research result supported the hypothesis that perceived usefulness has a great effect on satisfaction,

representing a standard coefficient value of 0.218 and a t-value of 4.213. According to Zheng and Chen (2011), e-learners' perceived usefulness will significantly affect study satisfaction, which will encourage users to stick to online learning in the long run.

In terms of H6, the hypothesis that learning engagement greatly affects learning satisfaction is also supported by testing results, with a standard coefficient value of 0.180 and a t-value of 3.557. Studies state that higher engagement drives more satisfaction. According to Handa and Gulati (2014), engagement positively affects individuals' psychology, satisfaction, and intention to stay in certain organizations.

When the standardized path coefficient is -0.013, and the t-value is -0.295, there is no effect on students' self-efficacy toward learning satisfaction, proving that H7 is not supported. Previous studies proved that various aspects from the personal, learning, social, and environmental perspectives can affect students' academic self-efficacy. They include such factors as students' previous learning engagement, their interests or attitudes in learning, different levels of task difficulty, and social and cultural factors (Wang & Pape, 2007). That isThat is why students' self-efficacy may not completely result in learning satisfaction.

The result of the standardized path coefficient is 0.521, and the t-value is 9.312, proving that H8 learning satisfaction greatly impacts continuance intention to get support. Various studies have stated that satisfaction has been regarded as a significant influential factor for an individual's continuance intention to reuse services. Under the online learning context, satisfaction greatly impacts the user's intention to continue using (Dai et al., 2020).

5. Conclusion and Recommendation

5.1 Conclusion

By well-conceptualized and comprehensive literature reviews, a new conceptual framework, and a statistical analysis of hypothesis testing results, the research provides valuable insights and practical solutions into the significant, influential factors that affect students' satisfaction and continuous intention toward online English learning in vocational colleges in Hangzhou. The findings concluded that interactivity influences confirmation, and perceived usefulness affects learning engagement. Interactivity, confirmation, perceived usefulness, and learning engagement have significant relationships with satisfaction during online English learning. Learning satisfaction positively impacts continuous intention. In conclusion, online English learning practitioners, including

teachers, school academic affairs and administration personnel, and online English learning platform designers, should maximize students' interactivity and perceived usefulness to increase their confirmation and learning engagement, respectively. Additionally, it is significant for them to increase satisfaction by promoting students' interactivity, confirmation, perceived usefulness, and learning engagement to facilitate continuous intention. The findings can be elaborated as follows.

During online English learning, teachers should boost online learning interactivity through various approaches throughout the instructional period, such as participating in group discussions, pausing to ask questions, and tutoring sessions with struggling learners. They can also apply gamified learning, an interesting way of integrating rewarding systems and setting challenges to improve interactive learning. Apart from gamification, overall interactivity can be increased by embedding interactive elements into online learning platforms, bringing materials beyond textbooks, such as virtual whiteboards, images, voices, videos, 360 media, VR experiences media, 3D models, and other multimedia resources. Before and after online English learning, it is significant for instructors to connect with learners and be responsive to their actions, monitor students' learning progress, and shape and adjust how they teach. Without face-to-face interaction, like asking questions and engaging in group discussions, teachers can check students' involvement via platform setting, messaging, or email. Artificial intelligence can also support personalized interactions through automated projects and tasks.

In terms of online study, when learners perceive online study platforms as a more helpful way to interact with lecturers, their classmates, and study content, it is more likely for them to focus on systems' actual functions, as well as act out great effective responses to it (Gao et al., 2020). Online learning platforms should be designed with various practical functions and modules that meet different needs so that students can utilize personalized materials in their curriculum to boost self-paced and customized learning, which enhances their cognition that online English learning can offer a better learning experience for them to memorize words and passages, to connect with peers and lectures, to improve learning outcomes by tailored learning resources. This is especially important for students in vocational colleges in Hangzhou, where there are great differences in foundation, learning capacity, and potential. Difficulty-setting scale materials will let learners use appropriate resources that meet their learning ability and level.

Confirmation positively correlates with satisfaction because it means achieving anticipated advantages of informative usage (Bhattacherjee, 2001). Therefore, students should be offered the benefits of online English learning by its effectiveness, efficiency, scheduling flexibility, easy-to-

use technologies, and interesting ways to absorb new knowledge, which proves that online English learning is a good option beyond expectation and brings about more confirmation.

It is a great way to keep learners engaged by providing immersive learning experiences. Educators should incorporate active student-centered learning activities by leveraging personal critical thinking and group cooperation approaches, such as project-based learning and quizzes, problem-solving tests, case studies, group discussions, and presentations.

5.2 Recommendation

The subjects of this research paper mainly focus on first-year and second-year students who have online English learning experience in Hangzhou, China. It is suggested that instructor-led online courses apply various means to explore students' online learning satisfaction and continuous intention by embracing diverse learners with different learning backgrounds, potential, and capabilities. In addition, different assessment subjects, like teachers themselves, students, academic affairs office management personnel, and online English platform design companies, should be involved to know real-time and all-round feedback using statistics from multi-dimensional aspects, such as evaluation of platform design about interactivity and engagement and assessment of the most popular online module. Lastly, they refine AI-enabled assessment and analysis by integrating AI to support non-standardized tests' evaluation to get timely feedback and facilitate students' engagement and satisfaction with its invaluable insights.

5.3 Limitation and Further Study

It had three limitations in this paper altogether. The study's target constitutes the first restriction. The research objects are students in Hangzhou's Zhejiang Business College who are conducting online English learning. Students do not have English classes in their third year, and some majors do not even have them at the beginning of the first semester. Students online learning arrangements and backgrounds, features of learning behaviors, cultural differences, regional differences of learning, and learning equipment are expected to be expanded to cover various perspectives so as to reduce the limitations of sample selection. Secondly, updating and renewing online English study platforms and applications will lead to unpredictability and changes in study modes and behaviors. Research findings may not apply to new online learning modes and environments in the future. Thirdly, the study's width should be broadened. Other representative critical variables that impact students' online English learning, mainly from the

aspects of students' psychological development, social cognitive level, behaviorist theory, and sociocultural theory, should be involved and analyzed.

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