LEARN Journal: Language Education and Acquisition Research Network
ISSN: 2630-0672 (Print) | ISSN: 2672-9431 (Online)
Volume: 17, No: 2, July – December 2024

Language Institute, Thammasat University
https://so04.tci-thaijo.org/index.php/LEARN/index

The Relationship of Factors Influencing Behavioral Intention to Participate in Hybrid Education: Undergraduate University Students Majoring in English, Chengdu, China

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APA Citation:
Zou, X., & Limpapath, P. (2024). The relationship of factors influencing behavioral intention to participate in hybrid education: Undergraduate university students majoring in English, Chengdu, China. *LEARN Journal: Language Education and Acquisition Research Network, 17*(2), 370-391.

Received
28/12/2023

Received in revised form
07/04/2024

Accepted
24/04/2024

ABSTRACT

The purpose of this study was to investigate the relationship of factors influencing behavioral intention to participate in hybrid education of undergraduate university students majoring in English in Chengdu Universities, China. Questionnaires were collected with 450 respondents from three public universities in Chengdu with the reliability (Cronbach Alpha Coefficient) of 0.918. Confirmatory Factor Analysis (CFA) was run to identify the factors influencing behavioral intentions to participate in hybrid education. Subsequently, Structural Equation Modeling (SEM) was used to ascertain the causal relationships between factors. It was found that perceived usefulness, perceived ease of use, and perceived convenience indirectly influenced behavioral intention to participate in hybrid education and was mediated by attitude towards use with the direct impact of social influence and effort expectancy on behavioral intention. It is expected that, the model of the

relationship of factors influencing behavioral intention to participate in hybrid education created in this study would be beneficial for undergraduate students majoring in English, in Chengdu Universities or alike, to achieve their goals in learning English both online and onsite effectively.

Keywords: behavioral intention, undergraduate university students majoring in English, hybrid education, universities in China

Introduction

Research Background

The Ministry of Education in China has launched an initiative to guarantee uninterrupted learning and promote the use of online platforms in educational institutions for the purpose of continuing instruction in response to the abrupt breakout of the COVID-19 virus (Huang et al., 2020). Accordingly, from the academic year of 2020 to 2022 and onwards, it was required for Chengdu Municipal Education Commission to be ready anytime and anywhere, to arrange online teaching and learning to all students with diverse majors and disciplines. Thus, that was a starting point of hybrid education, with a combination of onsite and online teaching and learning, for college levels in Chengdu universities (Bao, 2020; Schulten, 2020). Because of this, all the students in every major, must adapt themselves to information technology and the use of technological resources in their newly established routine of daily learning (Al-Sharafi et al., 2022; Huang et al., 2020; Wang, 2020; Zhou et al., 2020).

This paradigm of hybrid teaching and learning has dramatically altered conventional learning dynamics, even in the realm of language education that may redefine students' perspectives on integrating technology into their hybrid learning experiences (Zhang & Tang, 2021; Zhang et al., 2022; Zhu & Liu, 2020). Behavioral intention, which is an individual's subjective possibility of being willing to carry out some behavior that represents the cognitive presentation of either immediately choosing to take or not to take action to participate in certain situation, in this case, hybrid education, turned out to be the most tested variable (Buabeng-Andoh, 2021; Heilporn et al., 2021).

Significance of the research

While behavioral intention turned out to be a central factor to participate in hybrid learning, factors such as perceived usefulness, perceived ease of use, social influence, effort expectations, and attitude towards use significantly influenced undergraduates' behavioral intentions in hybrid learning across disciplines, for instance, Arts & Animation, (Dajani & Hegeleh, 2021), Education, (Hwang, 2018; Zhang et., 2020), IT (Al-Hamed et al, 2021), Nursing (Williamson & Muckle, 2018; Sanpanich, 2021), and Computer Science (Bazelais et al., 2018; Sousa, 2021). As can be seen, while the findings here emphasized behavioral intention to participate in hybrid education in different majors of undergraduates in various fields, it appeared that none of them have been involved with English major students, particularly, in China. To fill the gap as well as to respond to Chengdu municipal government's mandate endorsing hybrid teaching and learning as the normalized medium for all university majors (Liu et al., 2021; Xiong et al., 2021), this study focused on behavioral intention of the undergraduate students majoring in English to participate in hybrid education. Given the essence of language learning (Godwin-Jones, 2020), English major students must effectively navigate their behavioral intention to participate in learning English through hybrid teaching and learning. Accordingly, to obtain the model of the relationship of factors influencing behavioral intention to participate in hybrid education, of undergraduate students majoring in English, at universities in Chengdu, China, would be reasonably beneficial, in this case, for hybrid teaching and learning as a whole.

Research Objectives

1. To explore the factors influencing behavioral intention to participate in hybrid education of undergraduate students majoring in English in the universities in Chengdu; and
2. To obtain a model of the causal relationship of factors influencing behavioral intention to participate in hybrid education of undergraduate students majoring in English in universities in Chengdu.

Literature Review

In the domain of hybrid education, behavioral intention is a crucial psychological construct that signifies the probability of students engaging with blended learning platforms (Al-Sharafi et al., 2022; Huang et al., 2020).

Anchored in the theoretical foundations of the Technology Acceptance Model (TAM), behavioral intention is indicative of students' prospective engagement with educational technologies, embodying the motivational determinants that drive behavior (Ajzen, 1991). This concept encapsulates a student's preparedness to undertake specific actions, namely the use of hybrid educational tools and methods (Ajzen & Fishbein, 1980; Davis, 1989). A substantial body of research suggests that students' behavioral intentions toward hybrid education are significantly shaped by their attitudes, which in turn are influenced by the perceived usefulness and ease associated with the technology (Huang et al., 2020; Sukendro et al., 2020). Factors such as perceived convenience, effort expectancy, and social influence have been identified as strong predictors of engagement, with evidence indicating that greater convenience and reduced effort correlate with a heightened inclination to participate in hybrid learning contexts (Malik et al., 2021; Venkatesh et al., 2003). Moreover, the extent to which the use of technology is positively regarded by peers and the broader social milieu profoundly affects students' behavioral intentions, suggesting a greater likelihood of technology adoption in hybrid educational settings when social endorsement is high (Al-Sharafi et al., 2022; Venkatesh et al., 2003).

Based on the theories of Technology Acceptance Model (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003), the relationship of seven variables were tested. Those variables were: 1) Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Perceived Convenience (PC), Social Influence (SI), and Effort Expectancy (EE) as the independent variables, Attitude towards Use (ATU) as the mediator variable, and Behavioral Intention (BI) as the dependent variable.

While PU is identified as the student's perception of usefulness in utilizing technology in hybrid educational system that helps boost his or her learning performance (Huang & Liaw, 2018; Vululleh, 2018), it is argued to significantly impact students' intention in adopting technology as a tool in their learning system (Cabero-Almenara et al., 2019; Salloum et al., 2019). It is highly connected with ATU in a positive manner (Almaiah et al., 2019; Kumar et al., 2019). PEU is a student's perception of easiness in deciding whether to use any technology to participate in hybrid teaching and learning, it has a direct impact on ATU and then on BI in terms of its use and practicality (Dewi, 2020; Qin et al., 2019; Rui-Hsin & Lin, 2018). As PC concerns with a student's technology ability and convenience regardless of place, time, system, or service while studying (Mokhtar et al., 2018), it involves technological adaptability throughout the engagement in hybrid learning (Elnagar et al., 2021; Hussein & Hilmi, 2021). ATU, which is the attitude towards acceptance of technology (Pitafi et al., 2020), is believed to

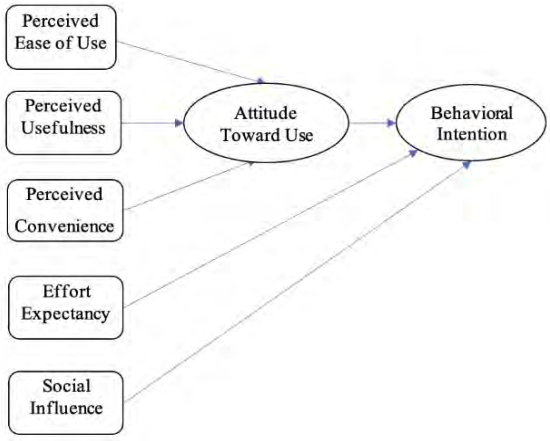
be a mediator that is effected by PEU, PU, and PC, and later effects BI (Al-Hamad et al., 2021; Eksail & Afari, 2020; Shao, 2020; Tahar et al., 2020).

The last two factors that are considered to directly affect BI are EE and SI. First, EE, as a total determination of facility and easiness linked with positioning, adopting, and employing the technology in hybrid teaching and learning (Fagan, 2019; Siddiqui et al., 2021) is pointed out to be an active influence on behavioral intention in utilizing technology (Tobarra et al., 2020; Yakubu & Dasuki, 2019). Lastly, SI which is the level of perception convinced by a wise choice, among several others in order to employ the target educational technology and system (Mahande & Malago, 2019). It is the factor that influences student's choice in choosing the right tools at the right time as to perform and fulfill their tasks (Al-Sharafi et al., 2022; Gagnon, et.al., 2020; Weilage & Stumpfegger, 2022).

Conceptual Framework

Figure 1

The Conceptual Framework



Hypothesis 1: Perceived ease of use has an indirect effect on behavioral intention with attitude towards use as a mediator.

Hypothesis 2: Perceived usefulness has an indirect effect on behavioral intention with attitude towards use as a mediator.

Hypothesis 3: Perceived convenience has an indirect effect on behavioral intention with attitude towards use as a mediator.

Hypothesis 5: There is a significant causal relationship between effort expectancy and behavioral intention.

Hypothesis 6: There is a significant causal relationship between social influence and behavioral intention.

Research Methodology

Population and Sample

The population of the study contained 800 undergraduate students majoring in English with experiences in hybrid education from three different public universities in Chengdu, China. A sample size of 450 respondents with a composite sampling technique, integrating both stratified and systematic approaches, where every 2nd name on the list was included: University 1 (175), University 2 (158), and University 3 (117).

Research Instrument

The questionnaire was divided into two parts: 1) Demographic information with checklist items; 2) 48 five-point Likert scale items of the factors influencing the students' behavioral intention (Bashir & Madhavaiah, 2014; Chang et al., 2012; Mikalef et al., 2016; Mtebe & Raisamo, 2014; Vululleh, 2018). The IOC (Index of item-objective congruence) test was conducted to confirm the validity of the instruments that all the items are qualified for the content validity at 1. After the questionnaire was back translated, a pretest was performed with 30 non-samples of undergraduate students majoring in English. Cronbach alpha Coefficient was 0.918.

Data Analysis

Mean, Standard Deviation, Frequency, and Percentages were run. Confirmatory Factor Analysis (CFA) was run to identify the factors influencing behavioral intentions to participate in hybrid education. Subsequently, Structural Equation Modeling (SEM) was employed to ascertain the causal relationships between factors.

Findings and Discussion

Demographic Information

The majority of the respondents were females (87.1%), and the rest were male (12.9%). The respondents were from CDU (38.9%) SCU (35.1 %), and SNU (26%), freshman (26.7%), sophomore (33.5%), junior (16.9%), and

senior (22.9%). Finally, aged 18-19 (40.9%), 20-21 (43.3%), 22-23 (14.4%), and 24-25 (1.3%).

Confirmatory Factor Analysis (CFA)

In Table 1, Confirmatory factor analysis (CFA) was run to evaluate the measurement model with the significance of each item's factor loading and acceptable values showed the goodness of fit (Brown, 2015). The goodness of fit indices for the Confirmatory Factor Analysis (CFA) demonstrated that the model fits the data well, with all indexes meeting or exceeding standard thresholds. Further, the discriminant validity assessment showcased the Average Variance Extracted (AVE) square roots for the variables, ranging from 0.729 to 0.816, with correlations between the constructs displaying significant values.

Table 1

Factor Loading, AVE, and CR

Observed Variable	No. of Item	Factor Loading	Cronbach's Alpha	CR	AVE
PEOU	7	0.714-0.821	0.908	0.909	0.589
PU	6	0.649-0.863	0.881	0.883	0.559
PC	7	0.744-0.874	0.917	0.917	0.614
EE	7	0.79-0.845	0.933	0.933	0.666
SI	7	0.685-0.829	0.894	0.896	0.552
ATU	7	0.641-0.806	0.890	0.888	0.532
BI	7	0.741-0.845	0.931	0.932	0.662

The Goodness of Fit indices provide insight into the model's adequacy. Specifically, the Absolute Fit Indices, including the CMIN/DF, indicate an exceptional fit with a post-adjustment value of 1.386, well beneath the accepted threshold of 3.00 (Hair et al., 2010). Furthermore, the GFI and AGFI values were 0.883 and 0.870, respectively, both well above the accepted threshold of 0.8 Additionally, the model boasts a favorable RMSEA value of 0.029, substantially below the recommended 0.05 limit (Browne& Cudeck, 1993). As for the Incremental Fit Indices, the CFI stands at an impressive 0.971, which was over the exceptional threshold of 0.90 (Hair et al., 2010); while the NFI, at 0.904, which is well above the threshold 0.9, further accentuates the model's suitability.

Zait and Bertea (2014) emphasized that discriminant validity ensures measurements within a construct correlate more strongly with each other than with measures of other constructs. The diagonal of the discriminant value summary contains the square roots of each variable's Average Variance Extracted (AVE). A latent variable's AVE square root should notably surpass its correlation with other constructs (Fornell & Larcker, 1981). Ideally, the AVE threshold should be above 0.500. Schmitt & Stults (1986) posited an AVE root value equivalent to two, with deviations below 1.000. Liu et al. (2020) suggested the AVE square root should exceed any two latent variables' coefficient, with the latter being below 0.800. Given the data presented in Table 2, this study successfully established its discriminant validity.

Table 2

Discriminant Validity

Correlation	PEOU	PU	PC	EE	SI	ATU	BI
PEOU	.767						
PU	.439**	.748					
PC	.504**	.408**	.784				
EE	.465**	.470**	.425**	.816			
SI	.534**	.579**	.537**	.600**	0.743		
ATU	.460**	.529**	.474**	.281**	.390**	0.729	
BI	.361**	.423**	.378**	.368**	.446**	.681**	0.814

In conclusion, the CFA results confirm the validity and reliability of the measurement model, laying a firm foundation for subsequent hypothesis testing and further research.

Structural Equation Model (SEM)

As in Table 3, Structural Equation Modeling (SEM) was performed after conducting confirmatory factor analysis to examine the connections between various variables that impact the behavioral intention of undergraduate English majors to participate in hybrid education. This model encompasses both structural equations to delineate causal relationships and graphical illustrations to elucidate hypotheses. Within the purview of this research, the SEM matrix highlighted seven pivotal latent variables, which were subsequently refined using AMOS version 26, as depicted in Figure 2. Table 4 presents the refined results derived from the AMOS statistical software, incorporating metrics such as CMIN/DF, GFI, AGFI, CFI, TLI,

and RMSEA. Upon assessment, all goodness-of-fit indicators for SEM verification were found to be satisfactory, as evidenced in Table 3.

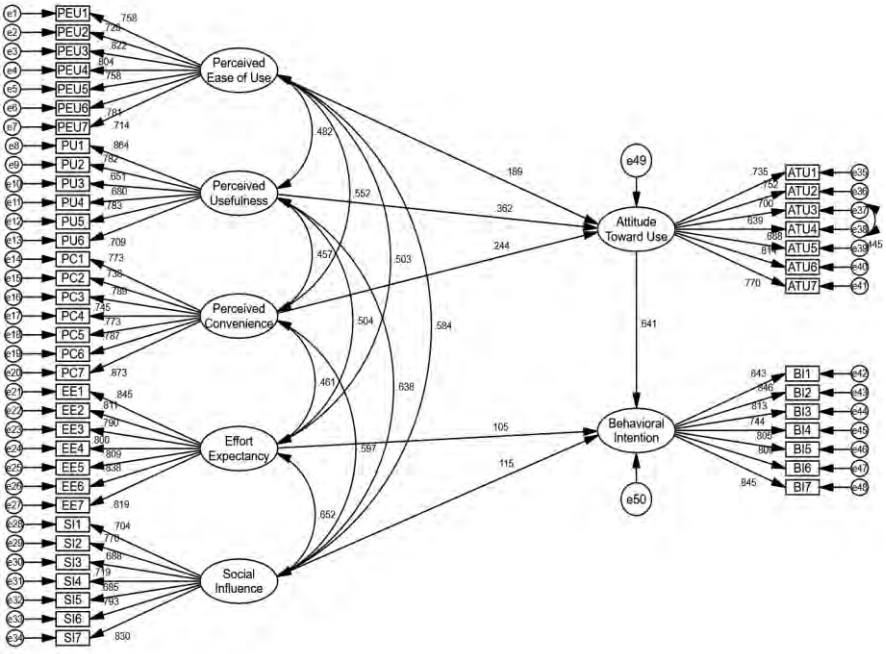
Table 3

The Goodness of Fit Results of SEM

Categories	GOF Indices	Criteria	Source	Before Adjustment	After Adjustment
Absolute Fit Indices	CMIN/DF	<3.00	Brown (2015)	1.478	1.400
	GFI	>0.80	Wijanto (2008)	0.875	0.882
	AGFI	>0.80	Byrne (2016)	0.862	0.870
	RMSEA	<0.05	Kline (2016)	0.033	0.030
Incremental Fit Indices	CFI	>0.90	Hair et al. (2010)	0.964	0.970
	TLI	>0.90	Kline (2016)	0.962	0.968

Figure 2

The Structural Matrix After the Adjustment



Research Hypotheses Examining

The research matrix was constructed to assess the statistical significance of each variable based on regression weights and R-squared variances. Figure 3 and Table 4 present the results of these calculations. Notably, the analysis revealed that Perceived Usefulness (PU) exhibited the most substantial influence on Behavioral Intention (BI), as evidenced by a standardized path coefficient (β) of 0.232 (t-value = 6.649***). In descending order, other relationships were observed as follows: PC on BI with a β of 0.156 (t-value = 4.408***), PEOU on BI with a β of 0.121 (t-value = 3.373***), SI on BI with a β of 0.115 (t-value = 2.087*), EE on BI with a β of 0.105 (t-value = 2.074*). It is noteworthy that all hypotheses were substantiated by statistical significance, as indicated by p-values below 0.05.

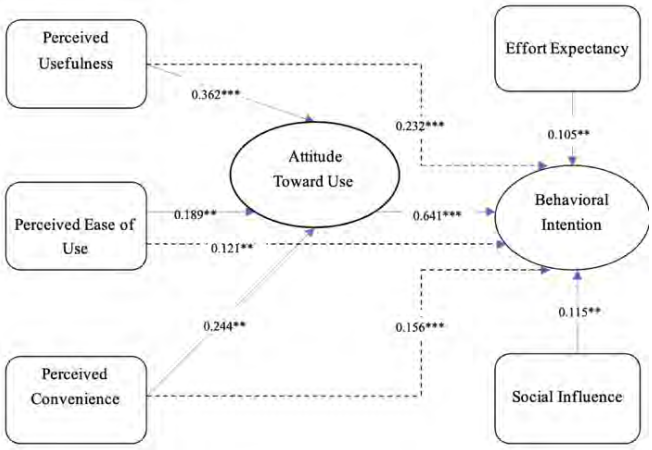
Table 4

Research Hypotheses Test Results

	Hypotheses		Standardized Path Coefficient (p)	T-Value	Test Results
Hl	PEOU ATU	BI	0.121	3.373***	Verified
H2	PU ATU	BI	0.232	6.649***	Verified
H3	PC ATU	BI	0.156	4.408***	Verified
H4	EE	BI	0.105	2.074*	Verified
H5	SI	BI	0.115	2.087*	Verified

Figure 3

Path Diagram Consequences



Based on the results presented in Figure 3 and Table 5, we elucidate the following extensions:

The study supports Hypothesis 1, suggesting an indirect effect of perceived ease of use on behavioral intention, mediated by attitude towards use. A standardized coefficient (β) of 0.121 ranks it as the third most influential variable. This implies that students' perceptions of ease in using hybrid education positively influence their attitudes towards it. This aligns with Sun & Gao (2020) and Vululleh (2018), emphasizing the paramount importance of perceived ease of use in shaping students' intentions towards learning systems.

Hypothesis 2 posits an indirect effect of perceived usefulness on behavioral intention, also mediated by attitude towards use. This was confirmed with a β value of 0.232, marking perceived usefulness as the study's most influential latent variable. Previous works, such as Cabero-Almenara et al. (2019) and Jiang et al. (2021), have similarly highlighted the profound impact of perceived usefulness on students' intentions to adopt technology in learning.

The study also validates Hypothesis 3, associating perceived convenience with behavioral intention, using attitude towards use as a mediator. The derived β value of 0.156 positions perceived convenience as the second dominant latent variable. Evidently, students finding hybrid learning convenient across parameters like time, place, and execution are more inclined to accept and engage actively with this educational model. Such observations resonate with Chang et al. (2012) and Teo et al. (2019), who

underscored the significance of perceived convenience in students' decisions to embrace hybrid learning.

Hypothesis 4 establishes a meaningful relationship between effort expectancy and behavioral intention, represented by a β value of 0.105, appeared to be congruent with Bardakcı (2019), Mahande & Malago (2019), and Ogunsola & Olojo (2021). It was proposed that a high effort expectancy, indicating intuitive and seamless learning platform experiences, would likely inspire English major undergraduates to utilize these platforms comprehensively.

Lastly, Hypothesis 5 was affirmed, signifying a noteworthy relationship between social influence and behavioral intention. A β of 0.115 classifies it as the fourth dominant variable. This insinuates that the extent of social influence experienced by students positively impacts their intention to engage in hybrid education. This observation is bolstered by studies from Qin et al. (2019), Mahande & Malago (2019), and Nuttavuthisit & Thøgersen (2017), all of whom highlighted the crucial role of social influence in guiding students' intentions within a learning system.

Conclusion and implication

This behavioral intention model of undergraduate students majoring in English to participate in hybrid education model in Chengdu universities revealed a hierarchy of influential factors mediated by ATU. PU emerged as the most significant predictor of BI, aligning with prior research that links perceived utility with positive technological adoption attitudes (Abraham et al., 2020; Tambun et al., 2020). The positive attitudes towards hybrid education systems stemmed from the belief that such technologies enhance academic and professional performance (Bahjat, 2018), which is supported by the findings that students with favorable perceptions of hybrid education's utility experience enriched learning (Huang et al., 2020; Sukendro et al., 2020).

PC was the second most significant factor, with students valuing the flexibility of accessing educational materials anytime, anywhere, contributing to a favorable attitude towards hybrid learning (Beri & Sharma, 2019; Malik et al., 2021). This convenience also translated to a higher likelihood of adoption and continued use, facilitating effective engagement and collaboration (Mailizar et al., 2021).

The third most significant factor, PEOU, which related to the user-friendliness of the educational platforms, where simplicity in operation allowed students to concentrate on learning rather than on navigating the system (Bao, 2020; Nagy, 2018). English majors, who require proficiency in diverse language skills, benefit particularly from ease of use, as it allowed for

seamless integration of technology into their learning process without hindrance (Ebadi & Raygan, 2023).

SI was identified as the fourth influential factor on BI. Although social factors can drive the adoption of hybrid learning, the individual decision to engage seems to be less dependent on peer persuasion for this group, possibly due to a collective shift towards hybrid learning prompted by the pandemic (Mahande & Malago, 2019; Nuttavuthisit & Thøgersen, 2017).

Lastly, EE was found to be the least determinant, suggesting that when students perceive less difficulty in using hybrid learning technologies, their intention to engage increases (Anabel & Simanjuntak, 2022). English majors, who are generally eager to improve their language skills, find hybrid learning environments conducive to their goals, even if the technologies employed are not particularly advanced (Chen & Foung, 2020; Russel & Murphy, 2020).

In summary, the research indicates that PU, PC, and PEU are primary motivators for English majors to engage in hybrid education, mediated by a positive attitude towards use. While SI and EE also contribute to BI, they do so to a lesser extent. These findings suggest that for effective implementation of hybrid learning, educational institutions should focus on enhancing the perceived usefulness, convenience, and ease of use of their technological systems.

Recommendations and Limitations

Recommendations

This study examined the factors influencing the behavioral intention of undergraduates majoring in English in Chengdu universities to participate in hybrid education. As policy makers and educators design hybrid courses integrating the nuances of English major attributes with the technicalities of hybrid systems, this model can be used to integrate and amplify the educational quality and practicality of hybrid instruction for English undergraduates. Additionally, instructors and educators can foster a conducive learning environment, tailoring instruction to specific academic needs, promoting autonomous learning, and driving students to invest more effort into their academic pursuits in studying English through hybrid education concerning all the factors influencing effectiveness in teaching and learning.

Research Limitations

Notably, the study is limited to English major undergraduates from public universities in Chengdu, China, potentially excluding diverse student perspectives from other academic disciplines, regions, or institutions. Such constraints call for a need for further research to delve into the long-term effects of these factors on hybrid education and to decipher the intricate interplay between determinants of student attitudes across different socio-economic and cultural landscapes. Addressing these gaps will bolster a more comprehensive understanding of student engagement in hybrid education.

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References

Abraham, J., Septian, D. L., Prayoga, T., & Ruman, Y. S. (2020). Predictive factors of attitude towards online disruptive advertising. In R. Leon (Ed.), *Strategies for business sustainability in a collaborative economy* (pp. 102-121). IGI Global. https://doi.org/10.4018/978-1-7998-4543-0.ch006

Al-Hamad, M., Mbaidin, H., AlHamad, A., Alshurideh, M., Kurdi, B., & Al-Hamad, N. (2021). Investigating students' behavioral intention to use mobile learning in higher education in UAE during the Coronavirus-19 pandemic. *International Journal of Data and Network Science, 5*(3), 321-330.

Al-Sharafi, M. A., Al-Emran, M., Arpaci, I., Marques, G., Namoun, A., & Iahad, N. A. (2022). Examining the impact of psychological, social, and quality factors on the continuous intention to use virtual meeting platforms during and beyond the COVID-19 pandemic: A hybrid SEM-ANN approach. *International Journal of Human-Computer Interaction. Advance online publication*. https://doi.org/10.1080/10447318.2022.2028953

Almaiah, M. A., Alamri, M. M., & Al-Rahmi, W. (2019). Applying the UTAUT model to explain the students' acceptance of mobile learning system in higher education. *IEEE Access, 7*, 174673-174686. https://doi.org/10.1109/ACCESS.2019.2954181

Anabel, T. W. V., & Simanjuntak, D. C. (2022). Obtaining preferences from a hybrid learning system to promote English-speaking ability through focus group discussion. *Journal of Languages and Language Teaching, 10*(2), 118-133.

Bahjat, A. (2018). Attitudes towards using mobile applications in teaching mathematics in open learning systems. *International Journal of E-Learning & Distance Education, 33*(1), 2-16.

Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies, 2*(2), 113-115. https://doi.org/10.1002/hbe2.191

Bardakci, S. (2019). Exploring High School Students' Educational Use of YouTube. *International Review of Research in Open and Distributed Learning, 20*(2), 260-278.

Bashir, I., & Madhavaiah, C. (2015). Consumer attitude and behavioral intention towards Internet banking adoption in India. *Journal of Indian Business Research, 7*(1), 67-102.

Bazelais, P., Doleck, T., & Lemay, D. J. (2018). Investigating the predictive power of TAM: A case study of CEGEP students' intentions to use online learning technologies. *Education and Information Technologies, 23*(1), 93-111. https://doi.org/10.1007/s10639-017-9587-0

Beri, N., & Sharma, L. (2019). Teachers' attitude towards integrating ICT in teacher education. *International Journal of Innovative Technology and Exploring Engineering, 8*(8), 285-295.

Brown, T. (2015). Confirmatory factor analysis for applied research. The Guilford Press.

Buabeng-Andoh, C. (2021). Exploring University students' intention to use mobile learning: A research model approach. *Education and information technologies, 26*(1), 241-256.

Byrne, B. M. (2016). *Structural Equation Modelling with AMOS: Basic Concepts, Applications, and Programming* (3rd ed.). Routledge.

Cabero-Almenara, J., Fernández-Batanero, J. M., & Barroso-Osuna, J. (2019). Adoption of augmented reality technology by university students. *Heliyon, 5*(5), e01597. https://doi.org/10.1016/j.heliyon.2019.e01597

Chang, C., Yan, C., & Tseng, J. (2012). Perceived convenience in an extended technology acceptance model: Mobile technology and English learning for college students. *Australasian Journal of Educational Technology, 28*(5), 809-826. https://doi.org/10.14742/ajet.802

Chen, J., & Foung, D. (2020). A motivational story in Hong Kong: Generating goals for language learners and blended learning designers from a mixed-method learning analytics approach in English for academic purposes. *Technology and the Psychology of Second Language Learners and Users*, 491-516.

Dajani, D., & Hegleh, A. S. A. (2019). Behavior intention of animation usage among university students. *Heliyon, 5*(10), Article e02536. https://doi.org/10.1016/j.heliyon.2019.e02536

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340.

Dewi, C. K., Mohaidin, Z., & Murshid, M. A. (2020). Determinants of online purchase intention: A PLS-SEM approach: Evidence from Indonesia. *Journal of Asia Business Studies, 14*(3), 281-306. https://doi.org/10.1108/JABS-02-2019-0067

Ebadi, S., & Raygan, A. (2023). Investigating the facilitating conditions, perceived ease of use, and usefulness of mobile-assisted language learning. *Smart Learning Environments, 10*(1), Article 1. https://doi.org/10.1186/s40561-022-00199-4

Eksail, F. A. A., & Afari, E. (2020). Factors affecting trainee teachers' intention to use technology: A structural equation modeling approach. *Education and Information Technologies, 25*(4), 2681-2697. https://doi.org/10.1007/s10639-019-10054-0

Elnagar, A., Afyouni, I., Shahin, I., Nassif, A. B., & Salloum, S. A. (2021).

The empirical study of e-learning post-acceptance after the spread of COVID-19: A multi-analytical approach-based hybrid SEM-ANN. *arXiv preprint arXiv:2112.01293*. https://arxiv.org/abs/2112.01293

Fagan, M. H. (2019). Factors influencing student acceptance of mobile learning in higher education. *Computers in the Schools, 36*(2), 105-121. https://doi.org/10.1080/07380569.2019.1584873

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 24*(4), 337-346. https://doi.org/10.1177/002224378101800104

Gagnon, K., Young, B., Bachman, T., Longbottom, T., Severin, R., & Walker, M. J. (2020). Doctor of physical therapy education in a hybrid learning environment: reimagining the possibilities and navigating a "new normal". *Physical Therapy, 100*(8), 1268-1277. https://doi.org/10.1093/ptj/pzaa120

Godwin-Jones, R. (2020). Building the porous classroom: An expanded model for blended language learning. *Language Learning & Technology, 24*(1), 1-18. (Assuming this is the correct citation as details were not provided)

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2010). *Multivariate data analysis* (6th ed.). Prentice Hall.

Heilporn, G., Lakhal, S., & Bélisle, M. (2021). An examination of teachers' strategies to foster student engagement in blended learning in higher education. *International Journal of Educational Technology in Higher Education, 18*, Article 1. https://doi.org/10.1186/s41239-020-00217-x

Hua, X., & Zhao, J. (2021). The trend and path of the construction of blended top-ranking curriculum in colleges and universities. In *ICERI2021 Proceedings* (pp. 4872-4880).

Huang, H., & Liaw, S. (2018). An Analysis of Learners' Intentions Toward Virtual Reality Learning Based on Constructivist and Technology Acceptance Approaches. *International Review of Research in Open and Distributed Learning, 19*(1), 91-115.

Huang, R., Liu, D. J., Tlili, A., Yang, J. F., & Wang, H. H. (2020). The Chinese experience in maintaining undisrupted learning in COVID-19 outbreak. Handbook on Facilitating Flexible Learning During Educational Disruption, 46, 20. https://doi.org/10.1186/s40561-020-00125-8

Hussein, L. A., & Hilmi, M. F. (2021). The influence of convenience on the

usage of learning management system. *Electronic Journal of e-Learning, 19*(6), 504-515.

Hwang, A. (2018). Online and hybrid learning. *Journal of Management Education, 42*(4), 557-563. https://doi.org/10.1177/1052562918765475

Jiang, M. Y. C., Jong, M. S. Y., Lau, W. W. F., Meng, Y. L., Chai, C. S., & Chen, M. (2021). Validating the general extended technology acceptance model for e-learning: Evidence from an online English as a foreign language course amid COVID-19. *Frontiers in Psychology, 12*, 1-14. https://doi.org/10.3389/fpsyg.2021.671615

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). The Guilford Press.

Kumar, R., Karabenick, S. A., Warnke, J. H., Hany, S., & Seay, N. (2019). Culturally inclusive and responsive curricular learning environments (CIRCLEs): An exploratory sequential mixed-methods approach. *Contemporary Educational Psychology, 57*, 87-105. https://doi.org/10.1016/j.cedpsych.2019.02.003

Liu, H., Li, S., & Xiao, Y. (2021). Exploration and practice of online and offline mixed teaching mode based on PBL in basic computer courses. In *2021 International Symposium on Advances in Informatics, Electronics and Education (ISAIEE)* (pp. 101-105). https://doi.org/10.1109/ISAIEE55071.2021.00032

Mahande, R. D., & Malago, J. D. (2019). An e-learning acceptance evaluation through UTAUT model in a postgraduate program. *Journal of Educators Online, 16*(2), Article n2.

Mailizar, M., Burg, D., & Maulina, S. (2021). Examining university students' behavioural intention to use e-learning during the COVID-19 pandemic: An extended TAM model. *Education and Information Technologies, 26*(6), 7057-7077.

Malik, R., Sharma, A., Trivedi, S., & Mishra, R. (2021). Adoption of chatbots for learning among university students: Role of perceived convenience and enhanced performance. *International Journal of Emerging Technologies in Learning (iJET), 16*(18). https://doi.org/10.3991/ijet.v16i18.24315

Mikalef, P., Pappas, I. O., & Giannakos, M. (2016). An integrative adoption model of video-based learning. *The International Journal of Information and Learning Technology, 33*(4), 219-235.

Mokhtar, S. A., Katan, H., & Hidayat-ur-Rehman, I. (2018). Instructors' behavioral intention to use learning management system: An integrated

TAM perspective. *TEM Journal, 7*(3), 513.

Mtebe, J., & Raisamo, R. (2014). Investigating students' behavioral intention to adopt and use mobile learning in higher education in East Africa. *International Journal of Education and Development using ICT, 10*(3), 5-20.

Nagy, J. (2018). Evaluation of online video usage and learning satisfaction: An extension of the technology acceptance model. *International Review of Research in Open and Distributed Learning, 19*(1), 160-185.

Nuttavuthisit, K., & Thøgersen, J. (2017). The importance of consumer trust for the emergence of a market for green products: The case of organic food. *Journal of Business Ethics, 140*(2), 323-337. https://doi.org/10.1007/s10551-015-2690-5

Ogunsola, K., & Olojo, T. P. (2021). Towards connected governance: Citizens' use of Web 2.0 in Nigeria. In *Web 2.0 and Cloud Technologies for Implementing Connected Government* (pp. 68-94). IGI Global.

Pitafi, A. H., Kanwal, S., & Khan, A. N. (2020). Effects of perceived ease of use on SNSs-addiction through psychological dependence, habit: The moderating role of perceived usefulness. *International Journal of Business Information Systems, 33*(3), 383-407.

Qin, C., Liu, Y., Mou, J., & Chen, J. (2019). User adoption of a hybrid social tagging approach in an online knowledge community. *Aslib Journal of Information Management, 71*(2), 155-175. https://doi.org/10.1108/AJIM-09-2018-0212

Rui-Hsin, K., & Lin, C. (2018). The usage intention of e-learning for police education and training. *Policing: An International Journal of Police Strategies & Management, 41*(1), 98-112.

Russell, V., & Murphy-Judy, K. (2020). *Teaching language online: A guide for designing, developing, and delivering online, blended, and flipped language courses*. Routledge.

Salloum, S. A., Alhamad, A. Q. M., Al-Emran, M., Monem, A. A., & Shaalan, K. (2019). Exploring students' acceptance of e-learning through the development of a comprehensive technology acceptance model. *IEEE Access*, *7*, 128445–128462. https://doi.org/10.1109/ACCESS.2019.2954181

Sanpanich, N. (2021). Investigating factors affecting students' attitudes toward hybrid learning. *rEFLections, 28*(2), 208-227.

Schmitt, N., & Stults, D. M. (1986). Methodology review: Analysis of multitrait-multimethod matrices. *Applied Psychological Measurement, 10*(1), 1-22.

Schulten, K. (2020). Coronavirus resources: Teaching, learning, and thinking critically. *The New York Times.* https://www.nytimes.com/2020/03/11/learning/coronavirus-resources-teaching-learning-and-thinking-critically.html

Shao, C. (2020). An empirical study on the identification of driving factors of satisfaction with online learning based on TAM. In *5th International Conference on Economics, Management, Law and Education (EMLE 2019).*

Siddiqui, S., Soomro, N. N., & Thomas, M. (2021). Is hybrid learning a source of satisfaction or distraction? An experimental study conducted in the light of Vroom's expectancy elements. In *34th Annual Conference of The Asian Association of Open Universities (AAOU 2021)*, Colombo, Sri Lanka (p. 71).

Sousa, I. V. (2021). Students' intention to use gamification and virtual reality in the hybrid learning process: An empirical study in the training of technical professionals (Doctoral dissertation). Mestrado em Sistemas de Informação e Gestão do Conhecimento. https://repositorio.fumec.br/bitstream/handle/123456789/916/Isadora_Souza_mes_sgci_2021.pdf?sequence=1&isAllowed=y

Sukendro, S., Habibi, A., Khaeruddin, K., Indrayana, B., Syahruddin, S., Makadada, F. A., & Hakim, H. (2020). Using an extended technology acceptance model to understand students' use of e-learning during COVID-19: Indonesian sport science education context. *Heliyon, 6*(11), e05410. https://doi.org/10.1016/j.heliyon.2020.e05410

Sun, Y., & Gao, F. (2020). An investigation of the influence of intrinsic motivation on students' intention to use mobile devices in language learning. *Educational Technology Research and Development, 68*(3), 1181-1198. https://doi.org/10.1007/s11423-020-09744-3

Tahar, A., Riyadh, H. A., Sofyani, H., & Purnomo, W. E. (2020). Perceived ease of use, perceived usefulness, perceived security, and intention to use e-filing: The role of technology readiness. *The Journal of Asian Finance, Economics and Business, 7*(9), 537-547.

Tambun, S., Sitorus, R. R., & Pramudya, T. A. (2020). Pengaruh Technology Acceptance Model dan Digital taxation terhadap Kepatuhan Wajib Pajak dengan Pemahaman Internet sebagai Variabel Moderating. *Balance Vocation Accounting Journal, 4*(1), 1-12.

Teo, T., Zhou, M., Fan, A. C. W., & Huang, F. (2019). Factors that

influence university students' intention to use Moodle: A study in Macau. *Educational Technology Research and Development, 67*(3), 749-766.

Tobarra, L., Robles-Gomez, A., Pastor, R., Hernandez, R., Duque, A., & Cano, J. (2020). Students' acceptance and tracking of a new container-based virtual laboratory. *Applied Sciences, 10*(3), 1091.

Venkatesh, V., Morris, M. G., Hall, M., Davis, G. B., Davis, F. D., & Walton, S. M. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478.

Vululleh, P. (2018). Determinants of students' e-learning acceptance in developing countries: An approach based on structural equation modeling (SEM). *International Journal of Education and Development Using Information and Communication Technology, 14*(1), 141-151.

Wang, K. (2020). Research on the Significance, Characteristics and Path of China's Construction of First-Class Undergraduate Education. 2020 4th International Conference on Advancement of the Theory and Practices in Education (ICATPE 2020). (pp. 93-98). https://doi.org/10.25236/icatpe.2020.020

Weilage, C., & Stumpfegger, E. (2022). Technology acceptance by university lecturers: A reflection on the future of online and hybrid teaching. *On The Horizon-The Strategic Planning Resource for Education Professionals, 30*(2), 112-121.

Williamson, K. M., & Muckle, J. (2018). Students' perception of technology use in nursing education. *CIN: Computers, Informatics, Nursing, 36*(2), 70-76.

Xiong, Y., Ling, Q., & Li, X. (2021). Ubiquitous e-teaching and e-learning: China's massive adoption of online education and launching MOOCs internationally during the COVID-19 outbreak. *Wireless Communications and Mobile Computing, 2021*.

Yakubu, M. N., & Dasuki, S. I. (2019). Factors affecting the adoption of e-learning technologies among higher education students in Nigeria: A structural equation modelling approach. *Information Development, 35*(3), 492-502.

Zait, A., & Bertea, P. E. (2014). Financial Literacy–Conceptual Definition and Proposed Approach for a Measurement Instrument. *The Journal of Accounting and Management*, (3), 37-42.

Zhang, H., Wong, R. K., & Chu, V. W. (2020). Hybrid learning with teacher-student knowledge distillation for recommenders. In *2020 International Conference on Data Mining Workshops (ICDMW)*, 227-235.

Zhang, W., & Tang, J. (2021). Review of teachers' technological pedagogical content knowledge (TPACK) in China. *Creative Education, 12*(7), 1726-1743.

Zhang, Z., Cao, T., Shu, J., & Liu, H. (2022). Identifying key factors affecting college students' adoption of the e-learning system in mandatory blended learning environments. *Interactive Learning Environments, 30*(8), 1388-1401.

Zhou, L., Wu, S., Zhou, M., & Li, F. (2020). 'School's out, but class' on', the largest online education in the world today: Taking China's practical exploration during the COVID-19 epidemic prevention and control as an example. *Best Evidence in Chinese Education, 4*(2), 501-519.

Zhu, X., & Liu, J. (2020). Education in and after Covid-19: Immediate responses and long-term visions. *Postdigital Science and Education, 2*(3), 695-699.