Factors Influencing Visual Communication Design Students' Satisfaction Toward Tencent Meeting of Online Class at a Public University in Chengdu, China

Zhiqiang Mu*, Thanawan Phongsatha

Abstract

Purpose: The purpose of this paper is to examine the factors influencing visual communication design students' satisfaction toward Tencent Meeting of online class at a public university in Chengdu, China. **Research design, data and methodology:** The research methodology used in this study was quantitative research and questionnaire to collect data. Based on the review of prior literature, a model of teacher self-efficacy, student self-regulation, student engagement, and course design/structure pairs with visual communication design students' satisfaction with using Tencent Meetings for online classes was designed. Sixty valid questionnaires were collected from third-year undergraduate students majoring in visual communication design at a public university in Chengdu. Multiple linear regression was used to analyze the data. Results: The results of the study showed that students' participation in course design/structure was statistically significant on students' Tencent conferencing for online classroom satisfaction, p < 0.001. furthermore, the test also found that Teachers' self-efficacy (β = 0.055, p = 0.487), and student self-regulation (β = 0.056, p = 0.492) did not significantly influence Students' satisfaction towards online class using Tencent meeting. **Conclusions:** The results of the study showed that most of the visual communication design students were satisfied with the use of Tencent meeting for the online class, and the students could learn, communicate, and collaborate well through this platform, which provided a satisfactory learning experience for the students. Secondly reasonable course design/structure and active student participation are the key factors for student satisfaction, emphasizing the important impact of course design and student participation on online courses, which can be improved through improvements in these areas.

Keywords : Course design, Online Class, Student Self-Engagement, Students' Satisfaction, Tencent Meeting

1. Introduction

With the rapid development of information and communication technology, technology began to be used in education, and many researchers started to explore the teaching and learning research combining technology and education, and online teaching has become relatively popular research in recent years. During the COVID-19 pandemic, global higher education faced significant challenges, and offline teaching could no longer meet teaching needs, so online teaching was widely promoted (Tang et al., 2021). Chinese universities use online

1　*Zhiqiang Mu, Assumption University, Thailand. Email: 184622587@qq.com
2　Thanawan Phongsatha, Ph.D., Program Director, Assumption University, Thailand. Email: thanawanphn@au.edu

platforms such as MOOC, Zoom, and Tencent Meeting for asynchronous and synchronous online teaching and learning (Wang et al., 2021). Since design courses in colleges and universities need more teacher-student interaction, teaching video presentation, and sharing of design works in teaching, many teachers and students choose to use Tencent Meeting for online teaching.

Researchers have conducted numerous studies on the factors that affect student satisfaction in online classes, setting many influencing factors, including technology, teachers, and students. However, there is less research on the impact of using Tencent meetings for online teaching and learning on student satisfaction among visual communication design students in Chinese universities. Therefore, this study selected a public university in Chengdu, Sichuan, China, where visual communication design students were taught online using Tencent meetings in the context of COVID-19 pandemic, and identified four variables that had an impact on the online classroom (teacher self-efficacy, student self-regulation, student engagement, and course design/structure).

The purpose of this paper is to examine the factors Influencing visual communication design students' satisfaction toward Tencent Meeting of online class at a public university in Chengdu, China. The four factors, namely, teacher self-efficacy, student self-regulation, student participation, and course design/structure, are hypothesized to influence students' satisfaction with using Tencent Meetings for online classroom. By examining this issue, specific insights are provided for influencing students' satisfaction with using Tencent Meetings for online classroom in Chengdu, China, a visual communication design program. The results of the survey would help education departments, teachers, and students to be able to target online classrooms for design majors in terms of course design, delivery process, student participation, and effective management to improve students' educational effectiveness.

1.1 Research Questions

What are factors influence visual communication design students' satisfaction towards Tencent Meeting of online class at a public university in Chengdu, China?

1.2 Research Objectives

Based on the research questions, the objective of this study is as follows.

To examine the factors influencing the visual communication design students' satisfaction towards Tencent Meeting of online class at a public university in Chengdu, China.

2. Literature Review

2.1 Tencent Meeting

Tencent Meeting is a video conferencing application for free use by Chinese users, with features that support sharing, interaction, and collaboration (Huang et al., 2021; Sayibu et al., 2021). During COVID-19, Tencent Meeting was widely used in teaching and learning. During the new Crown pandemic, visual communication design students at Chengdu University also used Tencent Meeting for online learning (Lan et al., 2022).

2.2 Teacher's Self-Efficacy

Teacher self-efficacy is the instructors' the motivation that guides students to take necessary decisions while teaching in a synchronous virtual mode (Maini et al., 2021). The results of a study showed a significant correlation between the level of self-efficacy and teachers' instructional practices, learners' motivation and achievement (Alibakhshi et al., 2020). One study found that teachers with higher self-efficacy were more likely to provide positive instructional support, have more confidence in their students' learning, and were effectively motivated with better student achievement (Mojavezi & Tamiz, 2012). These findings contribute to faculty professional development and teaching practice.

2.3 Student self-regulation

Student self-regulation is a learning process in which participants are meta-cognitively, motivationally, and behaviorally active (Eom & Ashill, 2016). Self-regulation was found to be a good predictor of student satisfaction, and having the ability to self-regulate enhances students' satisfaction with online education (Hamdan et al., 2021). Another study found that the correlation between self-regulation and user satisfaction was not significant, and that student satisfaction is most strongly influenced by factors such as course design, instructor quality, and effective dialog (Eom & Ashill, 2016). Landrum (2020) also found no significant effect of student self-regulation on student satisfaction. In response to these inconsistent results, this study examined self-regulation as an influential factor in predicting satisfaction.

2.4 Student Engagement

Student engagement is defined as the level of interest demonstrated by students, how they interact with others in the course, and their motivation to learn about the topics (Gray & DiLoreto, 2016). A study by She et al. (2021) found

that student engagement had a significant effect on satisfaction with online learning, and that students were more likely to experience high levels of satisfaction when they were actively engaged in interacting and participating in learning activities.

2.5 Course Design/Structure

Course design/ structure is defined as the planning and design of the course structure and the process, engagement, interaction, and evaluation aspects of the course (Eom & Ashill, 2016). One study found that student satisfaction in asynchronous online courses was significantly and positively influenced by the course structure, so in order to optimize the design of an online course, it is advisable to ensure that learning objectives are clearly communicated, and that comprehensive guidance is provided on the tasks and activities to be accomplished in the classroom (Kim & Kim, 2021).

2.6 Students' Satisfaction towards Online Class using Tencent Meeting

Students' satisfaction towards online class using Tencent meeting indicates learners' feelings and attitudes toward the learning process, or the perceived level of fulfilment attached to one's desire to learn, caused by the learning experiences in online classes (She et al., 2021). In an online class, active teacher participation, questioning, and real-time feedback are critical to student satisfaction, as these factors help to reflect student presence (Gray & DiLoreto, 2016).

Based on the literature review, the conceptual framework has been developed as shown in figure 1.
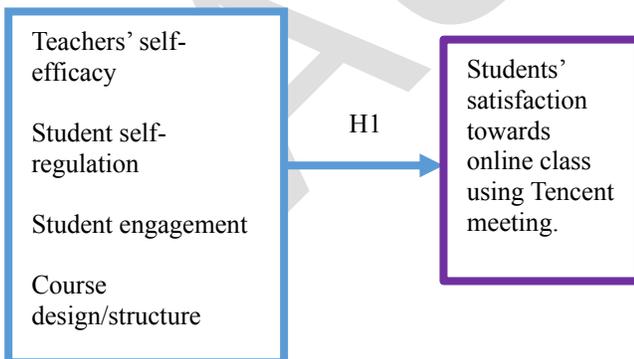

Figure 1: Conceptual framework

2.7 Hypothesis

With the support from the previous research and related literature, the hypothesis of the research has been stated as follows.

H_0: Teachers' self-efficacy, student self-regulation, student engagement, and course design/structure do not significantly influence students' satisfaction towards online classes using Tencent meeting.

Ha: Teachers' self-efficacy, student self-regulation, student engagement, and course design/structure significantly influence students' satisfaction towards online classes using Tencent meeting.

3. Research Methods and Materials

3.1 Research Design

The purpose of this study was to examine the factors influencing visual communication design students' satisfaction towards Tencent Meeting of online class at a public university in Chengdu, China. The research is quantitative research applying the questionnaire as the research instrument. The descriptive and the inferential statistics were applied for data analysis.

Based on the literature review, the research covered four independent variables, which are teacher self-efficacy, student self-regulation, student engagement, and course design/structure, and one dependent variable, which is students' satisfaction towards Tencent meeting in an online course.

The 24 questionnaire items have been adopted from the previous research. The population of this study was 60 third-year undergraduate students majoring in visual communication design in the College of Fine Arts and Design at a public university in Chengdu. The census sampling strategy has been applied to recruit the samples.

3.2 Population and Sample

3.2.1 Population Characteristics

Third year undergraduate students of visual communication design at the College of Fine Arts and Design of a public university in Chengdu, China. These students had four courses delivered online through the Tencent conferencing platform during the first semester of their third year. Thus, the number of the population of this study is 60.

3.2.2 Sample Size

Sixty third-year undergraduate students of visual communication design at the College of Fine Arts and Design of a public university in Chengdu, China, were selected as the samples.

3.2.3 Sampling Technique

The census sampling technique has been applied to the research since the population and the samples were from the same group.

3.3 Research Instruments

The research instrument was a questionnaire item applying a 5-point Likert scale ranging from Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, and Strongly Disagree = 1 (She et al., 2021).

The questionnaire items have been adapted from previously validated questionnaire.

The Teachers' self-efficacy has 5 items, which adapted from Maini et al. (2021). Students' self-regulation includes 4 items, and course design/structure has 5 items adapted from Eom and Ashill (2016). Student engagement with 5 items, and student satisfaction with 5 items adapted from Gray and DiLoreto (2016). Therefore, the total questions are 24 items.

3.4 Data Collection Procedures

Firstly, a suitable research questionnaire was created by adapting the previous survey to ensure the validity and reliability of the questionnaire. The questionnaire was initially created in English, and the study population was Chinese. Therefore, the researcher invited an English-Chinese linguist with Ph.D. to translate the questionnaire into Chinese and review the questionnaire.

Secondly, the questionnaire was created in "Questionnaire Star" application. The samples were informed that the questionnaire was anonymous, and the data was kept for academic research only. Based on the sample size, the researcher selected 60 third-year undergraduate students majoring in visual communication design at a public university in Chengdu, China, as the survey respondents. During the students' visual communication design competition course, all survey respondents completed the questionnaire by scanning the QR code of WeChat and returned the questionnaire automatically online. Finally, the valid data was analyzed applying the Multiple Linear Regression process via by JAMOVI statistical software for hypothesis testing.

4. Results and Discussion

4.1 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 the Cronbach's alpha value is > 0.7, the scale is confirmed reliable at the moderate level, according to Hair et al. (2010).

For the research, the Cronbach's alpha was employed to test the reliability of the questionnaire. The Cronbach's alpha of each variable was higher than 0.7, therefore, it is confirmed the reliability as shown in table 1.

Table 1: Cronbach's alpha values of each variable (n=60)

Variables	Number of Items	Cronbach's Alpha	Interpretation
Teachers' self-efficacy	5	0.904	Excellent
Student self-regulation	4	0.813	Very good
Student engagement	5	0.809	Very good
Course design/ structure	5	0.867	Very good
Students' satisfaction towards online class using Tencent meeting	5	0.928	Excellent

4.2 Demographic Information

There were 60 visual communication design students answered to the questionnaire items. There were 16 male students, accounting for 26.7%, and 44 female students, accounting for 73.3%. Twelve of them aged between 18-20 years, accounting for 20%, and the other 48 aged between 21-23 years, accounting for 80% as shown in table 2.

Table 2: Demographic Information of the Samples (n=60)

Variables	Category	Frequency	Percentage
Gender	Male	16	26.7%
	Female	44	73.3%
Total		**60**	**100%**

Variables	Category	Frequency	Percentage
Age	18-20 Years	12	20%
	21-30 Years	48	80%
Total		**60**	**100%**

4.3 Descriptive Statistics of the Variables

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

4.3.1 Arbitrary Level of Questionnaire

In the study, the 5 Level Likert Scale questionnaire (Agreement) has been employed to collect samples' attitudes toward each variables measured. To interpret the data obtained, the arbitrary level from Pimentel (2010) as shown in table 3 has been utilized to interpret the mean value of each variable.

Table 3: Arbitrary Level of the Mean Value Interpretation

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

4.3.2 Descriptive Statistics of Teacher Self-efficacy

Table 4 shows the statistical data analyzed by the students for each question on teacher self-efficacy, where the students perceived that the teachers were able to deal with queries (mean score of 4.22), explaining with patience and confidence those things that seemed difficult to grasp (mean score of 4.18) in their online lessons using Tencent conferencing. Teachers were prepared to use Tencent conferencing for lessons (mean score of 4.18), were able to answer students' questions (mean score of 4.30) and were confident (mean score of 4.05) in their online courses. Overall, students agreed on teacher self-efficacy.

Table 4: Descriptive Statistics of Teachers' self-efficacy (n=60)

	Item Statement	Mean	SD	Interpretation
1	The instructor was prepared to handle queries during online classes via Tencent Meeting.	4.22	0.72	Strongly Agree
2	Instructors were patient in explaining things online, which seemed difficult to grasp via Tencent Meeting.	4.18	0.73	Agree
3	The instructor was prepared to deliver the lecture online via Tencent Meeting.	4.18	0.75	Agree
4	The instructor clarified students' doubts via Tencent Meeting during online classes.	4.30	0.70	Strongly Agree
5	The instructor was confident enough to conduct online classes via Tencent Meeting.	4.05	0.85	Agree
	Average	**4.19**	**0.75**	**Agree**

4.3.3 Descriptive Statistics of Student Self-regulation

Table 5 shows the statistical data analysis of students' self-regulation. Initially, students set their own goals and plans in order to achieve the desired learning results in online classes using Tencent Conferencing (mean score 4.03) and would persist in completing the online learning materials even if they were boring (3.87). Students would keep an eye on their grades in the online course through Tencent Conferencing, and if there was a dip in their grades, they would keep an eye on the course (mean score of 3.95), and when taking exams, they would combine the online class notes with those in the book (mean score of 4.05).

Table 5: Descriptive Statistics of Student self-regulation (n=60)

	Item Statement	Mean	SD	Interpretation
1	Initially, I set my goals and plan according to what I needed to do to make desired learning outcomes in the online class via Tencent Meeting.	4.03	0.76	Agree
2	Even when study materials are dull and uninteresting in the online class via Tencent Meeting, I keep working until I finish.	3.87	0.93	Agree
3	I keep up with my grades in the online class via Tencent Meeting, and if one seems to be sliding, I stress that class more in my studying.	3.95	0.89	Agree
4	When I study for a test, I combine the information from online class notes and the book.	4.05	0.65	Agree
	Average	**3.98**	**0.81**	**Agree**

4.3.4 Descriptive Statistics of Student Engagement

Table 6 shows an analysis of the statistical data on student engagement. Students frequently interacted with the instructor in the online class (mean score of 3.8), discussed what they learned in the online class outside of class (mean score of 3.98), completed assigned readings (mean score of 4.07), and participated in synchronous and asynchronous classroom learning (mean score of 4.05). The lowest score was "I needed to be more actively engaged in the activities required in the online class via Tencent Meeting" (mean score of 3.27).

Table 6: Descriptive Statistics of Student engagement (n=60)

	Item Statement	Mean	SD	Interpretation
1	I frequently interacted with my instructor of online classes via Tencent Meeting.	3.80	0.95	Agree
2	I discussed what I learned in the online class outside of class.	3.98	0.79	Agree
3	I completed my readings as assigned during the online class via Tencent Meeting.	4.07	0.66	Agree
4	I participated in synchronous and asynchronous chat sessions during the online class via Tencent Meeting.	4.05	0.72	Agree
5	I needed to be more actively engaged in the activities required in the online class via Tencent Meeting.	3.27	1.10	Agree
	Average	**3.83**	**0.85**	**Agree**

4.3.5 Descriptive Statistics of Course Design/ Structure

Table 7 shows the statistical data analysis of Course design/ structure. Students understood the course objectives and delivery process of the online course through the Tencent sessions (mean score 4.10), the module structure was logical and comprehensible (mean score 3.97), and the learning materials were interesting and stimulated the desire to learn (mean score 3.83). The learning materials in the online classroom provided a range of effective challenges for students (mean score of 3.90), and the student ratings were partially related to the objectives of the course (mean score 4.10).

Table 7: Descriptive Statistics of Course design/Structure (n=60)

	Item Statement	Mean	SD	Interpretation
1	This online class's course objectives and procedures via Tencent Meeting were clearly introduced to me.	4.10	0.71	Agree
2	The structure of the modules of this online class via Tencent Meeting was well organized into logical and understandable components.	3.97	0.74	Agree
3	The course materials of this online class via Tencent Meeting were exciting and stimulated my desire to learn.	3.83	0.87	Agree
4	The course materials of this online class via Tencent Meeting supplied me with an effective range of challenges.	3.90	0.75	Agree
5	Student grading components such as assignments, projects, and exams were related to the class's learning objectives.	4.10	0.71	Agree
	Average	**3.98**	**0.75**	**Agree**

4.3.6 Descriptive Statistics of Students' Satisfaction

Table 8 shows the statistical data analysis of Students' satisfaction towards online class using Tencent meeting. Students were satisfied with the overall experience of the online class using Tencent meeting (mean score of 4.07) and were satisfied with the level of student interaction (mean score of 3.87). Students were satisfied with the online class using Tencent meeting (mean score 3.95), the instructor who taught was satisfied (mean score 4.05), and the content of the course was satisfactory (mean score 4.10).

Table 8: Descriptive Statistics of Students' satisfaction towards online class using Tencent meeting (n=60)

	Item Statement	Mean	SD	Interpretation
1	I am satisfied with my overall experience in the online class via Tencent Meeting.	4.07	0.73	Agree
2	I am satisfied with the level of student interaction that occurred in the online class via Tencent Meeting.	3.87	0.68	Agree
3	I am satisfied with my learning in the online class via Tencent Meeting.	3.95	0.75	Agree
4	I am satisfied with the online class instructor via Tencent Meeting.	4.05	0.70	Agree
5	I am satisfied with the content of the online class via Tencent Meeting.	4.10	0.71	Agree
	Average	**4.01**	**0.71**	**Agree**

4.4 Hypothesis Testing

A multiple linear regression analysis was conducted to test if independent variables—Teachers' self-efficacy (TSE), student self-regulation (SSR), student engagement (SE) and course design/structure (CS) have a significant influence to students' satisfaction towards online classes using Tencent meeting.

Therefore, the hypotheses are as follows.

H_0: Teachers' self-efficacy, student self-regulation, student engagement, and course design/structure do not significantly influence students' satisfaction towards online classes using Tencent meeting.

Ha: Teachers' self-efficacy, student self-regulation, student engagement, and course design/structure significantly influence students' satisfaction towards online classes using Tencent meeting.

Table 9: ANOVA Omnibus Tests

	SS	df	F	p	$\eta^2 p$
Model	19.9945	4	83.746	< .001	0.859
TSE	0.0292	1	0.49	0.487	0.009

	SS	df	F	p	η²p
SSR	0.0285	1	0.478	0.492	0.009
SE	1.0516	1	17.619	< .001	0.243
CS	2.4894	1	41.707	< .001	0.431
Residuals	3.2828	55			
Total	23.2773	59			

Table 9 showed the multiple linear regression model. It is showed that the linear combination of independent variables measures was statistically significant influence students' satisfaction towards online class using Tencent meeting F (4,59) = 83.75, p = <.001.

The four variables combined has the relationship at 0.859 indicating that approximately 85.9% of the variance of students' satisfaction towards online class using Tencent meeting can be accounted for by the linear combination of independent variables.

Table 10: Fixed Effects Parameter Estimates

Construct	β	t	p
TSE	0.0558	0.700	0.487
SSR	0.0568	0.691	0.492
SE	0.3547	4.197	< .001
CS	0.548	6.458	< .001

Table 10 showed the relative strength of the independent variables on the dependent variable. Two of the indices were statistically significant. The course design/structure was accounted for 7% of the variance in the students' satisfaction towards online class using Tencent meeting and it was statistically significant at p <.001 with the Beta value of 0.548. The student engagement was the second strongest influence which was accounted for 7% of the variance in the students' satisfaction towards online class using Tencent meeting and it was statistically significant at p < .001 with the Beta value of 0.354. Furthermore, the result revealed that Teachers' self-efficacy (β = 0.055, p = 0.487), and student self-regulation (β = 0.056, p = 0.492) did not significantly influence students' satisfaction towards online class using Tencent meeting.

The formula for the model of the independent variables towards students' satisfaction towards online class using Tencent meeting is as follows.

$$\hat{Y} = .055X_1 + .056X_2 + .354X_3 + .548X_4$$

5. Conclusions

5.1 Answers to the Research Questions

For research question: What factors influence visual communication design students' satisfaction toward Tencent Meeting of online class at a public university in Chengdu, China?

This study discusses the research on factors affecting visual communication design students' satisfaction towards using Tencent Meetings for online class at a public university in Chengdu, China. The results of the study showed that student engagement and course design/structure had a significant effect on Students' satisfaction towards online class using Tencent meeting, while instructor self-efficacy and student self-regulation did not have a significant effect.

The results showed that course design/structure had the greatest effect on Students' satisfaction towards online class using Tencent meeting. This study confirms the findings of Eom and Ashill (2016) that there is a strong link between course design/structure and student satisfaction and that course structure is important for student satisfaction. Students will be more satisfied with an online course module structure that has clear objectives and is logical, which will motivate students and enhance their learning (Gray & DiLoreto, 2016).

Students' good knowledge of the course structure, including objectives, organization, learning materials, assignments, and exams, will increase students' satisfaction with the online class. The results revealed that student engagement has a significant effect on students' satisfaction towards online class using Tencent meeting. Thus, validating previous research, there is a positive association between student engagement and student satisfaction with online courses (Gray & DiLoreto, 2016). When students actively participate in online classes, including discussions, presentations, and interactions, they typically experience higher levels of satisfaction (Muzammil et al., 2020). Students who are actively engaged tend to be more satisfied with their learning experience and are likely to achieve better grades (She et al., 2021). Therefore, when designing an online classroom, instructors can take steps to encourage active student participation and provide meaningful opportunities for interaction and collaboration to increase student satisfaction and learning outcomes.

The study demonstrated that teacher self-efficacy did not have a significant effect on students' satisfaction towards online class using Tencent meeting. This is contrary to previous studies where teacher self-efficacy had the lowest impact on student satisfaction compared to other factors (Maini et al., 2021). This may be due to the covert nature of teacher self-efficacy, which is not evident in students' perception of teacher self-efficacy. Secondly, there are differences between different students' backgrounds, personal characteristics, and subject specializations, which led to differences in the results of the study. Teachers' use of positive interactions and personalized teaching styles may increase student satisfaction and enhance teachers' self-efficacy.

In addition, the result revealed that student self-regulation was not found an effect on students' satisfaction towards online class using Tencent meeting. The results of the study confirmed the study by Eom and Ashill (2016) that student self-regulation had no effect on student satisfaction. However, in one study, student self-regulation was found to be strongly associated with academic achievement, with stronger self-regulation leading to higher student achievement (Park & Kim, 2021). Self-regulation can be affected by a variety of factors such as students' own behavior, curriculum design, teacher support, learning resources, etc. Do and Lai (2023) showed that a strong relationship between teachers and learners has a positive impact on students' self-regulation, and teachers should pay close attention to their students to guide them in interacting and stimulating communicative activities in the classroom, which will help to enhance students' self-regulation ability.

5.2 Implication for Practice

The purpose of this study was to determine the factors Influencing visual communication design students' satisfaction toward Tencent Meeting of online class at a public university in Chengdu, China. The variables included teacher self-efficacy, student self-regulation, student engagement, and course design/structure on visual communication design students' satisfaction toward Tencent Meeting of online class. This study provides practical guidance for visual communication design faculty and students, especially for universities in Chengdu, China. Meanwhile, by focusing on course design and structure, encouraging student participation, and improving instructor interaction and personalized instruction, student satisfaction and learning outcomes when using Tencent Meeting for online courses can be improved. This is of great practical significance for improving the quality of online education and stimulating students' motivation and sense of achievement.

5.3 Recommendations for Future Research

Recommendations for studies of the same type or similar topics based on the findings and limitations in this study.

The current study was conducted among visual communication design students at a public university in Chengdu. In order to enhance the generalizability of the findings, future studies could expand the sample size to include students from different universities, majors, and geographic locations to make the sample more diverse.

While this study utilized quantitative survey methods, future research could incorporate qualitative methods such as interviews or focus group discussions to understand the experiences and perceptions of students who use Tencent Meeting for their online courses. This would contribute to a more comprehensive understanding of the factors influencing satisfaction and provide richer contextual information.

To gain a broader perspective, future research could compare the satisfaction of students using Tencent Meeting with students using other online platforms or traditional face-to-face instruction. This would help identify specific strengths and weaknesses of Tencent Conferencing and provide insights into the impact of different platforms on student satisfaction.

This study examined the impact of course design, student engagement, and instructor interaction on satisfaction, and future research could explore other factors that may influence student satisfaction with online courses. Factors such as technical support, Internet connectivity, and availability of resources could be considered to provide a more comprehensive analysis.

5.4 Conclusion

According to the analysis of the research results, firstly, most of the visual communication design students are satisfied with the use of Tencent Meeting for their online courses, students can learn, communicate and collaborate well through this platform, which provides a satisfactory learning experience for students and is a valuable learning platform. Secondly reasonable course design/structure and active student engagement are key factors in student satisfaction, emphasizing the important impact of course design and student engagement on online courses, which can be improved through improvements in these areas. 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.

References

Alibakhshi, G., Nikdel, F., & Labbafi, A. (2020). Exploring the consequences of teachers' self-efficacy: A case of teachers of English as a foreign language. *Asian-Pacific Journal of Second and Foreign Language Education, 5*(1). https://doi.org/10.1186/s40862-020-00102-1

Do, M. N., & Lai, P. H. (2023). The mediating role of self-efficacy in the relationship between the online learning environment and academic self-regulation. *Journal of Applied Research in Higher Education*, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/jarhe-11-2022-0371

Eom, S. B., & Ashill, N. (2016). The Determinants of Students' Perceived Learning Outcomes and Satisfaction in University Online Education: An Update. *Decision Sciences Journal of Innovative Education, 14*(2), 185-215. https://doi.org/10.1111/dsji.12097

Gray, P. A., & DiLoreto, M. (2016). The Effects of Student Engagement, Student Satisfaction, and Perceived Learning in Online Learning Environments. *NCPEA International Journal of Educational Leadership Preparation, 11*(1). https://eric.ed.gov/?id=EJ1103654

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th Ed.). Pearson.

Hamdan, K. M., Al-Bashaireh, A. M., Zahran, Z., Al-Daghestani, A., AL-Habashneh, S., & Shaheen, A. M. (2021). University students' interaction, internet self-efficacy, self-regulation and satisfaction with online education during pandemic crises of COVID-19 (SARS-Cov-2). *International Journal of Educational Management, 35*(3), 713-725. https://doi.org/10.1108/ijem-11-2020-0513

Huang, M., Shi, Y., & Yang, X. (2021). Emergency remote teaching of English as a foreign language during COVID-19: Perspectives from a university in China. *International Journal of Educational Research and Innovation (IJERI), 15*, 400-418. https://doi.org/10.46661/ijeri.5351

Kim, S., & Kim, D. (2021). Structural relationship of key factors for student satisfaction and achievement in asynchronous online learning. *Sustainability, 13*(12), 6734. https://doi.org/10.3390/su13126734

Lan, W. C., Xiang, C. C., & Feng, D. P. (2022). Influencing Factors of Behavioral Intention and Satisfaction of Online Learning Among Undergraduates in Chengdu University of China. *Journal of Suvarnabhumi Institute of Technology (Humanities and Social Sciences), 8*(2), 383-400. https://so04.tci-thaijo.org/index.php/svittj/article/view/258379

Landrum, B. (2020). Examining students' confidence to learn online, self-regulation skills and perceptions of satisfaction and usefulness of online classes. *Online Learning, 24*(3), 128-146. https://doi.org/10.24059/olj.v24i3.2066

Maini, R., Sehgal, S., & Agrawal, G. (2021). Todays' digital natives: an exploratory study on students' engagement and satisfaction towards virtual classes amid COVID-19 pandemic. *The International Journal of Information and Learning Technology, 38*(5), 454-472.

Mojavezi, A., & Tamiz, M. P. (2012). The impact of teacher self-efficacy on the students' motivation and achievement. *Theory and Practice in Language Studies, 2*(3), 483-491. https://doi.org/10.4304/tpls.2.3.483-491

Muzammil, M., Sutawijaya, A., & Harsasi, M. (2020). Investigating student satisfaction in online learning: The role of student interaction and engagement in distance learning university. *Turkish Online Journal of Distance Education, 21*(Special Issue-IODL), 88-96. https://doi.org/10.17718/tojde.770928

Park, S., & Kim, N. H. (2021). University students' self-regulation, engagement and performance in flipped learning. *European Journal of Training and Development, 46*(1/2), 22-40. https://doi.org/10.1108/ejtd-08-2020-0129

Pimentel, J. L. (2010). A note on the usage of Likert Scaling for research data analysis. *USM R&D Journal, 18*(2), 109-112.

Sayibu, M., Jianxun, C., Akintunde, T. Y., Hafeez, R. O., Koroma, J., Amosun, T. S., & Shahani, R. (2021). Nexus between students' attitude towards self-learning, Tencent APP usability, mobile-learning, and innovative performance. *Social Sciences & Humanities Open, 4*(1) , 100217. https://doi.org/10.1016/j.ssaho.2021.100217

She, L., Ma, L., Jan, A., Sharif Nia, H., & Rahmatpour, P. (2021). Online learning satisfaction during COVID-19 pandemic among Chinese University students: The serial mediation model. *Frontiers in Psychology, 12*. https://doi.org/10.3389/fpsyg.2021.743936

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education, 48*(6), 1273-1296.

Tang, Y. M., Chen, P. C., Law, K. M., Wu, C., Lau, Y., Guan, J., He, D., & Ho, G. (2021). Comparative analysis of student's live online learning readiness during the coronavirus (COVID-19) pandemic in the higher education sector. *Computers & Education, 168*, 104-211. https://doi.org/10.1016/j.compedu.2021.104211

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's Alpha. *International Journal of Medical Education, 2*, 53-55. https://doi.org/10.5116/ijme.4dfb.8dfd

Wang, Y., Cheng, Y., & Yang, J. (2021). Perception of students' learning experience on an online course designed by APT model during COVID-19 outbreak. *2021 IEEE 24th International Conference on Computer Supported Cooperative Work in Design (CSCWD)*. https://doi.org/10.1109/cscwd49262.2021.9437675