Article

Online Teaching: A Relational Study of Perception and Satisfaction

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Abstract

Distance learning offers an affordable and convenient way to study and improve one's knowledge in one's spare time. This trend has been accelerated by information and communication technologies that have pushed to new boundaries the ways in which online learning is undertaken. The prevalence of such learning has greatly increased during the COVID-19 pandemic, enabling education in a relatively safe environment. This paper studies how satisfied learners are with such learning. It also looks at interactivity and communication self-efficacy and the effects on student satisfaction with online courses. Analysis of these factors and their cross-effects was undertaken using a case study in a virtual online classroom of 75 students. A questionnaire was designed (with a reliability coefficient of 0.93) and the results were analysed using correlation analysis and ANOVA in SPSS. Satisfaction of students with the course significantly correlated with satisfaction with the online discussion, and positively correlated with satisfaction with course content. The student perception had a significant impact on communication self-efficacy and the interactivity. The results revealed that the key indicating factors for the satisfaction were course content and structure, and the quality of online discussions.

Keywords

Student satisfaction, perception, interactivity, self-efficacy, online learning, COVID-19 pandemic

1 Introduction

Online teaching and learning is a digitised version of distance education that goes back to the 1700s (Harting & Erthal, 2005). On March 20, 1728, Caleb Phillips placed an advertisement in the newspaper the Boston Gazette in Massachusetts, about shorthand lessons that would be sent weekly to prospective students (Holmberg, 2005). In the 1800s, Anna Eliot Ticknor had a correspondence school in Boston in which she gave instruction on 24 subjects. In the mid-1800s Oxford and Cambridge universities in England were offering a version of distance learning called extension services that included lectures and a system of instruction by correspondence (Isman et al., 1999). The Open University in the United

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Kingdom was the world's first university to teach fully at distance, and in 1971 more than 24,000 students were enrolled for its courses. In 2003 it admitted about 200,000, including 7,653 students with disabilities, and provided more than 150 courses delivered by instructors using the internet to conduct tutorials and discussion groups, and to take electronic submissions (Gibbs et al, 2006).

With the advance of technology, distance education has evolved through several stages. The evolution of non-face-to-face (distance) education is illustrated in Figure 1 (Bozkurt, 2019). It can be seen that hard-copy printed learning moved into an audio-visual format as the technology evolved, taking advantage of the many benefits it offers.
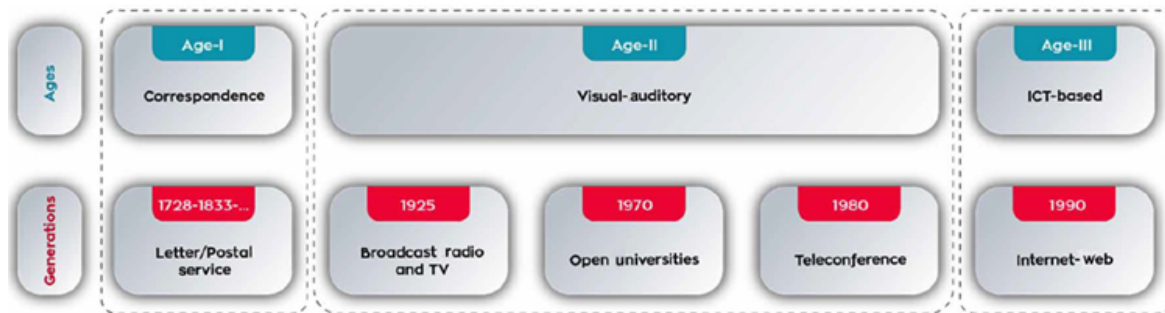

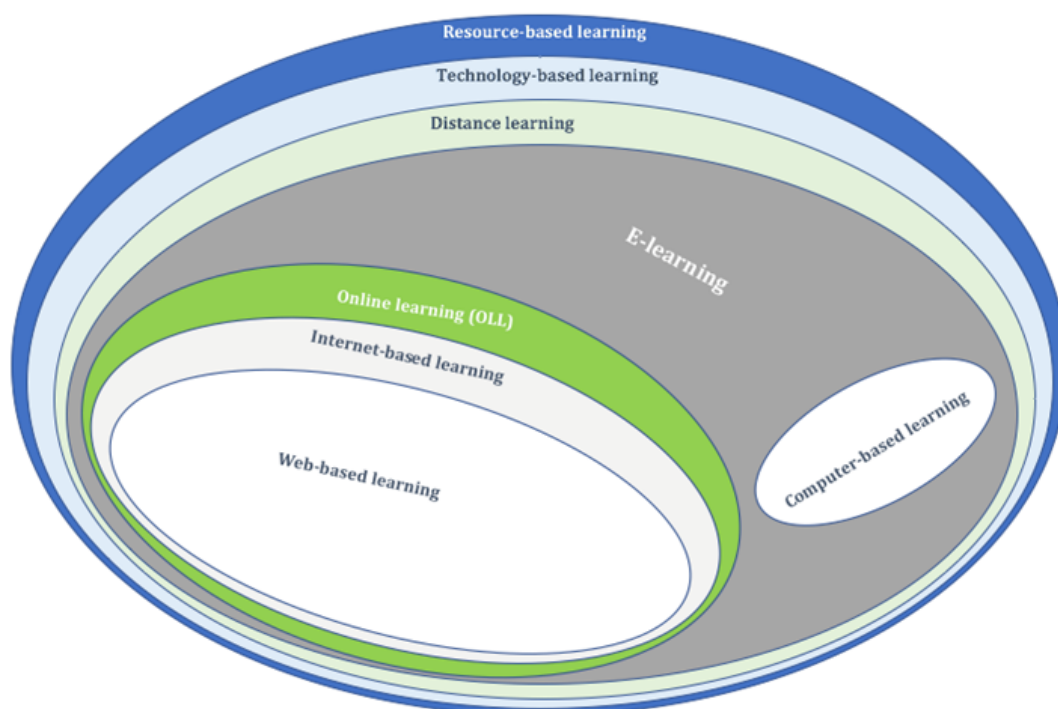*Figure 1*. Evolution of distance education since the 1700s (Bozkurt, 2019)

Figure 2. Inclusivity of terms used to define learning approaches (adapted from Anohina, 2005)

Throughout the literature there is discussion as to which category belongs to which method of teaching/learning and which term adequately defines or describes teaching/learning delivery methods. Scholars have been trying to frame a clear definition and delimitation, with specific terminologies describing the modes and methods of teaching/learning. (Moore et al, 2010; Anohina, 2005).

In Figure 1, the evolution of non-face-to-face teaching is shown in stages of progression, whereas Figure 2 illustrates the interrelationships and inclusivity of the terms used to define approaches. It can be seen in Figure 2 that web-based learning is a subcategory of internet-based learning. However, in

practical terms there is now very little difference in meaning in the terms internet and web, the latter being a short form for world wide web.

One can see in Figure 1 that the online teaching/learning belongs to the third stage of the evolution which is ICT-based. This last stage has developed rapidly over the past 30 years, and it has brought great changes to education. When the COVID-19 pandemic broke out in early 2020, these changes and the benefits they delivered were accentuated when hundreds of millions of people worldwide were required to stay in their homes to reduce the spread of the virus. That in turn required existing and new students to use home computers and mobile devices to gain access to learning materials and teachers. This sudden wide sweeping change in the way people were learning raised the question of how permanent it might become.

Regardless of technology, for non-face-to-face education to be effective it needs to focus on the needs of learners along with the requirements of course content and constraints imposed on teachers (Willis, 1994). Information technologies can facilitate and promote various forms of education, including physical face-to-face, audio-visual assistance and virtual online education with zero physical contact. This digital evolutionary process imposes several challenges in the way teachers and learners perceive the new mode of education. The work presented here relates to online learning as an element of general e-learning, focusing on student satisfaction in the context of online learning.

The COVID-19 pandemic has imposed stringent constraints and stresses on the world. It has greatly changed the way human activities are undertaken and the way we interact with one another. It is putting heavy pressure on health and education systems, and given that formal education is a key driving force of human progress, any suggestion that it could cease as long as the pandemic held sway was barely entertainable. Thus it was decided by institutions of learning worldwide to draw on online learning resources so that education could continue with minimum disruption.

However, this solution has thrown up many challenges. The most acute problems are (1) the difficulties teachers have in the transition from traditional classrooms to online teaching (Lane, 2009); (2) the difficulty of ensuring the quality of online courses; and (3) ensuring students are satisfied with their online learning.

Satisfaction of learners is an important indicator of the success of a course, and it can considerably affect motivation to learn (Keller, 1987). Learner satisfaction is one of the five elements along with learning effectiveness, faculty satisfaction, scale and access that indicate the quality of online learning (Moore, 2005). Satisfaction also has an impact on the relationship between key stakeholders i.e. teachers, students, and parents. Learner satisfaction needs to be explored to provide an improved curriculum design and a better learning experience for students.

Many studies have shown that when online learning is adequately designed, well-structured and embedded it can be as effective as face-to-face learning. Ziegler (2016) said that in some respects online learning may be better than traditional learning. It is thus incumbent on teachers to develop ways of providing high-quality online courses that harness the new teaching and learning mode's strong points.

Key factors that affect student satisfaction with online courses include interactivity, self-efficacy, their perception of online learning, and their readiness for online learning. The role of interactivity has attracted the attention of many scholars, who have shown that it plays an important role in promoting the acquisition of a second language (Ajabshir, 2019; Xu & Yu, 2018; Sauro, 2011; Mackey & Goo, 2007; Smith, 2005). It has been observed in teaching practice that some students are keen to have extended interaction with teachers in the classroom, perhaps to stimulate interest and enthusiasm that had been aroused during a lesson.

It has also been observed in the literature that a great deal of current research on factors affecting student satisfaction is related to higher education, even if some studies focus on primary and secondary schooling. A number of scholars have investigated online learning of English language in Beijing public high schools.

2 Background to Online Teaching and Learning

Satisfaction is one of the key performance factors that promote motivation in learning (Keller, 1987). Motivation to learn becomes particularly important in online learning, where there is no physical supervision, and the learner is left as an autodidact. Eichelberger & Ngo (2018) and Li et al. (2016) referred to the satisfaction with online courses as a complex structure that interlinks the course content and its structure, the educational activities and instructor support.

Numerous researchers have investigated the indicators of learner satisfaction with online courses. Anderson (2003) pointed out that interactivity is one of the important factors affecting satisfaction. This accords with the findings of Allen et al (2002), in which they said teacher-student and peer-to-peer interactions are the premise of course satisfaction. Similarly, it was found that factors including student perception of teacher-to-student, student-to-student interactions, and discussion board features significantly affected learner satisfaction (Lee et al, 2011; McFarland & Hamilton, 2005; Paechter et al, 2010).

Some studies have shown that students considered communication as the most important factor when they were assessing their satisfaction with a course. So instructors were encouraged to keep frequent contact and regular presence in face-to-face classrooms (Dennen et al., 2007). Equally, the competence of teachers and their support were considered to be among the most important indicators of learner satisfaction with online courses (Zhu, 2017).

In addition, Sahin & Shelley (2008) showed that the student perception of online learning as a beneficial and flexible way to learn, to communicate and to share knowledge was significantly related to their satisfaction with online courses. Similarly, internet self-efficacy was found to be an indicator of the satisfaction in an online learning context (Kuo et al, 2013). So factors influencing the satisfaction with online courses include the overall interactions between instructors and learners, and the perceptions of online learning (Wei & Chou, 2020).

An interaction refers to a reciprocal event or exchange between the knowledge provider and the knowledge recipient and or between the learners. It is a key factor in the learning environment that helps learners realise their educational goals (Wagner, 1994). Moore (1989) breaks down interactivity into three basic types: student-student, student-instructor and student-content. Other classifications include formal and informal interactions (Rhode, 2007), synchronous interaction (such as online chat and video conferencing) and asynchronous interaction (including email, online discussion boards and blogs) (Hines & Pearl, 2004; Croxton, 2014). In addition, a new concept of purposeful interpersonal interaction has been put forward to emphasize the quality of online interaction (Mehall, 2020). An increasing number of interactions do not necessarily lead to a higher quality of online learning; it is therefore important to provide a moderate quantity of high-quality interaction.

There are different typologies that underline the complexity of the concept of online interaction. Interpersonal interactions, including student-student and student-instructor ones, are regarded as crucial for all educational settings (York & Richardson, 2012).

Many studies have confirmed the positive effect of online interactions on the following aspects: perceived learning (Sher, 2009), student satisfaction with the course (Fedynich, Bradley & Bradley, 2015; Khalid & Quick, 2016), faculty satisfaction with the course (Su et al, 2005), student academic achievement (Long et al, 2011) and second-language acquisition (Ajabshir, 2019; Xu & Yu, 2018; Sauro, 2011; Mackey & Goo, 2007; Smith, 2005). West & Jones, (2007), McBrien et al, (2009) also found a positive relationship between real-time interaction and student satisfaction.

Several studies have been conducted to compare face-to-face (FTF) interactions and synchronous computer-mediated communication (SCMC). In some studies it became apparent that high-quality real-time online interaction could increase learner output (Chun, 1994; Kelm, 1992) and improve the quality of language acquisition (Chun, 1994; Kern, 1995) in comparison to face-to-face interaction. It was observed that SCMC provides a more relaxed environment for students than do FTF interactions, which

carry elements of internal tension in shy learners (Chun, 1998). Therefore, SCMC is a good tool for encouraging and enabling passive students to become actively involved in the classroom (Chun, 1994; Kern, 1995).

Apart from the benefits of online interaction, lack of feedback from instructors and peer learners is one of the major challenges perceived by students (Muuro et al, 2014). Therefore, securing active interactions is a critical element in online learning. However, there is strong evidence that to improve students' learning experience, the quality of interactions is paramount (Garrison & Cleveland-Innes, 2005).

Self-efficacy is an important factor that affects student satisfaction. It refers to the confidence in oneself in completing specific tasks and activities (Alqurashi, 2016). The research on self-efficacy mainly focuses on technical aspects, such as the internet, computer and allied systems. However, other studies have shown that internet self-efficacy has little relationship with satisfaction in online learning (Kuo et al, 2014). Other studies have revealed that systems and computer self-efficacy cannot predict the student satisfaction with online courses (Liaw, 2008; Jan, 2015).

Lim (2001) and other scholars say there is a correlation between computer self-efficacy and student satisfaction, but this may need further investigation. A lot of current teaching practice shows that students are becoming more and more familiar with computers, and using the technology is easier than it used to be. It can thus be inferred that the detrimental effect of technology on the satisfaction of students is declining, and research should seek to look at other aspects, such as learning and communication self-efficacy and how they affect student satisfaction.

There are four aspects to student perceptions of online learning, including flexibility, adaptability, convenience and interactivity (Wei, 2019). The perception of online learning affects learning behaviour, which implies that if students have a positive view of online learning they are more likely to choose online courses as a way of learning (Duggan et al, 2001). There are studies on the relationship between the perception of online learning, learning behaviour and the learning outcome which show that a positive perception of online learning increases the frequency of students learning online and their scores in online discussion. However, the test scores are not affected by perception (Wei, 2019). Furthermore, some scholars predict that if students have the necessary online learning skills and think that online learning is effective and flexible, their satisfaction with the course will be higher than that of other students (Sahin & Shelly, 2008).

3 Purposes and Motives

As shown in the above covered literature, the notion of satisfaction is highly subjective. However, in the context of this investigation, it would be ideal to acquire some basic understanding of the judgement and feelings of learners about how they perceive a course, its structure and content, and their appreciation of the discussions along with their interactions with peers and with the teacher. This work follows the aforementioned characteristics of online learning and attempts to comprehend student appreciation of the course under investigation and to gain some insight into how to improve the learner experience using the findings to develop better delivery.

Therefore, this work explores whether the learners are satisfied with the online courses, including factors such as interactivity, communication self-efficacy and the perception of online learning along with the cross-effect of these factors.

There is a limited amount of research on the impact of interactivity and the perception on learner satisfaction within the context of public high schools in China. In addition, most research on self-efficacy has focused on technological aspects, so further studies need to be conducted to explore the aspects of self-efficacy, e.g. communication self-efficacy.

Consequently, this work was conducted in order to investigate the impact that interactivity, communication self-efficacy and student perception have on satisfaction in online learning. Here an English-language course in a high school is taken as the subject of the study in an online learning environment in secondary education.

It was hypothesised that the learner satisfaction with online courses would have a positive and significant relationship with interactivity, the perception of online learning and communication self-efficacy. The following research questions were thus set:

(1) To what extent does interactivity predict student satisfaction with online courses?

(2) To what extent does student perception of online learning and communication self-efficacy affect student satisfaction?

(3) To what extent do interactivity, perception of online learning, communication self-efficacy and student satisfaction affect one another?

4 Methodology

The study was undertaken in Beijing No. 4 High School using an online platform that was implemented as a response to the COVID-19 confinement to deliver all the teaching materials online. The platform has several functions, including real-time online teaching, a discussion board, testing, assignment and a resource base. In the real-time teaching there are functions such as audio-visual interaction between the teachers and the students, real-time text interaction, a whiteboard for sharing, questions and answers, and a voting option. The students can undertake a guided self-study in the morning preparing for the upcoming lessons, and then they attend the real-time lessons in the afternoon so that their questions and doubts can be addressed. The platform offers most of the functionality and activities similar to those in traditional teaching but in a virtual environment. The cohort involved in this study were students aged 16-18 who studied a range of subjects over the year, including, but not only, Chinese, mathematics, English, physics, biology, chemistry, history, politics and geography. However, this research focused on the English subject as it is not the native language of the students, and hence, more difficulties were encountered in the transfer to the online mode of teaching and learning. There was only one questionnaire containing sections on student satisfaction, interactivity, communication self-efficacy and the perception of online learning, which was sent to all participants simultaneously.

4.1 Participants

In the study there were more than 75 students in two classes in senior II, 44 girls and 31 boys. The selection of the participants was designed to be representative of students at different levels in terms of motivation and academic performance. The English level ranged from medium to advanced and the participants had taken the online English course for about 10 weeks, so they had some basic experience with the online system to adequately appreciate the survey questionnaire.

4.2 Tools

The questionnaire was compiled using the material and guidance available in the published peer reviewed papers, and the questions were grouped to provide an understanding of the interaction, the perception of online learning, communication self-efficacy and satisfaction of students with online English learning.

To ensure that the questionnaire worked well with the survey platform it was pre-tested by a neutral group of other students who were taking other online courses. After careful analysis, some adjustments were made, and the final questionnaire achieved a reliability coefficient of 0.93. Some questions offered multiple choice in section (1) and others were open questions for course improvement in terms of what the students would like to see more in the online lessons and what should be removed as illustrated in section (4). For sections (2) and (3) the Likert five-level scale was used to gauge the answers.

Figure 3 depicts a snapshot of the survey platform where 1 point means "strongly disagree" and 5 points means "strongly agree", and the participants had to tick the corresponding answer of their choice.

Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Figure 3. Screenshot of the setting of the questionnaires in sections (2) and (3)

There were altogether 51 questions in the questionnaire, categorized in four sections:

(1) *demographic* questions (gender, age, computer and online learning experience);

(2) student *satisfaction* (satisfaction with the online discussion, course content and structure);

(3) *interactivity* (teacher-student interaction, student-student interaction) and communication self-efficacy;

(4) *comments and suggestions* (what the students liked and disliked in the course; suggestions).

The demographic section allowed identification of the proportion of the population that is at ease using computers, as well as experience in any online learning and the type of equipment used to access the lessons.

Standard statistical methods including correlation and ANOVA were used to process the data. The data processing and analysis were undertaken using a SPSS software package, where correlation analysis was conducted to explore the relationship between factors, along with ANOVA to study the significance of the correlation.

5 Results and Discussion

The initial analysis of the data revealed that in the gender section, 86.4% of female participants and 77.5% of male participants disclosed their gender, whereas those who did not state their gender accounted for 13.6 % among females and 22.5% among males. Figure 4a shows that most of the female participants were somehow free to state their gender compared with the male group. Figure 4b shows that about 64% of the cohort had good experience with IT and computers, whereas nearly a quarter were new in using them and about 4% had no experience at all.

This result shows that more than a quarter of the participants will experience various difficulties in effectively following the lessons online because their attention will be diverted to sorting and handling technical issues at home, with limited technical support. The instructor may not be fully aware of these issues while delivering the lesson since it is impossible to see all students on the computer at the same time and to be aware of difficulties any may be having. There is a risk that a quarter of the students may be left behind due to a lack of familiarity with IT and computer issues, such as WiFi, poor connections and bandwidth, badly functioning video system, sound and microphone, poor audio quality and slow computer response, along with many other minor issues.
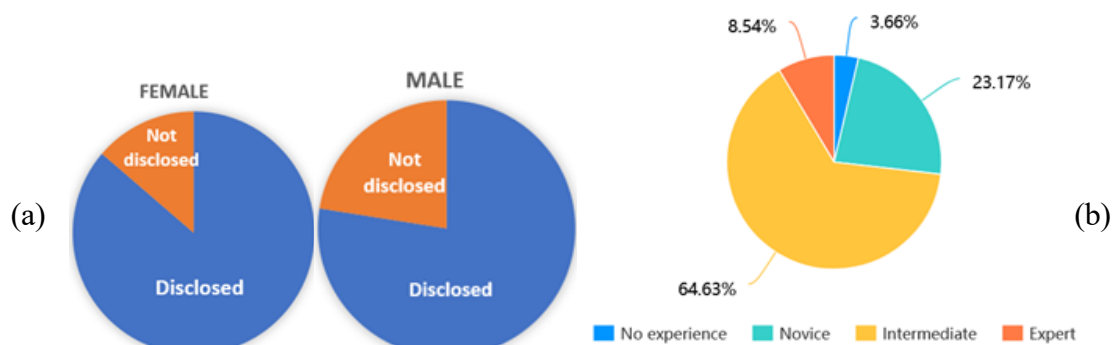
Figure 4. Gender ratio (a) and experience in using IT and computers (b)

Referring to the results of the questionnaire, a mean (M) and standard deviation (SD) were calculated for all variables, and the outputs are given in Table 1. Here the overall satisfaction covers course content, its structure, online discussion and the learners' general judgement of their experiences in the online English course. It is observed that satisfaction with the course content structure had a higher mean value (M=4.03) followed by overall satisfaction with a mean of 3.96, and online discussion had a mean of 3.94. These three factors are key indicators and have a high mean of about 4, whereas the communication self-efficiency is relatively low (M=3.62). The average value for overall interactivity was 3.93, for instructor-learner interaction 3.96, and for learner-learner interaction 3.91, which demonstrates that there was a high level of interactivity in the course. The perception of online learning scored an average of 3.86, suggesting that perception may need some improvement.

Table 1.

Interactivity, Communication Self-efficacy, Perception and Satisfaction

Factors	Mean	Stand. dev.
Interactivity	3.93	.56
Instructor-learner interaction	3.96	.55
Learner-learner interaction	3.91	.72
Communication self-efficacy	3.62	.95
Perception of online learning	3.86	.57
Overall satisfaction	3.96	.53
Online discussion satisfaction	3.94	.58
Content and structure satisfaction	4.03	.63

5.1 Correlation of online discussion satisfaction with overall satisfaction

The correlation analysis shows a strong positive interdependence between the variables, which implies that the online discussion directly influenced the satisfaction of the students, their perception of the online learning and interactivity. However, the online discussion had no direct relationship with communication self-efficacy.

Figure 5 shows there is a high positive correlation between satisfaction with online discussion and overall satisfaction with r =0.949. This indicates that students who had a good experience in the online discussion were overall highly satisfied with the course.

		Overall satisfaction	Online discussion satisfaction
Overall satisfaction	Pearson correlation	1	.949**
	Sig. (2–tailed)		.000
	N	75	75
Online discussion satisfaction	Pearson correlation	.949**	1
	Sig. (2–tailed)	.000	
	N	75	75

**. Correlation is significant at the 0.01 level (2–tailed).

Figure 5. Correlation between online discussion satisfaction and overall satisfaction

In addition, satisfaction with the online discussion positively correlated with the perception of online learning (r= .3921) and with interactivity (r= .4001), but somehow did not correlate with communication self-efficacy (r= .2750). Therefore, the participation of students in the online interaction is not closely related to their satisfaction with the online discussion. This indicates that students who did not frequently take part in discussion may still have enjoyed various forms of online discussion, and may still have benefited in listening to the opinions of teachers and other students.

Similarly, when the learners were asked "What do you like most in the online English course?", most mentioned activities such as "free discussion" and "debate". This shows that the students preferred a form of free discussion and debate along with other similar activities that gave them the chance to learn by exercising their language skills and by exchanging ideas.

This suggests that teachers need to select topics that are attractive to students and turn them into high-quality and effective online discussions on a regular basis. This will enhance the efficiency of the exchange of views between teachers and students, and subsequently lead to more learner satisfaction with the online discussion and overall satisfaction with the course.

5.2 Satisfaction with course content and structure

Figure 6 depicts results of analysis showing that satisfaction with content and structure of the course had a significant positive correlation with overall satisfaction (r= .7395).

When the participants were asked "What did you like most in the online English course?", most respondents referred to the online courses benefits such as "rich content" and "high degree of freedom". The students put a stress on the statements "The design of the curriculum should ensure that all questions are answered in a timely manner" and "The learning content should be clearly explained". This shows that students paid attention to elements related to course content and structure, including learning materials, curriculum structure, the variety and richness of activities and the question/answer sessions.

		Overall Satisfaction	Content Structure Satisfaction
Overall satisfaction	Pearson Correlation	1	.739**
	Sig. (2–tailed)		.000
	N	75	75
Content Structure satisfaction	Pearson Correlation	.739**	1
	Sig. (2–tailed)	.000	
	N	75	75

**. Correlation is significant at the 0.01 level (2–tailed).

Figure 6. Satisfaction with content and structure, and overall satisfaction

In addition, there was a significant positive correlation between satisfaction with course content and structure, and satisfaction with the online discussion (r= .6204). In the teaching practice undertaken within this investigation it was observed that the enjoyable online discussions could stimulate the interest of students in the topic covered, and this could eventually improve the satisfaction with the content of the lesson.

Therefore, it is possible for the instructors to increase the overall satisfaction of students by including a good variety of interactivity along with rich course content and well-designed, high-quality teaching material.

5.3 The influence of student perception of online learning

It was found that the student perception of online learning affected their interaction, communication self-efficacy and their satisfaction with the course, especially interaction and communication. There was a high positive correlation between the perception and the interactivity (r= .8935). This indicates that students who appreciated the effectiveness of online learning more actively interacted with the instructors and their peers.

In addition, student perception had a high positive correlation with communication self-efficacy (r= .8544). This suggests that students who take a positive view of online learning have a strong confidence in the online communication. However, there was a weak positive correlation between perception and satisfaction with the online course (r= .3915), which suggests that student perception had a minor impact on satisfaction.

This has two implications for teaching practice namely:

(1) Educators may need to guide students in developing a positive view of online learning by helping them understand its benefits. This may greatly promote their participation in class activities and their communication self-efficacy; consequently, it may help students to integrate gradually into the learning community and reduce the risk of exclusion and being left behind.

(2) The view of students about online learning has little impact on their satisfaction; consequently, the educators could improve the satisfaction of students by designing a range of attractive online discussions to engage with students and improve course content and structure.

5.4 Cross-effects between satisfaction, interactivity, communication self-efficacy and perception

5.4.1 Student satisfaction indicators

Among the factors studied in this work, online discussion has the greatest influence on student satisfaction with the online course (r= .9491). This is followed by interactivity (see Figure 7), which has a medium impact on satisfaction (r= .3948), and communication self-efficacy, which has a minor effect (r= .2795). This shows that there are two key indicators for student satisfaction:

(1) In online discussions students are given opportunities to practice their language skills and voice their opinions;

(2) Course content and structure help students gain knowledge and interact with teachers and peers.

In addition, the two factors help foster in the learners a sense of belonging to the learning environment, which may contribute to satisfaction.
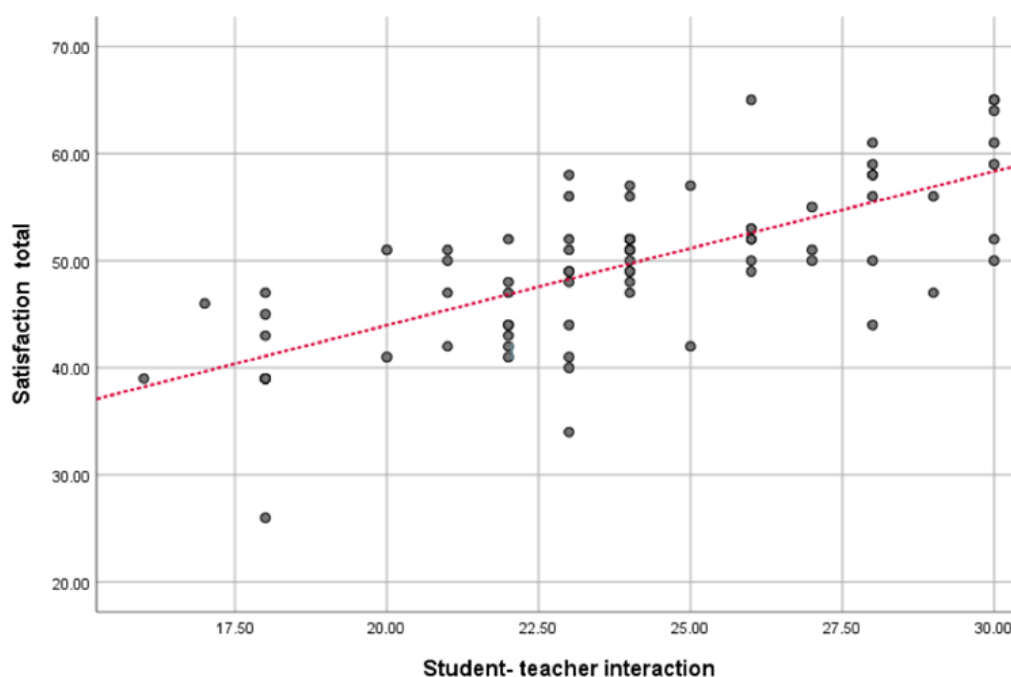

Figure 7. Correlation between student-teacher interaction and satisfaction

Though interactivity is a key indicator of student satisfaction, the quantity of interactions need to be controlled, since some respondents to the questionnaire stated that "interactions sometimes escalate and may waste valuable time".

5.4.2 Interactivity indicators

Student perception of online learning has a strong impact on interactivity (r= .8935); this is followed by satisfaction with discussion (r= .4001). However, satisfaction with course content/structure has the smallest influence (r= .3653). This indicates that an effective way of increasing interactivity in online teaching is to improve the way it is perceived.

This may be done by clearly conveying to students online learning's benefits. However, it is undeniable that student perceptions are influenced by a variety of factors, including experience and personal preferences. So teachers will need to engage in activities that may be able to improve student perception in this matter.

5.4.3 Communication self-efficiency indicators

In terms of communication self-efficacy, student perception of online learning (r= .8544) is the most influential factor; satisfaction with the course (r= .2795) has a moderate effect, and satisfaction with content and structure (r= .0941) has relatively no effect. As noted above, student perception has an overall influence on various factors including communication self-efficacy. This suggests that learners who consider online learning to be effective may be strongly motivated and confident as they communicate with others online.

6 Conclusions

This work is a case study that explores the key indicators of student satisfaction with online courses. It focuses on a given cohort of young students in a particular online course. The research has brought forward some findings that could be used to improve the teaching/learning performance of this particular course. The main aim was to understand how the teachers could improve the learning experience of students and the success of the English module.

(1) Satisfaction with the online discussion was found to have a highly positive correlation with online course satisfaction. Therefore, teachers may need to devote themselves to organizing high-quality online discussions to improve the satisfaction of learners. It appears that students who do not often take part in discussion are also satisfied with effective online discussion.

(2) There is a significant positive correlation between satisfaction with course content and its structure and overall satisfaction. With reference to instructor-learner and learner-learner interaction, students pay more attention to content and structure of courses. Therefore, teachers may have to pay more attention to content along with an active engagement delivery, which are important in improving learner experience and satisfaction.

(3) Interactivity positively affects student satisfaction, and this points to the fact that one must ensure a sufficient amount and frequency of interactions, but the interaction should be controlled and moderate so it does not affect the content/structure of the course and its delivery.

(4) Student perception of online learning significantly affects interactivity and communication self-efficacy, and to some extent it affects the satisfaction of the learner with online courses. This means that one should focus on improving perception of online learning and on supporting students to develop a positive view of online learning.

It is understandable that not all schools would be able to conduct immediate research of this kind to reveal issues of OLL to improve teaching/learning performance. However, this study investigated the above covered aspects of online teaching and learning, and the outcomes have been used to adjust some aspects of the online delivery of this course. Nevertheless, the results are crude and ought not be overgeneralised.

This work is an initial attempt to understand the effect of OLL on students using one single group in a specific course, and some studies are being undertaken to quantify the impact of OLL on teaching/ learning. Therefore, further work is planned to extend this study onto the entire school to find a general trend that could be applied to others. However, it is hoped that this paper will encourage other schools to undertake this kind of study to identify adequate support to students because each school has its own peculiarities and needs over a range of subjects delivered online.

Appendix Questionnaire

Section 1.

Demographic Information

1. What is your gender?

   Male___   Female___   Prefer not to say___

2. What is your age?___   Prefer not to say___

3. What is your experience level in using computers?

   No experience___   Novice___   Intermediate___   Expert___

4. Have you ever taken a distance learning course? If yes, how many have you taken?

   Please select the number: 1 2 3 4 5 6 7 8 9 10 more than 10

5. What do you use to attend the online classes?

   Computer___   Phone___   Pad___   If other, specify: _____

6. Is it easy or difficult for you to use technology to participate in the online course?

   Very easy___   A bit easy___   A bit difficult___   Very difficult___

Section 2.

Satisfaction

1. I benefited from the online discussion during this course.

2. I was encouraged to do more readings and research on topics discussed in the online course.

3. Discussions with instructors helped me deepen my understanding of this subject.

4. Discussions with peer leaners helped me expand my view on the subject.

5. I had an excellent and beneficial learning experience in this course.

6. In general, this course satisfied my learning expectations.

7. This online course has covered my needs as a learner.

8. I am satisfied with the learning content and course structure.

9. I am satisfied with the online discussion.

Section 3.

Interactivity

<div align="center">Learner-instructor interaction</div>

1. I had numerous and good interactions with the instructor during the class.

2. I asked the instructor my questions via email, discussion board, instant messaging and others.

3. The teacher replied to my questions promptly, adequately, and clearly

4. The instructor regularly posted topics for students to discuss.

5. I replied to text messages from the instructor.

6. I received good and constructive feedback from my instructor when I needed it.

<div align="center">Learner-learner interaction</div>

7. I discussed with my classmates about the course via email, discussion boards, instant messaging.

8. I answered questions of my classmates via email, discussion board, instant messaging, and others.

9. I shared my thoughts and ideas about the lectures and its applications with peer learners during this class.

10. I gave my opinion on other students' thoughts and ideas.

11. In-class activities led to many opportunities for me to interact with my peer learners.

12. OLL provides good, sufficient, and flexible discussion channels.

13. OLL enables me to share and exchange various and relevant resources.

14. OLL provides and supports convenient tools to communicate with my classmates.

<div align="center">Online communication self-efficacy</div>

15. I have full confidence when using online tools (email, discussion) to effectively communicate with others.

16. I am comfortable and confident in expressing myself freely (e.g. humour) through text.

17. I feel free and assured in posting questions during online discussions.

<div align="center">Perception of online learning</div>

18. With OLL I get a good variety of multimedia resources.

19. In OLL I can extract important information from the provided resources.

20. OLL provides a good flexibility for interacting directly with other students.

21. OLL removes the distance and the barriers between the teacher and students.

22. It is a very good and convenient way to communicate with friends and other students

23. In OLL there is less limit in time and place to study and thus I have more freedom.

24. With OLL I have increased the range of my general knowledge.

25. Using OLL my academic performance has improved.

26. OLL is an effective and personalised way of learning.

27. In OLL it is easier to follow and keep up with the teaching plan pace and timing.

28. OLL brings a relaxing atmosphere and less anxiety.

29. I have a lot fewer difficulties and a smaller workload in OLL.

Section 4.

Open Questions

1. What aspect of the course I liked the most:

    playing songs

    free reading

    sharing ways of learning English

    poll and survey

    in-class test (e.g. multiple choice, T or F)

    open questions

    choosing students randomly to answer questions

    group competition (game/race to be first to answer questions)

    book/movie recommendation

    debate/discussion

    review of previous lessons

    test

    Q & A about exercises

    other

2. I would like to see more of this in this course: _____

3. What aspect of the course I did not like: _____

4. This part of the course could be removed:

    playing songs

    free reading

    sharing ways of learning English

    poll and survey

    in-class test (e.g. multiple choice, T or F)

    open questions

    choosing students randomly to answer questions

    group competition (game/race to be first to answer questions)

    book/movie recommendation

    debate/discussion

    review of previous lessons

    test

    Q & A about exercises

    other

5. I would like to see this aspect added to the course: _____

6. Should the school offer more online courses? Yes___   No____

    If yes, why: _____

    If no, why: _____

7. I have the following suggestions for improving this course: _____

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