Innovation Attributes of F2F Computer-Assisted Cooperative Learning in Teaching Reading Skills

Amr Abdullatif Yassin, Ibb University, Yemen

https://orcid.org/0000-0001-6445-5715

Norizan Abdul Razak, Universiti Kebangsaan Malaysia, Malaysia

Tg Nor Rizan Tg Mohamad Maasum, Universiti Kebangsaan Malaysia, Malaysia

ABSTRACT

This study aimed at investigating the innovation attributes of face-to-face computer-assisted cooperative learning (CACL). It employed a mixed method design as the data were collected through a survey and semi-structured interviews. The findings showed that face-to-face CACL has a high degree of adoption in higher education institutes to teach EFL/ESL learners. Also, the regression analysis showed that the five factors are strong predictors of innovation adoption, and complexity has the highest significance, followed by compatibility, relative advantage, observability, and trialability, respectively. The study found that accessibility is an emerging innovation attribute which increases the adoption of any innovation practice. The paper concluded that the human element of face-to-face cooperative learning increases the adoption of CACL and that relative advantage has influence on the other innovation attributes. The study recommends using face-to-face CACL in teaching EFL/ESL learners and using accessibility as an innovation attribute.

KEYWORDS

CALL, Computer-Assisted Cooperative Learning, Cooperative Learning, Face-to-Face Interaction, Reading Skills, Yemeni EFL Learners

INTRODUCTION

The rapid development of technology has greatly influenced the field of language teaching and learning. It has become essential for teachers and educational institutions to utilize technology, especially in the field of language teaching and learning as it is of great benefit to students (Yusuf, 2005; Gomez, Wu, Passerini & Bieber, 2007; Ntemana & Olatokun, 2012; Grgurovic, 2014). One of the main advantages of technology is making the process of learning student-centred instead of teacher-centred (Greer & Mott, 2009; Razak, Yassin & Maasum, 2020).

One of the methods that proved to be effective in teaching EFL/ESL students is computer assisted cooperative learning (CACL) (AbuSeileek, 2007; 2012; Sioofy & Ahangari, 2013; Yoshida, Tani, Uchida, Masui & Nakayama, 2014). Nevertheless, using technology inside the classroom is not always fruitful for the students (Gobbo & Girardi, 2001), which necessitates using cooperative learning with CALL since cooperative learning makes the students more active and responsible for their learning (Yassin, Razak & Maasum, 2018). Taking into consideration CACL, there is a need

to focus on CALL design and on the process of teaching which includes face-to-face cooperative learning activities. This requires providing the students with their needs in terms of the skills to be studied, and it is vital to plan the classes carefully so that it becomes face-to-face CACL. Thus, there is a need to focus on theory and practice from the stage of CALL design to the phase of teaching inside the classroom. After all, this requires evaluation for this innovative teaching method in order to provide implications for teachers and higher education institutions about the weaknesses and strengths of using face-to-face CACL. Investigating the innovation attributes of face-to-face CACL guides educators and researchers in adopting any new teaching method, or teachers can modify the process in order to overcome the limitations found in previous literature.

In addition, what makes this study, and similar studies, significant is that the use of technology in the field of education in developing countries is facing different challenges, including "a systems approach to learning, awareness of and attitudes toward ICTs, administrative and technical support, staff development, personal ownership of technologies, inadequate funds, and the transforming process in higher education." (Ntemana & Olatokun, 2012: 181). Therefore, investigating the adoption rate from the side of the students will help in the adoption decision from the side of the teachers and educational institutions for new teaching practices.

Previous studies have shown that interaction through computer has a positive influence on the process of learning (Oakley, Felder, Brent, & Elhajj, 2004; Stahl, Koschmann & Suthers, 2006; Medina & Suthers, 2008; Kwon, Liu, & Johnson, 2014). However, previous studies did not shed light on the integration of CALL and face-to-face cooperative learning. This study changed the online interaction to face-to-face CACL. This application is considered an innovative method of teaching, at least for the learners participated in this study. Surely, investigating the innovation attributes of CACL might motivate others to replicate the same method in different contexts. In addition, the investigation of the innovation attributes will help to get an idea if the implementation of face-to-face CACL is suitable for learners in terms of their skills and needs, and if such teaching method is perceived to be easy or complex from the side of the learners beside other related aspects. The findings of the study will highlight the advantages and limitations, if any, of face-to-face CACL, which will guide teachers and educational institutions in terms of the adoptability of this teaching method. Therefore, the main objective of this study is to investigate the innovation attributes of face-to-face CACL, and it aims at answering the following question:

What are the innovation attributes of face-to-face Computer Assisted Cooperative Learning in teaching reading skills?

LITERATURE REVIEW

Innovation attributes by Rogers (2003) have been studied by researchers in different fields as strong predictors for innovation adoption through the attitude of the respondents to five factors, namely complexity, compatibility, relative advantage, observability and trialability. Rogers (2003) argued that there has been a lot of work on innovations, but there is a gap in the innovation diffusion of new technologies. He added that innovation means newness to the users. Hence, if an innovation is used for the first time, it is considered to be an innovation for the user even if it has been used by other users.

The idea of the attitude of the individuals towards using technology has been discussed by different researchers, and scholars supported that the five innovation attributes are significant predictors of technology adoption (Chigona & Licker 2008; Aşkar, Usluel & Mumcu 2006; Datta 2011; Ntemana & Olatokun 2012).

Although researchers showed that these five attributes are strong predictors for the adoption of any innovation, there is still disagreement concerning which attributes are stronger predictors. From the perspective of Aşkar et al. (2006), complexity can be used for preparation and teaching delivery in schools, observability can be used for some teaching delivery for some tasks that are used during the class time, and the characteristics relative advantage and compatibility can be used for preparing

teaching tasks. Moreover, Mun, Jackson, Park and Probst (2006) revised previous literature and concluded that relative advantage, complexity, result demonstrability, and image are the most important factors for predicting the intention of the users to adopt educational technology in the future.

There are many empirical studies that have used the five innovation attributes to investigate the adoptability of innovative teaching methods. The study of Martins, Steil, and Todesco (2004) was carried out in Brazil to investigate the technology adoption as a tool of instruction. The study concluded that the most significant predictors of technology adoption are trialability and observability attributes. Form the findings of another empirical study, Mumcu (2004) stated that the five attributes are related to each other although the significance of each factor might be different from one situation to another. He concluded that there is a positive relationship between the factors relative advantage, compatibility and visibility and the use of ICTs in vocational and technical schools. Moreover, the study of Ntemana and Olatokun (2012) investigated the attitude of 213 teachers towards the use of information and communication technology in the field of education. The findings of this study showed that the attributes are different in their contribution to the adoption of technology with observability as the highest predictor followed by relative advantage and complexity.

The study of Jwaifell and Gasaymeh (2013) aimed to investigate the use of interactive whiteboards as a modern system by female teachers in schools. The study investigated the constructs that impact on teachers' decision to adopt whiteboards in schools. The study was qualitative as the researchers collected the data through semi-structured interviews, document reviews and observation. The study concluded that the five constructs, namely complexity, compatibility, relative advantage, observability and trialability, contributed to the adoption of whiteboard system among the teachers.

Another experimental study is by Grgurovic (2014), which investigated the innovation attributes given by Rogers (2003) on the innovation adoption of blended learning. The study investigated three factors only, namely complexity, compatibility and relative advantage. The study used mixed-method approach as the data was collected through a survey, semi-structured interviews with the students and the teachers, and observation. The study concluded that the three constructs contribute significantly to the adoption of blended learning in teaching speaking skills.

To sum up, innovation attributes, namely relative advantage, complexity, compatibility, trialability and observability, have been used to investigate the adoption of new teaching practices like using technology in the process of teaching. Although the degree of significance of each factor is different from one study to another, the five factors are considered strong predictors for the adoption of technology or any innovation practice in the field of education.

Theoretical Framework

Innovation diffusion theory is developed by Rogers (2003), and it explains a universal theory of social change. This theory examines different aspects including innovation attributes which has been used in different disciplines including the field of education (Martins, Steil & Todesco, 2004; Berger, 2005; Shaffer, 2006; Lopez-Moreto & Lopez, 2007; Kebritchi, 2010).

The basic element of this model is innovation, or the newness of any practice. Rogers (2003:12) defines innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption". Newness of an innovation is a subjective characteristic and depends on the perception of the user. Hence, an innovation might be a characteristic in a setting, but not perceived as an innovation in another setting.

This study uses one strand of this theory which is innovation attributes as every innovation is characterized by five attributes that can help or hinder its diffusion, which are 1) relative advantage, 2) compatibility, 3) complexity, 4) trialability, and 5) observability. Relative advantage is related to the perception of the users to the innovation whether it is advantageous or not. The users will adopt the innovation if they feel that it has advantage to them. The same relationship applies to compatibility which investigates the perception of innovation as compatible with the values and the previous experiences of adopters. Complexity has a negative effect on the innovation because the more complex

the adopters find the innovation, the less likely they use the innovation. The fourth characteristic is the trialability which refers to the degree to which the users might try out the innovation once again. The fifth characteristic is observability which refers to observation of results due to the use of the innovation (Rogers 2003; Al-Gahtani, 2003; Ntemana & Olatokun 2012).

This study used the innovation attributes in order to investigate the attitude of learners towards face-to-face CACL, because positive attitude concerning the innovation attributes will increase its adoption and guide others to try out this innovation in different contexts. Thus, in this study, students have not used face-to-face CACL which is a new method of learning for them, especially with the integration of CALL and face-to-face cooperative learning. Hence, this method of teaching might be successful and might be problematic for the students. Investigating the innovation attributes helps to decide on the success of this method. Moreover, the innovation attributes of face-to-face CACL has not been investigated in previous literature, which helps the researchers to give the reader an overview for the characteristics of integrating CALL and face-to-face cooperative learning in one setting. This will be a guide for teachers and educational institutions in the process of innovation adoption to help EFL/ESL learners improve their language and overcome their learning challenges.

Methodology

This study used a mixed-method approach. The quantitative data were collected through a survey, and the qualitative data were collected through semi-structured interviews. This approach is suitable for the study because quantitative data will give a general picture for the innovation attributes of face-to-face CACL from the perspective of the participants, and the semi-structured interviews will help to get an in-depth understanding for the innovation attributes of implementing face-to-face CACL (Denzin & Lincoln, 2003; Creswell, 2009; Cohen, Manion & Morrison, 2007).

The qualitative and quantitative data were validated by three experts and their comments were taken into consideration. Moreover, the survey was measured in terms of its reliability using Cronbach's Alpha in SPSS. The reliability of the survey was 0.821 which shows that the survey has is a good internal consistency.

The number of the participants in this study is 15 Yemeni EFL learners, who are studying different majors in different universities in Malaysia. The number of participants is limited to 15 due to accessibility; however, Cohen et al. (2007) stated that the number of participants in intervention studies should not be less than 15 students, which makes the number of the participants adequate to conduct the study. Moreover, semi-structured interviews were conducted with five students. The interviews were carried out until reaching the saturation point where the answers were repeated and nothing new could be grasped from the interviewees (Creswell, 2009).

The data analysis of the quantitative data was in terms of percentages for the items of each factor. Also, regression analysis was carried out in order to find the significance of each factor. According to Austin and Steyerberg (2015), regression analysis requires at least two participants for each factor to reduce bias. The analysis was carried out using Statistical Package of Social Sciences (SPSS), version 22. In terms of the interviews, they were transcribed and decoded in the form of thematic patterns. This helps the researchers to triangulate the data which increases the reliability of the findings (Miles & Huberman, 1994), and helps the replication of the study in other settings and contexts (Marshall & Rossman, 2014).

Findings

This study aimed at investigating the innovation attributes of face-to-face CACL to improve reading skills. Rogers (2003) gave five attributes that describe the success of any innovation practice which are relative advantage, complexity, trialability, observability, and compatibility.

The first attribute, relative advantage, aimed to investigate the advantages which the students have gained from face-to-face CACL. This factor is important as the positive attitude increases the adoption of the innovation in the future. The students stated that they have gained different advantages

Table 1. Relative advantage

No.	Items	SA	A	N	D	SD
1	The reading activities helped me to get feedback from the website, my friends and the teacher.	46.7	46.7	6.7	0	0
2	Face-to-face Computer Assisted Cooperative Learning helped me to improve my reading skills.	33.3	66.6	0	0	0
3	Face-to-face Computer Assisted Cooperative Learning helped me to overcome my feeling of anxiety during the classes.	40.0	33.3	13.3	6.7	6.7
4	Face-to-face Computer Assisted Cooperative Learning helped me to overcome my feeling of isolation during the activities in the classes.	13.3	53.3	33.3	0	0
5	Face-to-face Computer Assisted Cooperative Learning encourages me to improve my reading.	26.7	66.7	6.7	0	0

from the course which are related not only to improving reading skills but also to getting feedback and getting rid of learning anxiety as presented in Table 1 below.

Table 1 above shows that the students consider face-to-face CACL as a good method because it has different advantages. Thus, 46.7% of the students strongly agree and 46.7% of the students agree that face-to-face CACL provides the students with three sources of feedback namely teacher, students and computer. Besides, 33.3% of the students strongly agree and 66.6% of the students agree that face-to-face CACL helped them to improve their reading skills. In addition, 40% of the students strongly agree and 33.3% agree that face-to-face CACL helped them overcome the feeling of anxiety inside the classroom. Moreover, 13.3% of the students strongly agree and 53.3% of the students agree that face-to-face CACL helped them to overcome the feeling of isolation inside the classroom. Furthermore, 26.7% of the students strongly agree and 66.7% of the students agree that CACL motivates them to improve their reading.

The second attribute, complexity, aimed to investigate whether the integration of CALL and face-to-face cooperative learning is complex during the study or not. This factor is also important because complexity decreases the chance of adopting the innovation in the future. However, the students stated that face-to-face CACL was smooth, and they did not find it complex during the study as shown in Table 2 below.

Table 2. Complexity

No.	Items	SA	A	N	D	SD
6	Face to face Computer Assisted Cooperative Learning activities are difficult.	0	0	20	80	0
7	Working on computers with my friends was confusing.	6.7	0	33.3	53.3	6.7
8	It was difficult to discuss the activities in the computer with my group.	6.7	0	26.7	60.0	6.7
9	The overlap of face to face instruction and computer activities made the lessons complex.	0	0	20.0	73.3	6.7

Table 2 above investigates the complexity of CACL, and it shows that 80% of the students agree that they did not find face-to-face CACL activities complex. Also, 53.3% of the students disagree and 6.7% strongly disagree that using computer with cooperative learning was not confusing which supports

the finding of the item number seven. Moreover, 60% of the students disagree and 6.7% strongly disagree that discussing the activities with groups and using computer is difficult. Besides, 73.3% of the students disagree that using computer and face-to-face interaction made the course complex.

The third attribute is trialability, which investigated whether the students intend to try the same innovation in the future. This factor increases the adoption of the innovation if the students intend to try face-to-face CACL in the future, and this factor is related to the previous two factors. The students gave a positive response to trying the innovation in the future as presented in Table 3 below.

Table 3. Trialability

No.	Items	SA	A	N	D	SD
10	I had enough time to participate in the course.	6.7	60.0	26.7	6.7	0
11	I would like to study the other skills using face to face Computer Assisted Cooperative Learning.	40.0	46.7	13.3	0	0
12	I would like to participate in such courses in the future.	46.7	53.3	0	0	0
13	I recommend other students to study reading skills using face to face Computer Assisted Cooperative Learning.	46.7	40.0	13.3	0	0

Table 3 above investigated the perspective of the students towards adopting face-to-face CACL in the future. 60% of the students agree and 6.7% of the students strongly agree that they had enough time to participate in the course. Also, 40% of the students strongly agree and 46.7% agree that they want to study other skills using face-to-face CACL. Moreover, 46.7% of the students strongly agree and 46.7% of the students agree that they want to participate in similar courses that use face-to-face CACL in the future. Furthermore, 46.7% of the students strongly agree and 40% of the students agree that they recommend others to study reading skills using face-to-face CACL.

The result of the fourth attribute, observability, aimed to investigate if the students could observe improvement in their performance during the study. This factor also increases the adoption of CACL if the students notice improvement in their performance. The students stated that they could notice improvement in their performance as shown in Table 4 below.

Table 4. Observability

No.	Items	SA	A	N	D	SD
14	The scores which I received in the reading exercises show that my reading skills have been improved.	33.3	46.7	13.3	6.7	0
15	I feel that my answers in the post-test are better than my answers in **the** pre-test.	40.0	40.0	20.0	0	0
16	I feel that reading has become easier for me now after the course.	46.7	33.3	13.3	6.7	0

Table 4 investigates the students' observation for their improvement in reading skills. The table shows that 33.3% of the students strongly agree and 46.7% of the students agree that there is improvement in the scores which they receive for reading exercises. Besides, 40% strongly agree and 40% agree that their performance in their performance in the post-test was better than their

performance in the pre-test. In addition, 46.7% strongly agree and 33.3% of the students agree that reading has become easier after the course.

The result of the fifth attribute, compatibility, aimed to investigate if face-to-face CACL is suitable for the students in terms of their experiences, skills and needs. This factor increases the adoption of face-to-face CACL if the students feel that it is suitable for them and helped them to improve their skills. The students showed that face-to-face CACL was suitable for them, and they could gain the benefit which they needed and expected as shown in Table 5 below.

Table 5. Compatibility

No.	Items	SA	A	N	D	SD
17	My previous experiences in computer **made** the course easy.	20.0	60.0	20.0	0	0
18	I came to know about cooperative learning before I started the course.	20.0	46.7	26.7	6.7	0
19	I understand that such courses like Computer Assisted Cooperative Learning are important in the field of language **learning.**	46.7	33.3	13.3	6.7	0
20	Learning English using such methods as face to face Computer Assisted Cooperative Learning becomes necessary for the current generation.	33.3	66.7	0	0	0
21	Nothing is odd in the course.	6.7	53.3	33.3	6.7	0
22	Using computer as a study tool is good to support cooperative learning classes.	46.7	40.0	6.7	6.7	0

Table 5 above investigates the compatibility or suitability of the course for the students. The table shows that 20% of the students strongly agree and 60% of the students agree that their previous of computer made the course easy. Moreover, 20% strongly agree and 46.7% of the students agree that they came to know about cooperative learning before the course. Besides, 46.7% strongly agree and 33.3% of the students agree that face-to-face CACL is important in the field of language teaching and learning. In addition, 33.3% of the students strongly agree and 66.7% of the students agree that new methods like face-to-face CACL have become necessary in teaching English for the new generation. Furthermore, 6.7% strongly agree and 53.3% of the students agree that the course is not odd. Also, 46.7% of the students strongly agree and 40% of the students agree that computer is a good method to support cooperative learning.

Moreover, regression analysis has been used to find out the importance of each factor in the total score of the innovation attributes scale. Table 6 and Figure 1 show the contributions of the factors and the total score of the innovation contribution scale.

From table 6 and figure 1, it is clear that all the factors are significant at (.000); however, the level of significant of the five innovation attributes is different as complexity has the highest contribution, followed by compatibility, relative advantage, observability and trialability respectively.

In terms of the semi-structured interviews, they were analysed in the form of thematic patterns as shown below.

Complexity

The first attribute for face-to-face CACL is complexity which refers to the complexity of any innovation from the side of the users. The students in this study have different perspectives concerning complexity,

Table 6. Result of regression analysis

	Effects					
	Target: Innovation.Attributes					
Source	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**	**Importance**
Corrected Model ▼	929.600	5	185.920	.	.000	
Complexity_transformed	67.235	1	67.235	.	.000	0.375
Compatibility_transformed	48.776	1	48.776	.	.000	0.272
RAdvantage_transformed	36.674	1	36.674	.	.000	0.204
Observability_transformed	18.639	1	18.639	.	.000	0.104
Trialability_transformed	8.028	1	8.028	.	.000	0.045
Residual	0.000	9	0.000			
Corrected Total	929.600	14				

Figure 1.
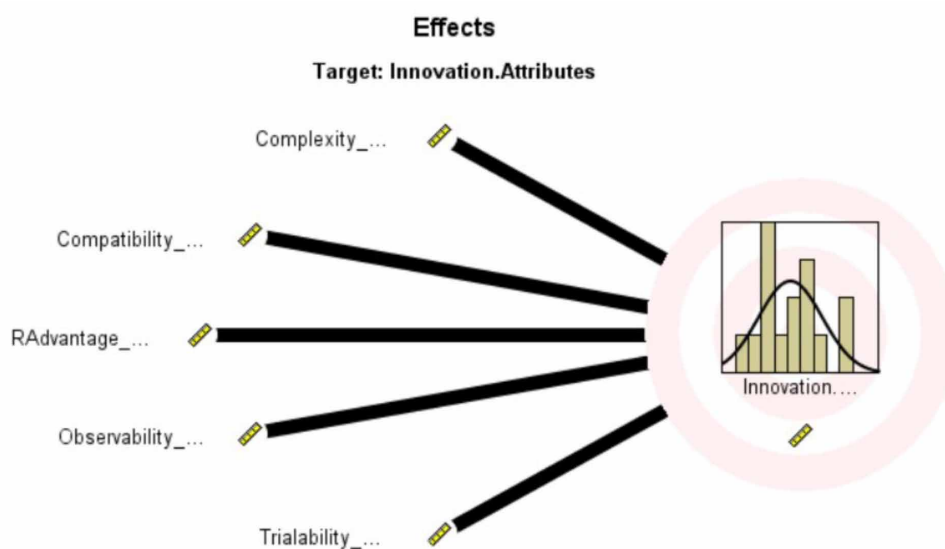
but all of them stated that the integration of CALL, face-to-face cooperative learning and reading skills was smooth as shown in their comments below.

S2: "Honestly, everything was smooth and excellent. Actually, anything new aaa has aaa positives and negatives. For example, we used to study as a group everyone using his own laptop. Sometimes, there was contradiction during reading, so we leave the process of reading to one and the others are listening. Sometimes, everything is ordered as everyone reads the passages. aaa After that we, the group members, discuss the answers of the questions together."

S3: "aaa I feel that it is easy. Why? Because it was divided. If it was complex, there would not been supervision and a leader … if we did not know what to do in every stage, it would be difficult. Okay … but the situation was easy because it was divided. You start receiving the skill introduction … face-to-face. Then you study in group. Then you do exercises in groups and sometimes as individuals. The division for time in the class made the style easy so that we accept them together … the group, the computer and the teacher."

In terms of complexity, the students stated that the interaction among the students and with the teacher was interesting especially with using computers as every one of these sources supports the learning process. This led the students to describe the implementation of face-to-face CACL as a smooth process. Moreover, the students stated that the supervision and the clear instructions made the process of learning easy for the students. This marginalized the complexity of the learning and teaching process and made classes as normal as their previous experience.

Compatibility

The second factor, compatibility, investigated if the innovation face-to-face CACL is suitable for the students in terms of their experiences and current needs. In this regard, the students stated that the integration of CALL and face-to-face cooperative learning made the process of learning reading skills more effective as shown in their comments below.

S3: "the traditional learning aaa I think that it is aaa less beneficial for the students that cooperative learning and computer … the method of CACL has the advantage because it also is not forgettable like the traditional."

S4: "in the traditional aaaa this course learning is better than the traditional learning because in the traditional learning aaa you cannot observe what the student exactly aaa his level of study. … in this class, you will get immediate feedback. You will learn fast like aaaa you will learn from your mistakes faster. You will have the opportunity to ask the lecturer, and you will tell your lecturer everyday what are the difficulties that you face during this day."

Accordingly, the students stated that face-to-face CACL is suitable for them because it is an effective method, and it helps students to improve not only reading skills but also English in general. Also, they stated that face-to-face CACL is suitable for them because because it makes a balance between teaching and practice, which makes it more beneficial. Moreover, the students argued that face-to-face CACL was compatible with their needs because the students could overcome their weaknesses in reading skills with the help of CALL and face-to-face cooperative learning activities.

Relative Advantage

There are different themes which the students stated as advantages gained from face-to-face CACL during studying reading skills. The first theme is that the students can receive three types of feedback, namely from the teacher, from the computer and from the other students which cannot be gained

when studying in the traditional teaching methods. The comment below shows the types of feedback received during classes.

S1: "we take benefit from the teacher, from the group activities, the discussions, and the individual exercises as the computer gives you feedback as well. This is the perfect method, and it is better than the traditional or theoretical methods when the teacher is the only source of the information."

This shows that face-to-face CACL makes the process of learning dynamic as everyone is responsible for the process of learning. Also, face-to-face CACL makes the process of learning student-centred, so students must take care of their learning. In this regard, the students also help each other to overcome obstacles as every student must share his knowledge and experience with the other students. That is, every student provides feedback to the other students beside the feedback of the computer and the teacher.

Another theme is that face-to-face CACL helps the students to alleviate the level of anxiety and be more confident inside the classroom. Accordingly, one of the clear advantages of face-to-face CACL is to overcome learning anxiety. Anxiety is a permanent issue in the process of language learning. However, the students showed that face-to-face CACL helped them to alleviate the feeling of anxiety. The comments of the students below show this theme.

S2: "Also, aaa the students got rid of shyness among the students, and we all speak in English and convey our ideas in English."
S3: "there was not anxiety [in the classroom]."

Moreover, there are different features of face-to-face CACL that helped to make the process of learning active and interesting, especially overcoming isolation inside the classroom as shown in the statements of the students below.

S3: "the communication was good because … I mentioned earlier that the levels were almost the same. So, this gives us the sense that there is not shyness among all of us… the fear was not significant. I expect that this shyness and fear will be there if there is a big difference in the levels of the students."

Accordingly, face-to-face CACL helped the students to overcome anxiety and isolation because the students could interact with each other and get to know each other more. Hence, students could overcome the feeling of anxiety and gain more confidence.

Observability

The fourth factor investigated the observability of the students for the benefits which they gained from the innovation. The students could observe the improvement in their performance as it is shown in some statements below.

S3: "yes … even the reading of the passages became faster. Aaa the focus became stronger than before. I feel that there is improvement."
S5: "first, I answered more questions in the post-test than the pre-test. Also, I was able to answer more exercises at the end of the course accurately and perfectly. I was not able to do that at the beginning of the course. Also, when I take other exercises, I answer them, and I get more scores than before."

Accordingly, students stated that they could notice the improvement in their performance in the post-test which is better than his performance in the pre-test. This is because they could link between different parts of the passages which made them able to answer the post-test easily and comfortably. Furthermore, students stated that they could notice improvement in their answers in the post-test as they could answer more questions accurately and perfectly. They also stated that their scores were in a constant improvement during the exercises which they used to do inside the class.

Trialability

The fifth factor investigated the perception of the users for the innovation and their desire to use it in the future and recommend it for the others. In this regard, the students stated that they would like to join similar courses in the future as stated in their comments below.

S1: "yes, surly I will join. Even if there is a course similar to the previous course, I will attend to get more benefit."

S5: "yes, I will attend because I like it this method a lot and I got a lot of benefit."

Accordingly, the students have the will to participate in similar courses in the future. This attitude is related to the results of the previous three factors. That is, the main point which motivates the students to participate in face-to-face CACL is that they noticed improvement in their reading.

Another theme related to trialability is that the students recommend this method to the others. They stated that they gained benefit from face-to-face CACL, so the other students will gain benefit if they study using this method. The students' comments concerning this point are presented below.

S2: "Personally, I recommend aaaa to teach reading, writing or any English course through this method. "

S4: "aaaa … this method of teaching is good to get the desired benefit, and the benefit which they will get. The benefit will be higher than all the other methods …I will recommend it to the others. It is the way form which I got benefit. I got benefit so I will advise the others."

Accordingly, all students commented that they recommend face-to-face CACL for the others. The students focused on their experience and the advantages which they gained during the classes. Therefore, this factor again shows that the students are aware of the advantages of face-to-face CACL, and they recommend it to the others. This not only shows the positive attitude of the students but also increases the chance of adopting face-to-face CACL in the future as a method of teaching to EFL/ESL learners.

Accessibility

Accessibility is an emerging attribute from the themes of the qualitative data as discussed by the participants. This theme means that the rate of adopting an innovation is higher if the users find it easy to access the innovation tools. The participants argued that the unavailability of electricity makes it difficult to implement CACL currently in Yemen. The students' comments on this theme are shown below.

S1: "Nowadays it is difficult because there is electricity [in Yemen] and so on. But, I will do my best to create a suitable environment such as having suitable light to present the slides using the computer. At least, I will use a method close to this method like distributing the materials or the questions to every student. Then I will teach using cooperative learning among the students. I will follow this method as there will be a recorder, summarizer and facilitator. I will do best to help the students."

S2: "Personally, I recommend aaaa to teach reading, writing or any English course through this method. However, from my personal point of view, it will be difficult in Yemen because of the economic situation [in the current situation of war]. Laptops are not there and there is not Internet because of the financial situation of the students. So, it might be used to teach some people in Yemen."

According to the comments of students, the current war in Yemen might make the accessibility to the basic needs to implement face-to-face CACL difficult. That is, there is no electricity, which is important to get access to the web-based learning CALL. The problem of getting electricity in Yemen makes it difficult to implement this method nowadays. Also, the current war in Yemen has made people unable to access the Internet. Moreover, the financial situation of students is very low due to the deterioration of the economy of Yemen in the last few years. Therefore, accessibility to the innovation resources is important and it increases the adoptability among users.

Discussion

This study aimed at investigating the innovation attributes of face-to-face CACL in teaching reading skills to Yemeni university students in Malaysia. Innovation attributes has been used in this regard in different studies which aimed to investigate the attitude of the users of an innovation or to evaluate the use of an innovation. According to Rogers (2003), innovation refers to any practice which the students or users use for the first time. Accordingly, the students stated that they have not used face-to-face CACL before, which makes it an innovative practice for them.

In this study, the students' responses were positive to the items of relative advantage and the result of the analysis showed that the students got benefit in reading skills and other learning aspects. That is, the integration of CALL with face-to-face cooperative learning helped to make the learning atmosphere more conductive and less anxious (Sioofy & Ahangari, 2013), because the students felt that they are close to each other mainly due to face-to-face interaction (Blasco-Arcas, Buil, Hernández-Ortega & Sese, 2013; Martin & Rimm-Kaufman, 2015). Although previous studies showed that Yemeni EFL learners experience anxiety (Razak, Yassin & Maasum, 2017; Yassin & Razak, 2017; Yassin & Razak, 2018), the findings of this study proved that face-to-face CACL is an effective method to reduce learning anxiety due to the face-to-face interaction with teacher and students.

Besides, one of the issues which had not been investigated is the complexity of the integration of CALL and face-to-face cooperative learning. However, this study linked CALL, cooperative learning and STAD strategy to teach both bottom-up reading skills and top-down reading skills. Besides, this theoretical basis was linked to practice, and the students showed that the process was not complex since the activities were planned well inside the classroom. It seems that one of the strong factors that reduces the complexity is understanding the process of learning and planning classroom activities properly.

Furthermore, compatibility refers to the perception of the students if face-to-face CACL could provide them with their needs and goes with their previous experiences (Rogers 2003). In this study, the students found that face-to-face CACL is "a quantum leap" for them according to the expression of one of the students. Looking at the context of the study, it is clear that face-to-face CACL has two elements: the first one is CALL, and the second one is face-to-face cooperative learning. In the CALL design, the researchers followed ADDIE model, which requires analysing the students' needs in first stage. This was done through a survey in which the learners stated that they need to study 13 reading skills. This highlighted the importance of CALL design, because if face-to-face CACL is conducted with poor CALL design, the results might be different.

In terms of observability, this study adopted the definition of Moore and Benbasat (1991) as cited in Tully (2015) that observability refers to the results which users can observe in the innovation. Students' responses showed that they could observe improvement in reading skills through the exercises which they used to do inside the classroom. Also, they could observe improvement in their reading performance in the post-test. In terms of trialability, it refers to the desire of the users to

try the innovation under their own conditions (Rogers, 2003). The students expressed their wish to participate in similar studies, and they also recommend face-to-face CACL to the others. In addition, from the responses of the students, it is observed that the students linked compatibility, trialability and observability to the advantages which they gained from face-to-face CACL in studying reading skills. Hence, the advantages which the students gain from the innovation have influence on the other innovation attributes. This in turn increases the adoption of face-to-face CACL.

The emerging innovation attribute from the qualitative data in this study is accessibility. According to the participants, the current situation of Yemen might not be suitable to implement face-to-face CACL because the current war has made it difficult to get electricity or even access to the Internet. Based on this attribute, accessibility to the facilities to implement face-to-face CACL increases the adoption rate; however, the inability to get access to the tools required for the implementation of an innovative teaching method has a negative effect on the adoptability of this method. Although previous studies like Ntemana and Olatokun (2012) discussed that access to the ICT in higher education increases the chance of using technology among students, they did not discuss the term accessibility as an innovation attribute. Also, Rogers (2003) discussed accessibility as a characteristic of open leaders so that they can discuss any new innovation with their followers. In other words, leaders should be accessible by their followers so that they can discuss any innovation. However, the current study concluded from the comments of the students that accessibility is an innovation attribute because getting access to the facilities of the innovation increases the adoption among students or users. On the contrary, if the students and users do not have accessibility to the ICT facilities, the rate of adopting an innovation will decrease.

In the context of Arabic countries, the study of Jwaifell and Gasaymeh (2013) investigated the attitude of the teachers in Jordan towards the adoption of interactive whiteboards. The results obtained are similar to the results of this study. This shows that the situation in Yemen regarding adopting technology in the field of education is not that different from the situation in Jordan. Also, both teachers and students are willing to adopt technology in the process of teaching and learning if they have the chance. This leads to one conclusion that there is a need to adopt technology in the educational field in the middle eastern countries. Furthermore, the findings of the study are in line with (Roman, 2003; Rogers, 2003; Chigona & Licker, 2008; Tully, 2015) that these five attributes are strong predictors of the innovation adoption.

Conclusion and Implications

The result of the qualitative and quantitative analysis showed that the students have a positive attitude towards face-to-face CACL taking into consideration the five innovation attributes namely relative advantage, complexity, observability, trialability and compatibility. This assures that the new teaching method is suitable for the students in terms of their experiences and their needs which helped to improve reading skills. This led the students to have a positive attitude towards face-to-face CACL, and they have the will to adopt this method in the future. Accordingly, face-to-face CACL has a high degree of adoptability among EFL/ESL learners.

The findings showed that accessibility is an emerging innovation attribute which increases the adoptability of the innovation. Moreover, the other five innovation attributes showed that face-to-face CACL was successful because it helped the students to improve reading skills. One implication is that face-to-face CACL is suitable for EFL/ESL students since it combines the advantages of CALL and the advantages of cooperative learning. Therefore, the adoption rate of face-to-face CACL in higher education is high according to the findings of this study, especially teaching EFL/ESL learners.

Besides, teachers and educational institutions need to focus mainly on the advantages which the students might gain from the innovation since it has an influence on the other innovation attributes, namely complexity, compatibility, observability and trialability. That is, the focus on the advantages increases the adoption decision for any new teaching practice.

Furthermore, this study was conducted among learners who belong to a developing country. The findings showed that the learners admired the process of teaching that utilized technology, and this shows that adopting technology in the process of teaching EFL/ESL students has become essential in the current age, even in developing countries.

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Amr Abdullatif Yassin is a lecturer at English Department, Center of Languages and Translation, Ibb University, Yemen. He got his PhD in English Language Studies from Universiti Kebangsaan Malaysia, Malaysia. He has published several papers related to English language teaching and learning. His areas of interest include E-learning and ELT.

Norizan Abdul Razak is a professor of E-learning in School of Language Studies and Linguistics Malaysia. She has published about 100 papers, chapters and books in different areas related to language teaching and learning. Currently, she is the Director of Tun Fatimah Hashim Women Leadership Center, National University of Malaysia. Here areas of interest include E-learning and gender studies.

Tengku Nor Rizan is an Associate Professor at the English Language Studies Program at the Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia. Her research interests include cooperative learning, second language reading, workplace, and e-literacy.