Research article

Influence of online versus traditional learning on EFL listening skills: A blended mode classroom perspective

Mohammad Owais Khan [a],[*], Sakeena Khan [b]

[a] Department of English, College of Languages and Translation, Najran University, Najran, Saudi Arabia
[b] Preparatory Year Program, Najran University, Najran, Saudi Arabia

A B S T R A C T

Online learning is becoming more and more popular than traditional learning, and the need to investigate its influence within the framework of instruction and learning domains is — in today's emerging, cutting-edge technology world — an academic trend. The current study's problem intends to explore the impact of virtual versus traditional learning on the academic achievement of EFL students, a subject that has garnered substantial attention from English Language Teaching (ELT) researchers. This study aims to clarify if EFL students' academic progress in a listening skills classroom is influenced by traditional or online learning. The present research compiled information on how EFL students performed when English language teaching took place online as opposed to in a traditional classroom environment. This study, using an experimental research design with (N = 30) pairs of students (both male and female), was held at Najran University, KSA, in the academic year 2022–2023 b y using probability (random sampling). This study used pre-and post-tests to gather data from the subjects of the study, bifurcated into controlled and experimental groups employing the two modes of teaching, viz., online and traditional. The findings of the investigation proved that the experimental group achieved better performance compared to the control group in terms of results and scores. There are no significant differences based on gender. In addition, (N = 20) teachers teaching listening skills to EFL learners participated in semi-structured interviews. The qualitative analysis enlisted flexibility, accessibility, effective communication, collaboration, monitoring of student progress, and the use of a blackboard as constructive elements, followed by maintenance costs, wastage of available resources, long-term engagement, limited face-to-face interaction, and demotivation as critical perspectives. According to the findings of this research, the author recommends further studies with more variables.

1. Introduction

ELT practitioners, particularly in the last two decades, have been interested in researching how online versus traditional learning affects EFL students' academic success. This study aims to clarify if online versus traditional learning affects EFL students' academic performance in a listening skills classroom environment. It is worth noting that there are limited studies examining how online versus traditional learning affects EFL listening abilities, especially in the university context. Data was collected using pretest and posttest

---

from participants in the current study, with 30 participants divided into two groups: controlled and experimental groups. Both groups were taught using online and traditional teaching methods, respectively. The study intended to find out the effect of online and traditional teaching on EFL students' academic performance in a listening classroom, discover any significant gender differences in participants' academic performance between online and traditional teaching methods, and explore the ways in which traditional and online teaching modes differ from each other from a constructive and critical perspective.

The widespread use of the Internet in traditional fields and the quick growth of digitalization, multimedia content, and quick communication technologies are driving transformation and advancement in all areas of life. English teaching and learning methodologies are evolving with the three most commonly used forms of English pedagogy, namely the traditional mode, the online-only style, and the combined online and traditional modes [1]. (Larson & Sung, 2009). In this study, the researchers used only two teaching modes: traditional mode and online mode. Even though understanding spoken English is crucial, listening comprehension is a difficult skill for many EFL students to master since it is the one that is practiced the least out of the four language abilities. In most universities, listening and speaking skills are taught in the same class by the same instructor. However, the instructor solely emphasizes speaking skills and disregards listening skills because he thinks of them as minor skills.

Listening skills are equally important as speaking skills in the English language teaching process. Obtaining understandable input, which is vital for language development, is another factor. Students who are proficient at listening comprehension are better equipped to contribute to class discussions. As a result, teachers of foreign languages should work harder to enhance their learners' listening comprehension [2] (Lin, 2002). 9% of people spent time on writing, 6% on reading, 30% on speaking, and 45% on listening while communicating. This shows how important listening skills are to the communication process. This shows how important listening skills are to the communication process [3]. (Hedge, 2000).

The ability to listen is crucial for learning a language since it helps with communication skills and comprehension of inputs. The intricate process of listening demands that learners make relationships between what they hear and what they already know [4] (Pangaribuan et al. (2017). Speaking is directly related to listening. Decoding the speaker's message is a necessary part of listening. As a result, the listener needs to actively process the information that the speaker has shared [5]. (Nurpahmi, 2015). Competent speakers must be listeners at the same time and consider the reciprocal and unpredictable dynamics of speech. Using online instruction to teach listening skills has improved students' learning efficiency [6]. (Ellis, 2014).

The ability of the students to communicate effectively coexists with strong listening abilities. Students can respond and keep the discussion going well if they have a clear understanding of what is being said to them in the conversation [7]. (Hadijah and Shalawat, 2016). Excellent listening comprehension training can lessen students' concerns about hearing and provide them with a solid foundation for becoming autonomous learners who can utilize listening to study effectively, as stated by Ref. [8]. (Gilakjani and Sabouri, 2016). To ensure that learners understand the words they hear from their teachers' explanations, listening skills are crucial components of the English language that need to be studied [9]. (Mutia, 2020). The current study's problem intends to investigate the effects of online versus traditional instruction on the academic achievement of EFL students, a subject that has garnered substantial attention from English Language Teaching (ELT) researchers. Hence, the problem statement has been reformulated with the following study objectives.

- To inspect the impact of online vs. traditional teaching on the academic performance of EFL in a listening classroom.
- To explore any significant gender differences in participants' academic performance between online and traditional teaching methods.
- To discover teachers' constructive and critical perspectives on blended modes of teaching and learning.

2. Theoretical framework

This study is consistent with blended learning, which became prominent in the early 21st century. According to Graham et al. (2005), the integration of online and traditional modes of learning, the blending of different instructional approaches, and the combination of instructional modalities are the key concepts of blended learning [10]. Furthermore, this study is in line with CALL, a concept that is well-known for establishing the parameters for research on technology-based learning. The origins and development of CALL may be traced back to the 1960s, demonstrating the mutually beneficial interaction between pedagogy and technical innovations. Levy (1997) and Amaral (2011) assert that CALL is the application of technology to language instruction [11,12].

3. Literature review

In the present scenario, there is an extensive amount of research focused on assessing the impact of online learning on EFL learners' performance; yet, relatively few of these studies have looked into the improvement of learners' listening abilities. Many investigations have been done by researchers, and they have shown that online teaching methods improve EFL learners' skills and performance in exams. This improvement also shows learners' positive attitude toward the virtual mode of teaching. Paul Man-Man (2006) focused on the methods used to improve listening skills among Hong Kong learners. He suggested using ELT podcasts for in-depth and lengthy listening activities. Initially, podcasting was primarily intended to be used for amusement and informational purposes; however, educators have realized that it has great potential as a tool for language pedagogy. The goal of the current study is to investigate the impact of EFL learners' listening abilities in traditional and online learning environments [13]. According to Landrum et al. (2020), seamless and flexible involvement in virtual classrooms is made possible by the special elements included in the learning environment, such as creativity, assessment, scoring frameworks, interactive conversations, and data transfers. Online teaching is more interactive

than the traditional mode of teaching when it comes to listening courses [14]. Muthuprasad et al. (2020) remark that in terms of students' motivation, inspiration, and four language skills, the online educational setting differs from the traditional classroom environment. In their study, 385 Nepalese students across a range of academic fields were surveyed on their thoughts on online classes that were held during the COVID-19 lockdown [15].

According to their findings, a majority, specifically 70% of respondents, expressed readiness to use online learning to administer the curriculum in the face of this pandemic. On the other hand, the findings of the content analysis revealed that to increase learning efficacy, students prefer recorded lessons with end-of-class tests. In contrast to broadband connectivity, the students thought that the simplicity of use and flexibility of online programs made them a desirable choice. Tran (2021) investigated the effectiveness of utilizing MSP-Microsoft programs and found that the students were in favor of the program's advantages. EFL is effectively practiced and learned with Microsoft Teams. She also lists a few limitations to employing (MSP) for online pedagogy [16]. Nebahat and Selim (2021), found that in their study, 64 secondary school students who were in the sixth and seventh grades participated. According to the study's findings, participants' listening abilities improved in statistically significant ways, and the test group performed listening tasks more competently than the control group did. It was also observed that students who took part in the online course regularly outperformed those enrolled in the traditional course in terms of grades and assignment marks [17].

Mohammad and Atif (2021) reported that meaningful variations were observed in the listening comprehension test results between the two groups in experimental design research. The results of the group receiving treatment in the investigation were positive [18]. In a similar vein, Singh et al. (2021) have shown that for both instructors and learners, virtual learning is a preferable choice. Because e-learning "enables them to complete tasks more quickly and to always playback the video of the online learning materials that have been recorded to help improve their listening skills," he said, higher-level pupils benefit from it. They found that students who studied online outperformed students who studied in person. They conjectured that this discrepancy might be because of the formative feedback that teachers gave to students who studied online—something that was harder to provide in person because of time constraints. Thus, previous research with online students yielded comparable positive outcomes [19]. Shakeel et al. (2021) validated the value of providing online training for instructors to enhance their listening abilities in their studies. The results of their work display that the investigational group's post-test measurements' p-values varied significantly below the confidence interval (0.05), demonstrating the participants' good performance. They further advise educational policymakers to prioritize implementing online learning strategies to enhance the listening abilities of teachers at English-medium schools [20].

On the other hand, numerous studies have shown that implementing traditional modes of learning improves students' grades in listening comprehension and yields notable outcomes. According to the results, traditional course participants ranked slightly higher on the final class average, observational average, and mini research result average ranks than online course participants, which was statistically significant [21]. (Amanda, 2018). He further stated that, in comparison to students who completed the online version, conventional class participants frequently received somewhat higher grades and assignment scores. Although there were other variations across the courses that affected performance, instructor feedback was cited as a key characteristic of both programs. Rachmah (2020) delved into the fact that more students choose offline training over online instruction because they will learn the content more effectively this way. Students' listening skills grow more in an offline classroom [22]. De (2018) discussed that the usage of online instruction is limited to professional-level courses, which are typically taken to improve credentials and expand employment chances. Diplomas are beneficial, similar to professional degrees in management. He went on to say, however, that young children, teenagers, and adolescents who have not yet entered the workforce are better served by traditional educational approaches. Learners and instructors have greater opportunities to share rich learning experiences in a traditional teaching and learning environment. Students can immediately discuss their opinions and further explain their questions to the teacher, receiving prompt answers to their queries [23].

Some investigations have shown that, as opposed to traditional or virtual methods, adopting a blended style of instruction increases students' performance and reveals their favorable attitude toward it. Yen et al. (2018) compared traditional and online modes of teaching on undergraduate course learners' development. They found that, when it came to getting the intended outcomes, online courses could be equally as effective as traditional ones. However, the mixed mode, which combined the advantages of both conventional and online education, had better potential for enhancing students' academic performance [24]. Likewise, Yu et al. (2021) provided examples of how traditional classroom instruction and online learning might both be useful teaching techniques to raise the academic achievement of learners. The results also exhibited promising outcomes in enhancing students' academic performance [25].

Setyawan (2019) demonstrated that the combination of offline and online teaching approaches in a skill class was effective and beneficial. The increased percentage of students who received listening in mixed classrooms contrasted to the classroom in the traditional mode is evidence that using the new way of teaching, i.e., online teaching mode, while retaining its positive qualities, would enhance students' academic achievement [26]. In the domain of this study, Wong et al. (2020) showed that using a mixed-method approach, as opposed to traditional learning methods, had a beneficial impact on encouraging student autonomy and motivation in English classes in high school [27]. Additionally, Anthony et al.'s (2019) research revealed that success, participation, involvement, continuation, and cognitive outcomes were all valid indicators of how well-blended learning affected students' effectiveness [28]. In a different study, Serrano et al. (2019) looked into strategies to use both conventional and virtual modes to increase student initiative in collaboration while converting traditional in-person training into blended learning. This approach also allowed teachers to save time [29]. Yuhong et al. (2021) used quantitative and qualitative methods to assess data from two classes of students' listening assessments in English and subsequent in-depth interviews while also examining the learners' participation in the educational process. The outcomes revealed that the blended activity helped improve students' listening skills. Additionally, students' opinions regarding learning English by listening changed from predominantly negative involvement to a more positive one. Students' interest increased as well as the variety of their learning techniques [30]. Sulla et al. (2022) evaluated the mediating effect on students' academic performance

using an online poll. A total of 176 undergraduate students from two northern Italian universities completed the questionnaire. The findings indicated that students' final exam marks are impacted by grit; grades were influenced by perceived self-efficacy in managing complicated challenges, whereas psychological discomfort controlled the initial stage of the mediation process [31]. Zhou (2023) conducted a study, and the results showed that the participant groups improved in both speaking ability and communication openness. The traditional group did lower than the virtual group, though. The results show that the speaking abilities and communication propensity of EFL learners are enhanced via virtual language interactions. Additionally, the EFL students reported favorable attitudes and impressions of the online language exchanges [32].

Researchers present the studies with conclusions based on gender preference in the context of online vs. traditional modes of instruction. This is because there are no consistent study findings in the available literature that can be attributed to gender. For example, Mannes (2023) demonstrated in his research findings that reactions between men and women differed significantly. Women preferred face-to-face (F2F) training, gave the instructor's input more weight, and thought that effort level was the most crucial success factor (CSF). Men were more motivated to learn online and said prior knowledge was the most significant CSF. As a result, when creating and delivering EAP courses, educators and curriculum originators should be conscious of gender differences and student demands [33]. On the other hand, based on the results of the following studies about gender disparities in online learning, outcomes are frequently erratic and even contradictory. Men often have continuously positive attitudes toward the activity, while women show more perseverance and engagement when learning online [34]. (Richardson & Woodley, 2003), according to Nistor (2013) [35] In educational contexts, girls exhibit greater self-control than males, despite men potentially employing greater instructional techniques and possessing superior technical expertise (Alghamdi et al., 2020). [36]. Virtual instructional choices for women may have been challenged by the aforementioned findings, which may explain why there were no appreciable gender disparities in the outcomes of online education. The present investigation aims to address the questions below to deal with the deficiencies in earlier studies that have been mentioned:

1. Does online vs. traditional teaching impact the academic performance of the EFL students in a listening classroom?
2. Does the academic achievement of participants show a significant gender difference between online and traditional education methods?
3. What are the constructive and critical perspectives on blended modes of teaching and learning?

4. Methodology

4.1. Design

This research aims to evaluate the impact of a traditional teaching approach vs. an online language learning strategy on the academic achievement of Saudi (EFL) students in a listening-focused classroom. Both quantitative and qualitative approaches were used in an experimental design to gather the required data.

The study design is displayed as follows.

The research outlines used for the study on listening skills among Najran University undergraduate students and listening skills teachers are shown in Table 1.

4.2. Sampling and participants

Sampling is a method used in quantitative research to select a group of individuals from a target population using statistical analysis. It helps generalize the target population and is crucial in quasi-experiment research (Indrayadi, 2020) [37]. The researchers employed random sampling to select the participants. Due to the probability involved in this sampling technique, every person has an equal opportunity to be selected to take part in the research's sample. The participants are chosen at random from a list of the target population (Singh, 2015) [38]. The goal of employing random sampling is to choose certain individuals to reflect the target group. This kind of sampling is seen to be the most straightforward method for gathering data from the entire population (Indrayadi, 2020) [37]. Furthermore, the researchers chose 30 pairs of male and female undergraduate students enrolled in the academic year 2022–23 in listening skill courses at the Dept. of English, Najran University, KSA. The subjects were split into two groups: a controlled group who attended classes using the traditional approach of instruction, and an experimental group of students who used the online method of instruction. Since all the participants were from the English department, were enrolled in the same course, and were at the same

Table 1
Study strategy.

Population	Samples	Groups	No. of Analysis	Quantitative	Qualitative
UG Students of Najran Univ.	30 pairs of students	Controlled and Experimental	Three Analyses	Compare the test grades of both to determine the significance of the achievement.	–
Teachers who teach listening skills	20 teachers who teach listening skills	–	–	–	Semi-structured interview content analysis

academic level, the researchers were able to guarantee homogeneity. The participants are all between the ages of 18 and 25. A degree of consistency between sample units within a population is known as homogeneity, and it implies that every item in the sample was chosen because it possessed the same or similar qualities. The participants were selected according to Cohen et al. (2007), who advocate having more than 15 participants in control and experimental groups. The current study selected 30 pairs of students [39]. In addition, the current study sample was inspired by Gall et al. (1996), who support the idea of having an analysis contrasting the controlled group and treatment groups [40]. In addition, the current study employed semi-structured interviews with teachers (N = 20).

4.3. Instruments

To gather the data for the investigation, an experimental design method was used. Pretests and posttests were utilized to evaluate the impacts, both favorable and unfavorable, of traditional and online instruction methods on learners' academic achievement in the listening course. Furthermore, semi-structured interviews were undertaken to investigate instructors' perspectives on the constructive and critical perspectives of online and traditional modes of teaching.

4.3.1. Pretest and posttest
To assess the influence of online instruction with traditional instruction techniques on language learners' listening skills before and after the treatment, the researchers used two listening groups for pretests and posttests. Three portions comprise 30 questions on each listening test. The students are expected to comprehend a variety of spoken content on a variety of common topics in informal and neutral contexts. Announcements, interviews, and conversations about everyday life are all examples of recorded content. Section 1 comprises five brief recordings accompanied by five images. To help learners answer the ten multiple-choice questions, pay close attention to crucial information. For example, what does Hasan think about the announcement? (a) The abonnement is made at the airport; (b) The announcement is made at a bus station; (c) The announcement is made at a supermarket; (d) None of the above. Section 2. Based on the knowledge, perspectives, and viewpoints of the speakers on the radio, the students listen to the interview and write "T" if the statements are true and "F" if they are false for all ten true or false questions. The first question of the interview is about the likes and dislikes of sports. For example, Sara keeps herself engaged in various sports activities daily. (True/False) Section 3 is a casual conversation between two people discussing common subjects. Learners must identify basic facts on the tape to respond to the answers to the ten multiple-choice questions. For example, Jack and Ali are talking about … ? (a) Working conditions in a factory; (b) Living conditions in a village; (c) Sanitary conditions in the neighborhood; (d) Health effects of electronic gadgets.

4.3.2. Content analysis
Semi-structured interviews with twenty EFL teachers of listening skills classes were carried out. The main focus of the interview was on the constructive and critical differences between traditional and online teaching methods, as well as the methods they preferred to use in the classroom. The interview applicants who received interview offers were contacted once their courses ended. While female interviewees (N = 8) were interviewed online, male interviewees (N = 12) met in person at the department once the day, time, and location of the interviews were decided. The average duration of each interview was 9–12 min. Prior to the interview, the researchers prepared questions and verified them. The interview question contents were developed by the researchers based on their teaching experience in a blended mode of learning and consultation with the available literature. (EuroKids, 2023; Giarla, 2016; Make-MyAssignments, 2016; Raccoon Gang Blog, 2018) [41–44].

The interview questions were.

- What are the constructive perspectives (in terms of flexibility, motivation, cooperative learning, learning resources, time management, feedback and criticism, and LMS) of the blended modes of teaching and learning?
- What are the critical perspectives (in terms of maintenance cost, wastage of available resources, long-term engagement, limited face-to-face interaction, and demotivation) of the blended modes of teaching and learning?

4.3.3. Ethical considerations
To guarantee the participants' privacy, security, and autonomy, this study took various ethical considerations into account. First, the informants were told of the investigation's nature and goals and offered the option to join or not. Second, participants were given assurances that their participation was voluntary and that the informed consent process would be done in a language they could understand. Thirdly, there was no requirement for participants to offer a reason for their withdrawal from the research at any time. In addition, the study's informants were made aware of the concealment and privacy of their answers. The informants in the study were also protected from danger and discomfort, and they were not exposed to any risks.

The participants were given codes to identify them in the research's data, maintaining their anonymity. This study, using an experimental research design with (N = 30) pairs of students, was held at Najran University. Pretests and posttests were employed in this investigation to collect information from the informants, who were split into two groups. The ethical approval was obtained from the Deanship of Scientific Research, Najran University, Najran, KSA-wide Reference No. 011156-024377-DS. In addition, the researchers ensured several confidentiality measures to defend the anonymity of informants. Informants were assigned unique codes to maintain their anonymity. Data was stored securely on the personal computer with restricted access. Further, the researchers remain in contact with the participants using encrypted channels or platforms. The data will be securely disposed of or permanently deleted after the publication of this manuscript. Informed consent documentation was provided to participants, outlining the study's nature,

voluntary nature, and other confidentiality measures. These measures uphold ethical principles of participant privacy and confidentiality.

4.3.4. Instructional materials

The tests were created independently. Every test question was taken directly from the book *Interactions 1: Listening and Speaking by Judith Tanka and Paul Most*. The book was prescribed for the Listening and Speaking Course by the English Department, College of Languages and Translation at Univ. Name. The exercises from the five chapters were modified and selected for the tests. Along with comprehensive support and resources, it provides comprehensive skill coverage with a distinct accent on pronunciation. Additional lesson plans and resources are available for students to download on the hugely popular teacher's website. High-interest material is arranged into engaging, doable courses that use humor and creativity to inspire students to communicate and enjoy learning English.

4.3.5. Validity

Face Validity: Face validity involves an expert review of a study tool to determine its appropriateness for the target group, language clarity, and comprehensibility. It is the appropriateness of a research tool's content as judged by test-takers (Secolsky, 1987) [45]. In addition, it assesses the accuracy, acceptability, and significance of exam content as perceived by the individuals taking the test (Thomas et al., 1992). [46]. For the current research, a panel of experts reviewed the validity of the interview contents to determine whether they were valid in terms of.

1. Adequacy of the wording of statements
2. Soundness of language and grammar
3. The statements' applicability within the framework of the ongoing inquiry

A series of 30 exploratory questions made up the research instrument used in the study. The Pearson correlation coefficient between each question and the associated area of relevance was computed. The results are displayed in the following tabulation form.

There are two methods for assessing its validity. The first is that we can use the air count or the Pearson correlation score. If the score of the Pearson correlation or the air count is greater than >0.254, then the test is valid. If the score of the Pearson correlation or the air count is between 0.302^* to 0.744^{**}, which is greater than >0.254, we can conclude that the test is valid because it is greater than the minimum value. The second way is to look at the significance value. If the significance value is less than <0.05, the test is valid. The significant value calculated in Table 2 is 0.000–0.05, which implies that the test's validity has been established and its reliability has been confirmed.

4.3.6. Reliability

An instrument is reliable when it measures experimental variables consistently for the same results. Rosaroso (2015) states that any test needs to be reliable since it demonstrates how consistently a specific set of test takers perform on the same test when it is administered at different times [47].

4.3.7. Data collection

To respond to the research questions, data was obtained:

- Research question 1 was answered using a pair-sample *t*-test. Comparing two means from two related groups.
- To address research question 2, an independent sample *t*-test analysis of variance was utilized to resolve the significant gender-based difference in participant academic performance between virtual and face-to-face learning approaches.
- To answer study question 3, the authors carried out a semi-structured interview. A content analysis was employed to find out the constructive and critical perspectives of the teachers about the blended mode of teaching.

Table 2
Pearson correlation coefficient (N = 30).

No. Item	Person Correlation	No. Item	Person Correlation	No. Item	Person Correlation
1	0.502**	11	0.560**	21	0.359**
2	0.494**	12	0.344**	22	0.400**
3	.709**	13	0.464**	23	0.584*
4	.302*	14	0.589**	24	0.516**
5	.563**	15	0.586**	25	0.349**
6	.417**	16	0.673**	26	0.613**
7	.610**	17	0.582**	27	0.582**
8	.466**	18	0.611**	28	0.487**
9	0.663**	19	0.452**	29	0.675**
10	.744**	20	0.495**	30	0.654**

**. At the two-tailed 0.01 threshold of significance, the correlation is statistically significant.
*. At the 0.05 level, the correlation is statistically significant (two-tailed).

4.3.8. Procedure

After splitting the participants into groups and administering a pre-test, the experimental group got instruction in the form of listening exercises and pictures for descriptions through the Internet. The participants of the experimental group accessed their multimedia devices twice a week at a specific time while taking the online course for one term—roughly two months—this technique was repeated twice a week for 12 sessions. The exercises and basic illustrations based on the book "Interactions 1: Listening and Speaking by Judith Tanka and Paul Most" were taught. The same exercises were given to the control group in lecture theatres on the board, and printed pictures for descriptions were distributed to the participants in the classroom as well. Both the traditional group and the online group's participants took the posttest at the end of the treatment process. The outcomes of the pretest and posttest were then evaluated.

On the other hand, interviews were conducted with instructors teaching listening skills in the Department of English, Najran University, KSA. The comments and suggestions were recorded and discussed in the content analysis.

5. Data analysis

Quantitative information from participant replies was examined to learn more about their perspectives using SPSS program 26. A content analysis of the semi-structured interviews was used to assess the participants' viewpoints on traditional and online education regarding similarities and differences to adequately react to the study's research objectives. The pretests and posttests were given after the acquisition of consent. The participants received guarantees that the information would be handled with the utmost secrecy and would only be used for research about the current study. Additionally, it was requested of the informants that they confirm that their participation in the research was free and that they were allowed to leave the research at any time.

6. Results

6.1. The impact of online versus traditional instruction

Question 1 was addressed with a paired sample t-test, and descriptive statistics were computed using SPSS version 25. Table 4 below is called paired sample statistics, and it provides the descriptive analysis. The average scores of traditional methods (pre-and post-test are $\mu = 13.10$ and $\mu = 15.47$ and the standard deviations have values of $\sigma = 2.440$ and $\sigma = 2.3606$ respectively. The scores of pair 2 are $\mu = 11.67$ and $\mu = 25.57$, respectively. Their standard deviations, $\sigma = 2.708$ and $\sigma = 2.825$, are rather close together. So, the online teaching scores are higher than the traditional teaching scores in the paired-sample descriptive statistics.

The academic proficiency of EFL students in listening abilities was assessed by comparing the pretest and post-treatment performances of the two groups. This was done to assess the impact of online and traditional education. To investigate whether there were any noteworthy variations in the students' performance levels, a paired-sample t-test was used which compares means from two related groups using different sampling techniques.

Table 5 reveals the average (mean) and std. dev. of the online method are larger than those of the traditional method (μ-13.900 > -2.367) and ($\sigma = 3.916 > \sigma = 2.042$), respectively. The 95% confidence interval of the online mode is greater than the traditional mode (lower $-15.362 > 3.129$, upper $-12.438 > -1.604$) respectively. The table shows that the standard deviation of the differences, $\sigma = 1.874$, and the mean difference between the two data points, $\mu = -11.533$, are both statistically significant. The range of the mean difference's confidence interval is (-12.438 to -15.362). At 0.000, the t-value, which has degrees of freedom of df = (29), is significant.

We want to know: do these statistically significant mean differences impact the two modes of teaching under study? Three ways were used to address this question: First, is the critical value less than the t-value (c-value)? We looked up at the student's T-table. With 29 degrees of freedom, I looked up that c-value; it was 1.310. This t-value of 19.442 is much larger than 1.310. Second, is the p-value less than 0.05? The significance (2-tailed) value is 0.000, indicating a level of significance less than <0.05. Third, does the 95% confidence interval cross zero? It does not. Since the higher and lower values are both negative, they are adjacent to zero. Therefore, we determine that there is a significant statistical distinction between these means, and it is evident that the online teaching mode impacts the EFL students' listening skills more than the traditional modes of teaching.

Table 3
Reliability statistics (N = 30).

No.	Areas	Item	Cronbach's Alpha
1	Five brief recordings, accompanied by five images	22	0.900
2	A casual conversation between two people discussing a common subject	9	0.901
3	Talk on the Radio	12	0.899

According to Table 3, Cronbach's alpha stability coefficients, which are high, ranged in the domains between (0.895–0.907). Version 25 of the statistical program (SPSS) was utilized to examine the data. Cronbach Alpha is used to determine whether a study tool is stable, and the Pearson correlation coefficient is used to determine consistency.

Table 4

Analysis of pretest and posttest of the traditional and experimental methods: Descriptive statistics.

Pairs	Teaching Modes	Variables	N	Mean	Std. Deviation
Pair 1	Traditional Method	Pretest Control Group	30	13.10	2.440
		Posttest Control Group	30	15.47	2.360
Pair 2	Online Method	Pretest Experimental Group	30	11.67	2.708
		Posttest Experimental Group	30	25.57	2.825

Table 5

Analysis of Pretests and Posttest of the Traditional and Online methods: Paired sample *t*-test.

Paired	Teaching Mode	Pretest and Posttest	Paired Differences						
			Mean	Std. Deviation	95% Confidence Interval of the Difference		t	df	Signi. (two-tailed)
					Lower	Upper			
Pair 1	Traditional Method	Pretest Control Group Posttest Control Group	−2.367	2.042	−3.129	−1.604	−6.347	29	0.000
Pair2	Online Method	Pretest Experimental Group Posttest Experimental Group	−13.9	3.916	−15.362	12.438	19.442	29	0.000

6.2. The significant differences in academic achievement across genders among participants exposed to traditional and online teaching methods

To address study question 2, an independent sample *t*-test was computed.

Table 6 displays the *t*-test findings comparing male and female grades for both traditional and online learning modes. The gender means and standard deviation for males ($\mu = 15.052$, and $= \sigma 2.146$) and for females ($\mu = 16.181$, and $\sigma = 2.638$) demonstrated that even using the usual training method, there was no statistically significant difference between the male and female participants. Furthermore, the findings also show that there are no appreciable differences in the virtual instructional modes between participants who are male and female, with ($\mu = 23.63$ and $\sigma = 2.191$) for males and ($\mu = 24.36$ and $\sigma = 1.859$) for females.

The results of an independent samples *t*-test comparing the means of an experimental group and a traditional group, split down by gender, are shown in the table below.

Table 7 examines the probability value to see if it is less than 0.05. There isn't any notable distinction between the two genders in this instance, as the p-value for the typical teaching approach (0.212) and the p-value for the online teaching mode (0.361) are both larger than 0.05 or greater than 0. The confidence interval can also be examined to see if it passes zero. They crossed zero because, for each mode, the lower values are negative, and the upper values are positive. 95% CI of the traditional method (lower = −2.940 and upper = 0.682, respectively) and online mode values (lower = −2.345 and upper = 0.881), which denotes that there is no discernible gender-based difference between traditional and online teaching methods. For further clarity, the researchers examine the descriptive data to figure out the actual means. Male and female mean values for the traditional approach are 15.052 and 16.181, whereas male and female mean values for the online method are 23.63 and 24.36. The online mode's mean values were thus noticeably larger than those of the traditional mode, although the means of the scores from the traditional approach were not statistically different.

6.3. The constructive and critical perspectives of blended modes of teaching and learning

A qualitative analysis was computed to address question 3. Outcomes of the third study question (What are the constructive and critical perspectives of blended modes of teaching and learning?) revealed that blended learning offers flexibility, accessibility, effective communication, collaboration, and monitoring of student progress. Teachers can monitor progress, provide feedback, and use learning management systems like Blackboard for communication. In addition, participants highlighted the critical perspectives of blended learning, including, but not limited to, maintenance costs, waste of available resources, long-term engagement, limited face-to-face interaction, and demotivation. The constructive and critical perspectives of the teachers in a blended mode of learning are offered, collected through the interviewees, in the following selected excerpts. "T" stands for teacher.

Table 6

Description of the analysis of Traditional and Online methods according to gender.

Groups	Femininity	N	Average	Std. Dev.	Effect Size
Traditional Group	Male	19	15.0526	2.14667	0.52 Medium
	Female	11	16.1818	2.63887	
Experimental Group	Male	19	23.03	2.191	0.71 Medium
	Female	11	24.36	1.859	

Table 7
Analysis of the independent sample *t*-test based on gender.

Levene's Test					*t*-test for Equality of Means					
Groups	Gender		F	Sig.	t	df	Sig. (2tailed)	Mean Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Traditional Group	Male	Equal variances assumed	0.015	0.902	−1.277	28	0.212	−1.12919	−2.94086	0.68248
	Female	Equal variances not assumed			−1.207	17.688	0.243	−1.12919	−3.09758	0.8392
Experimental Group	Male	Equal variances assumed	0.134	0.171	−0.930	28	0.361	−0.732	−2.345	0.881
	Female	Equal variances not assumed			−0.972	23.952	0.341	−0.732	−2.286	0.822

6.3.1. What are the constructive perspectives (in terms of flexibility, motivation, cooperative learning, learning resources, time management, feedback, criticism, and LMS) of the blended modes of teaching and learning?

T2: Students can access resources from home at any time because of the availability and flexibility provided by blended learning. Teachers can also provide feedback on the assignments that students have submitted.

T3: A blended learning environment assures that students stay interested in what they are studying and that their time is spent learning effectively. Furthermore, by actively participating in the form of uploading content, downloading feedback, and utilizing other learning resources at a time that works for both parties, this association between educators and learners is strengthened by this method.

T5: Blended learning engages learners and instructors in effective communication and cooperative learning. Students in this mode of learning work together and cooperate through in-class and online conversations, in-class and online pair and group work, etc.

T9: Learning resources can be accessed anywhere, at any time, through the blended learning approach. With the aid of accessible resources, educators and learners can enhance their learning and teaching processes. This improves the experience of teachers using different tools in the classroom as well as the online interactions between learners and their instructors.

T13: Through blended learning, educators can track students' advancement and offer constructive feedback and commentary on their assignments. Furthermore, they can provide students with audio and video resources that serve as examples and excellent models of high-quality work.

T17: The blended mode of learning facilitates learning in a shorter amount of time and also makes connections between teachers and students, considering that blended learning doesn't need constant presence.

T 19: Using a learning management system like Blackboard, teachers may communicate with their students at any time and post their lesson materials. This ease of use enables teachers to instruct students whenever it is convenient for them, particularly in situations where they feel unable to finish the exercises in the classroom.

6.3.2. What are the critical perspectives (in terms of maintenance cost, wastage of available resources, long-time engagement, limited in-person interaction, and demotivation) of the blended modes of instruction?

T1: Blended mode, which combines traditional and online methods of teaching, is typically costly, particularly when the institution does not provide access to necessary resources and tools. Due to this circumstance, teaching and learning are hampered, and students typically aren't able to access the tools, materials, and other digital resources that are available.

T4: The blended mode of teaching and learning sometimes wastes available resources. It has been observed that not all available resources are necessary for teaching and learning. There are tools and other available resources that are rarely used in pedagogy in a learning context, and they go to waste in the absence of frequent use by teachers and students.

T8: Teachers' workload and involvement are increased by both traditional and online teaching and learning methods. Using the existing teaching and learning tools has been seen to take time, and it demands that both teachers and students remain engaged—especially when they are not exposed to the use of the newly available resources.

T9: In-person interaction between instructors and learners is restricted by blended learning methods. Due to this situation, students become lethargic and begin preferring the available resources, such as Blackboard and the LMS platform, to communicate with their teachers.

T11: One of the critical perspectives of the blended mode of learning is demotivation for students who are not exposed to using IT. This can have the effect of lowering students' motivation. It is acknowledged that not every participant, assignment, individual, or institution is a good fit for every kind of blended learning strategy. Additionally, students who are accustomed to attending in-person classes may be uncomfortable spending too much time in front of a screen.

According to the content analysis, it is apparent that the instructors are in favor of a blended mode of learning. Their observations suggest that the blended mode is effective in terms of student participation in classroom activities, collaborative learning, direct feedback, submission of listening assignments, etc.; however, the teachers also gave some critical perspectives, like passive participation of students, large class sizes, students' interest in participating, shyness, motivation, etc., that may hinder students learning.

7. Discussion and conclusion

This study showed that most of the participants had favorable attitudes toward online methods of teaching listening skills. The online method was beneficial since it offered learners ease and flexibility. Participants also indicated that an online interaction session is necessary to improve the learning process and enhance their listening abilities. The outcomes of this investigation align with those of Mohammad and Atif (2021), who attained similar results [18]. The outcomes of this investigation are in line with those of Banafshi et al. (2020), who demonstrated a notable disparity in the pretest and posttest grades of individuals who received online instruction in favor of online study [48]. Furthermore, the results of this study concur with Lo and Hew's (2020) findings, which show that learners who used the online mode exhibited noticeably better performance than those who used the traditional mode [49].

This study's results demonstrate that most of the respondents showed positive attitudes toward online methods while teaching listening skills. The outcomes included the convenience and flexibility offered by the online mode of teaching. Participants were of the view that online interaction sessions enhance the learning process and improve their listening abilities. These results agree with Mohammad and Atif's (2021) study, whose findings obtained similar results [18].

Some participants, however, raised potential problems with blended learning by observing technological constraints, such as delayed feedback, and the instructor's difficulties in efficiently managing information and communication technologies. This result is in contrast with Amanda R.H.'s (2018) study, which investigated how students felt about traditional teaching methods. The findings revealed that, in comparison to online learning, in-person instruction frequently produced somewhat higher results [21]. In a similar vein, Rachmah (2020) discovered that a greater proportion of students favored offline training over online teaching, perceiving it as a more efficacious method for acquiring knowledge and enhancing listening comprehension in a classroom context [22].

Given these discussions, the researchers suggest implementing a mixed-learning approach. This method implies that it is beneficial to combine in-person and online teaching methodologies in a skills class (Setyawan, 2019) [26]. According to Setyawan's research, improving academic success resulted from combining the new teaching approach, or online teaching mode, with the advantages of traditional teaching. Because of this, the researchers recommend the use of blended learning, acknowledging that educational systems may also employ traditional platforms concurrently. According to this study, successful listening skill improvement can result from a blended learning strategy that combines in-person and online teaching techniques [26].

Moreover, the content analysis highlighted the teachers' endorsement of a mixed learning environment. On the other hand, opposing views were voiced, including concerns regarding student indifference, motivation to take part in listening activities, and general participation. In addition, the outcomes of the analysis displayed how the mixed-instruction strategy works, especially when it comes to student-centeredness, group projects, direct feedback, and finishing work on time. Hence, the researchers are of the view that these issues can be resolved by developing and enhancing the blended learning model, which offers a thorough and practical method for enhancing listening comprehension in a language-learning context.

8. Suggestions for improvement

It is essential that learners receive enough exposure to English in order for them to improve their listening abilities. Institutions must provide students with a comfortable setting where they can speak English freely. By providing students with appropriate and varied training to enhance their listening skills, language barriers may be diminished. A study conducted by Nhat, N. T. H. (2021) promoted the idea that incorporating IT into language learning classrooms increases mixed modes and can be used to help students learn languages, particularly in terms of their listening skills. Such adjustments to curricula and institutional settings will greatly aid students in practicing their English language skills and enhancing their listening comprehension [50].

9. Limitations

The current study is limited in the context of online teaching, including technological constraints, difficulty in instructor management, and concerns about student passivity. Future research should explore blended learning models, improve instructor training, and investigate the long-term impact on students' language development, particularly listening skills. Comparative studies between traditional, fully online, and blended learning approaches can help educational institutions make informed decisions. Cultural and contextual factors should also be explored to tailor blended learning approaches to specific contexts. It's possible that the findings won't apply to a larger group of people, so future research should include a more diverse sample and other variables.

10. Recommendations and suggestions for future research

The study suggests that English language teaching should focus on improving listening skills. It recommends curriculum development that aligns with the research's requirements, providing training sessions that focus on listening skills. Further research should explore effective teaching methods and holistic language courses that incorporate all language abilities, including dedicated listening classrooms and noise-free learning environments. These suggestions aim to provide students with full language competency by facilitating a more engaging and effective learning environment. By implementing these pedagogical implications, educators and institutions can participate in the overall improvement of ELT, particularly in enhancing listening skills among students.

CRediT authorship contribution statement

Mohammad Owais Khan: Writing – original draft. **Sakeena Khan:** Methodology, Investigation.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:Dr. Mohammad Owais Khan reports financial support was provided by Najran University. Mohammad Owais Khan reports a relationship with Najran University that includes: employment and funding grants. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgment

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.heliyon.2024.e28510.

References

[1] D.K. Larson, C.H. Sung, Comparing student performance: online versus blended versus face-to-face, J. Async. Learn. Network 13 (2009) 31–42, https://doi.org/10.24059/olj.v13i1.1675.
[2] L. Lin, The effects of feature films upon learners' motivation, listening, and speaking skills: the learner-centered approach. Retrieved from the ERIC Database, 2002 470811.
[3] T. Hedge, Teaching and Learning in the Language Classroom, Oxford University Press, Oxford, 2000.
[4] T. Pangaribuan, A. Sinaga, K. Sipayung, The effectiveness of multimedia applications on students' listening comprehension, Engl. Lang. Teach. 10 (12) (2017).
[5] S. Nurpahmi, Improving listening skills by activating students' prior knowledge, ETERNAL (English Teaching Learning and Research Journal) 1 (1) (2015) 28–38, https://doi.org/10.24252/Eternal.V11.2015.A3.
[6] R. Ellis, Principles of instructed second language learning, in: M. Celce-Murcia, D.M. Brinton, M.A. Snow (Eds.), Teaching English as a Second or Foreign Language (31–45), National Geographic Learning/Heinle Cengage Learning, Boston, 2014, 2014.
[7] S. Hadijah, S. Shalawati, A study on listening skills and perspectives to first-year students in the English department of the academic year 2015/2016, J-SHMIC (Journal of English for Academic) 3 (2) (2016) 527, https://doi.org/10.25299/jshmic.2016.
[8] A.P. Gilakjani, N.B. Sabouri, Learners listening comprehension difficulties in English language learning: a literature review, Engl. Lang. Teach. 9 (2016) 123–133.
[9] U. Mutia, The Lecturers' Strategies in Teaching Listening Comprehension (A Descriptive Study at the Second English Education Department, Faculty of Teacher Training and Education, Muhammadiyah University of Makassar, 2020.
[10] C.R. Graham, S. Allen, D. Ure, Benefits and challenges of blended learning environments, in: Encyclopedia of Information Science and Technology, first ed., IGI Global, 2005, pp. 253–259.
[11] Mike Levy, Computer-Assisted Language Learning: Context and Conceptualization, Clarendon Press, Oxford, 1997.
[12] Luiz Amaral, Revisiting current paradigms in computer assisted language learning research and development, Ilha Do Desterro 60 (2011) 365–389.
[13] Paul Man-Man Sze, Developing students' listening and speaking skills through ELT podcasts, Educ. J. 34 (2) (2006) 115–134.
[14] B. Landrum, J. Bannister, G. Garza, S. Rhame, A class of one: students' satisfaction with online learning, J. Educ. Bus. 96 (2) (2020) 82–88, https://doi.org/10.1080/08832323.2020.175759.
[15] T. Muthuprasad, S. Aiswarya, K.S. Aditya, G.K. Jha, Students' perception and preference for online education in India during the COVID-19 pandemic, Social sciences and humanities open 3 (1) (2021) 100101.
[16] T.T.M. Tran, Microsoft teams in the context of freshmen ELF learning, Asia CALL Online Journal 12 (2) (2021) 12–23.
[17] S.A. Nebahat, S.S. Selim, Effects of digital stories on the development of EFL learners' listening skills, The Asian Institute of Research Education Quarterly Reviews 4 (4) (2021) 271–279.
[18] A.A. Mohammad, A. Atif Alshehri, The impact of learning platforms on fostering listening comprehension among Saudi high school students, المجلة التربوية لكلية التربية بسوهاج 85 (85) (2021) 59–76.
[19] P. Singh, R. Sinha, W.L. Koay, K.B. Teoh, P. Nayak, C.H. Lim, A.K. Dubey, A. Das, I. Faturrahman, D.N. Aryani, A comparative study on the effectiveness of online and offline learning in higher education, International Journal of Tourism and Hospitality in Asia Pacific 4 (3) (2021) 102–114, https://doi.org/10.32535/ijthap.v4i3.1212.
[20] A. Shakeel, et al., An effective online collaborative training in developing listening comprehension skills, Comput. Syst. Sci. Eng. 38 (2) (2021) 131–140, https://doi.org/10.32604/csse.2021.016504.
[21] R.H. Amanda, Online vs. traditional learning in teaching education: a comparison of student progress, Am. J. Dist. Educ. 32 (4) (2018), https://doi.org/10.1080/08923647.2018.1509265.
[22] N. Rachmah, Effectiveness of online vs. offline classes for EFL classroom: a study case in higher education, Journal of English Teaching, Applied Linguistics, and Literature 3 (1) (2020) 19–26.
[23] B. De, Traditional vs, Online Learning. eLearning Industry: (2018). https://elearningindustry.com/traditional-learning-vs-online-learning.
[24] S.C. Yen, Y. Lo, A. Lee, J.M. Enriquez, Learning online, offline, and in-between: comparing student academic outcomes and course satisfaction in face-to-face, online, and blended teaching modalities, Educ. Inf. Technol. 23 (2018) 1–13, https://doi.org/10.1007/s10639-018-9707-5.
[25] Z.Z. Yu, R. Hu, S. Ling, J.Y. Zhuang, Y.M. Chen, M.J. Chen, et al., Effects of blended versus offline case-centered learning on the academic performance and critical thinking ability of undergraduate nursing students: a cluster randomized controlled trial, Nurse Educ. Pract. 53 (2021) 103080, https://doi.org/10.1016/j.nepr.2021.103080.

[26] H. Setyawan, Blended method: online-offline teaching and learning, on students' reading achievement. English education, Jurnal Tadris Bahasanggris 12 (1) (2019) 22–33.
[27] K.T. Wong, G.J. Hwang, P.S.C. Goh, S.K.M. Arrif, Effects of blended learning pedagogical practices on students' motivation and autonomy for the teaching of short stories in upper secondary English, Interact. Learn. Environ. 28 (2020) 512–525, https://doi.org/10.1080/10494820.2018.1542318.
[28] B. Anthony Jr., A. Kamaludin, A. Romli, A.F.M. Raffei, D.N.A.L.E. Phon, A. Abdullah, et al., Exploring the role of blended learning for teaching and learning effectiveness in institutions of higher learning: an empirical investigation, Educ. Inf. Technol. 24 (2019) 3433–3466, https://doi.org/10.1007/s10639-019-09941-z.
[29] D.R. Serrano, M.A. Dea-Ayuela, E. Gonzalez-Burgos, A. Serrano-Gil, A. Lalatsa, Technology-enhanced learning in higher education: how to enhance student engagement through blended learning, Eur. J. Educ. 54 (2) (2019) 273–286, https://doi.org/10.1111/ejed.12330.
[30] J. Yuhong, C. Yingying, L. Jiasheng, W. Yiqing, The effect of the online and offline blended teaching modes on English as a foreign language learners' listening performance in a Chinese context, Front. Psychol. 12 (2021), https://doi.org/10.3389/fpsyg.2021.742742.
[31] F. Sulla, A. Aquino, D. Rollo, University students' online learning during COVID-19: the role of grit in academic performance, Front. Psychol. 13 (2022) 825047. https://doi:10.3389/fpsyg.2022.825047.
[32] A. Zhou, Investigating the impact of online language exchanges on the second language speaking and willingness to communicate of Chinese EFL learners: a mixed-methods study, Front. Psychol. 14 (2023) 117792s2.
[33] A. Mannes, Students' Voices on Online ESP Courses: Gender Differences, 2023. Available at: SSRN 4512585.
[34] J.T. Richardson, A. Woodley, Another look at the role of age, gender, and subject as predictors of academic attainment in higher education, Stud. High Educ. 28 (4) (2003) 475–493.
[35] N. Nistor, Stability of attitudes and participation in online university courses: gender and location effects, Comput. Educ. 68 (2013) 284–292.
[36] A. Alghamdi, A.C. Karpinski, A. Lepp, J. Barkley, Online and face-to-face classroom multitasking and academic performance: moderated mediation with self-efficacy for self-regulated learning and gender, Comput. Hum. Behav. 102 (2020) 214–222, https://doi.org/10.1016/j.chb.2019.08.018.
[37] T. Indrayadi, How to select participants in my research study? Sampling in quasi-experiment research. Sampling in quasi-experiment research (april 20, 2021), iJournals: International Journal of Social Relevance & Concern 8 (5) (2020).
[38] S.K. Singh, Advantages and disadvantages of probability sampling methods in social research, in: National Conference on Innovative Research in Chemical, Physical, Mathematical Sciences, Applied Statistics and Environmental Dynamics, 2015, pp. 14–18.
[39] L. Cohen, L. Manion, K. Morrison, Research Methods in Education, sixth ed., Routledge Falmer, London and New York, NY, 2007.
[40] M.D. Gall, W.R. Borg, J.P. Gall, Educational Research, sixth ed., Longman, White Plains, NY, 1996.
[41] EuroKids, Blended learning: advantages, disadvantages, and types, EuroKids (2023). https://www.eurokidsindia.com/blog/pros-and-cons-of-blended-learning-things-that-educators-and-students-should-know.php.
[42] A. Giarla, The Benefits of Blended Learning, TeachThought, 2016. https://www.teachthought.com/technology/benefits-of-blended-learning/.
[43] MakeMyAssignments, Blended Learning: Advantages and Disadvantages, MakeMyAssignments Blog, 2016. https://www.makemyassignments.com/blog/blended-learning-advantages-and-disadvantages/.
[44] Advantages and Disadvantages of Blended Learning - Raccoon Gang Blog, 2018. Raccoongang.com, https://raccoongang.com/blog/advantages-and-disadvantages-blended-learning/.
[45] C. Secolsky, On the direct measurement of face validity: a comment on nevo, J. Educ. Meas. 24 (1) (1987) 82–83.
[46] S.D. Thomas, D.K. Hathaway, K.L. Arheart, Face validity, West. J. Nurs. Res. 14 (1) (1992) 109–112.
[47] R.C. Rosaroso, Using reliability measures in test validation, Eur. Sci. J. 11 (18) (2015) 369–377.
[48] M. Banafshi, F. Khodabandeh, F. Hemmati, Comparing EFL Learners' responses in Online and Traditional classes: a mixed method approach, Turk. Online J. Dist. Educ. 21 (4) (2020) 124–142.
[49] C.K. Lo, K.F. Hew, A comparison of flipped learning with gamification, traditional learning, and online independent study: the effects on students' mathematics achievement and cognitive engagement, Interact. Learn. Environ. 28 (4) (2020) 464–481.
[50] N.T.H. Nhat, Developing bottom-up listening skills in a Google classroom-based EFL module, AsiaCALL Online Journal 12 (3) (2021) 47–57.