



Impact of Employing Photovoice Integrated with Creative Problem Solving Model on Iranian Intermediate EFL Learners' Speaking Skill and Attitudes

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ABSTRACT

Speaking is a multifaceted skill that involves many different areas, such as discourse, grammar, and sociolinguistics. As a primary means of communication, speaking is essential in any instructional program for language learning. Besides, Photovoice is a participatory learning method that represents the viewpoints, issues, and experiences of individuals or communities through photography. Following a mixed-methods design, the present study tried to investigate employing Photovoice on Iranian intermediate language learners' skill in speaking English. It also looked at how the participants felt about using Photovoice to learn languages. Using a convenient sampling procedure, a total number of 60 participants were chosen. Once their homogeneity was confirmed based on the Preliminary English Test, they were randomly divided into two equal groups of thirty participants, one experimental group and one control group. While the control group received typical language teaching using conventional methods, the experimental group followed the PHOTO model, which emphasized participatory photography, as well as the Creative Problem Solving (CPS) model for generating innovative solutions. Triangulation was also accomplished through conducting pre/post tests, a questionnaire, and an interview. Then, the data were summarized, and descriptive and inferential statistics such as one-way ANCOVA and paired samples t-tests were used. The results showed that Photovoice integrated with CPS was an effective method for enhancing students' speaking skill and emotional engagement in language learning. The findings can be helpful through new insights into language pedagogy, suggestions for researchers and language teachers in the study of speaking skill, and visual methods such as Photovoice.

KEYWORDS: Creative Problem Solving (CPS) model; Participatory learning; PHOTO model; Photovoice; Speaking skill

1. Introduction

Speaking skill plays a significant role in interpersonal communication, and improving learners' speaking abilities appears to be necessary. The majority of language learners evaluate their proficiency in a language primarily based on their speaking skill. Students should be able to communicate what they mean and comprehend what others mean to strengthen their language skills. Besides, many teachers believe that the purpose of teaching speaking is to enable students to effectively communicate by allowing them to express their opinions, feelings, and thoughts.

Photovoice is built upon the participatory methods of documentary photography, which provide context for individuals to express their perspectives (Nisa, 2021). Through the use of images, Photovoice participants can readily communicate their experiences and thoughts. This method has been recognized for promoting interactive learning and developing students' innovative thinking (Ferdiansyah et al., 2020), as well as boosting students' oral proficiency in a secondary English-specialized class (Bhatti, 2021). Likewise, teachers' questions can be accompanied by the pictures. The interactive aspect of the questions that the teachers provide helps to clarify the connection between the methods and the students' learning growth (Sa'adah et al., 2023).

A variety of teaching methods has been used to improve students' speaking skill, yet classroom observations and research have demonstrated that plenty of students have difficulties with speaking skill (Ashimovna, 2022). Based on Ur's (2021) classification, problems include limited involvement, inhibition, the use of the mother tongue in the classroom, and the absence of a theme to be spoken. Speaking in front of the class can be a source of anxiety for language learners. In addition to having trouble choosing a topic to discuss, some people struggle to articulate themselves in front of the teacher. Finding the right moment to contribute to debates can be difficult for certain other students, and some of them tend to use their mother tongue. These issues hinder language learners' ability to speak accurately and fluently.

In light of the above discussion, the difficulties that foreign language learners experience while speaking have led researchers to carry out the study on using the Photovoice method to teach speaking in the hopes of resolving the problems by incorporating learning media into learners' reflective learning. Despite the growing emphasis on communicative language teaching, EFL learners in Iran still struggle with speaking. For this reason, additional methods that actively engage students and improve their communication skills are needed. As a participatory learning method, Photovoice has obvious advantages over conventional teaching methods, since it allows students a reflective and pictorial means of communicating ideas, leading to greater engagement and less fear of speaking English in public. Through the integration of visual prompts, Photovoice creates a more dynamic and engaging learning environment in comparison to traditional methods, which largely rely on artificial speech practice.

Additionally, this study is significant because of its theoretical, practical, and pedagogical insights into language learning. Theoretically, it introduces Photovoice and creative problem solving (CPS) into the language learning methods, with implications on how visual-based participatory methodology constructs speaking development. Practically, Photovoice can be applied to language education to enrich language learning by ensuring participant involvement in meaningful communicative activities. It can provide EFL teachers with an innovative methodology to decrease the monotonous and boring atmosphere of speaking classes. Pedagogically, curriculum designers can strike a balance between procedural and theoretical knowledge. They may include interesting content to the curriculum and modify English speaking process to make it more dynamic, learner-centered, and process-oriented.

Moreover, utilizing Photovoice in the context of intermediate learners in Iran has not been extensively explored (Karimi et al. 2018, 2019; Pournia et al., 2025). It highlights the need for action research employing Photovoice to evaluate its effectiveness in addressing students' speaking issues. Thus, in the context of Iranian EFL, the research objectives were to investigate the Photovoice method integrated with CPS on the students' speaking skill and attitudes considering their experiences.

2. Literature review

The following sections synthesize a variety of sources to discuss theoretical and empirical research on Photovoice and English language teaching and learning.

2.1. Theoretical background of the study

Speaking is generally a skill for people to communicate with one another (Bhatti, 2021). It has been evident that students who can express their concepts and ideas via language in an impressive manner are higher achievers in academics (Ashimovna, 2022). Several methods have been proposed to eliminate learners' issues in speaking classes by managing both the quantity and quality of interactions in the speaking classes (Purti, 2018; Sa'adah et al., 2023; Sarani et al., 2020). Moreover, Photovoice is a participatory learning method that can be utilized to bring about individual and collective transformation (Ordem, 2023). Teachers' questions can be used to guide students to reflect on their learning process and regulate how involved they are in speaking activities (Banitalebi & Ghiasvand, 2023).

A review of the literature revealed that four primary Photovoice protocols or models had been used as a framework for speaking a language. Drawing upon Wang and Burris's (1994) SHOWeD model, students elaborated on the story's context, its characters, time and place, and the initial situation. Based on Graziano's (2004) Photovoice model, each photograph had a set of guiding questions. Participants explained the picture, what was happening in it, and why they took it, helping them explore their English language learning experiences and how the photos could create opportunities for improvement. In Koltz et al.'s (2010) PHOTO model, learners discussed their photos, which, combined with prompt reminders, led to powerful storytelling. They described the photo's context, their motivations for taking it, and their emotions while speaking. Finally, using Mitchell et al.'s (2018) 3Ws Photovoice model, students started by describing what they noticed in the picture, then explained how and why the phenomenon occurred, and why they took the picture. Answering the 3Ws model questions encouraged them to generate possible responses.

2.2. Theoretical framework of the study

In this study, the researchers followed Mitchell et al.'s (2018) 3Ws Photovoice model, a participatory learning method, as well as Treffinger et al.'s (2023) Creative Problem Solving (CPS) model, a model for generating and executing creative solutions systematically. Their inclusion is theoretically grounded in Sociocultural Theory (Vygotsky, 1978), Experiential Learning Theory (Kolb, 1984), and Communicative Language Teaching (CLT) that offer justification for interactive, student-centered teaching methods. The steps included the introduction of Photovoice in which participants were oriented to the process; understanding the challenge by determining the most significant issues to resolve; idea generation via brainstorming; preparation for action by organizing and planning for resources; taking action by implementing projects; reflecting and evaluating by determining outcomes and obtaining feedback; and finally, presenting a gallery walk to communicate the findings and engage with the visitors.

2.3. Empirical studies on photovoice in language learning and teaching

Photovoice can be used successfully in educational reform in addition to being a helpful method for researching social activities (Ciolan & Manasia, 2024; Sa'adah et al., 2023; Wass et al., 2020). Wass et al. (2020) combined more conventional data-collecting methods, such as open-ended focus group questions and the critical incident technique, with Photovoice, a visual data-collection method. They concluded that Photovoice provided a valuable methodological supplement to High Education (HE) research. However, they also pointed out that researchers should be aware of its limits. Ciolan and Manasia (2024) introduced self-written narratives and photos as data sources. The study demonstrated that offering the opportunity for active involvement in the learning process makes innovatory education the leading movement for teachers, institutions, and learners.

Furthermore, the Photovoice method sought to document and reflect students' strengths and concerns regarding the ELT course, promote critical thinking, and influence ELT policy through both large- and small-group discussions of photos (Afifah et al., 2023). The process involved four steps, namely planning, pre-focus meetings, photo capturing, and reflecting (Boamah et al., 2022). Photovoice has been applied in a multitude of studies to engage learners in critical thinking, ignite their passion for creativity, and develop research skills (Ferdiansyah et al., 2020; Mudra et al., 2023; Nisa, 2021). Ferdiansyah et al. (2020) identified three critical dimensions among students: peer support, self-motivation, and assimilation, which led to sociocultural adaptation skill development. A qualitative study by Mudra et al. (2023) revealed that Photovoice helped EFL students express their intense emotions about producing research papers and the challenges of publication. Thus, Photovoice was a helpful method for students and teachers to understand and use self-reflection in writing assignments (Nisa, 2021).

It has been investigated in some studies to find out the qualities of effective EFL English teachers through the Photovoice method (Mudra et al., 2023; Ordem, 2023; Sa'adah et al., 2023). They have stressed primary characteristics such as communication, cultural sensitivity, agility, dynamism, developing a joyful learning environment, and applying various teaching methods. The studies have revealed the importance of those parameters that successful EFL teachers have to possess (Sa'adah et al., 2023). Using the Photovoice method, the researchers examined the qualities of teachers from a different perspective, providing a more comprehensive understanding of what facilitates successful language teaching. Nonetheless, the effect of this method may differ due to diverse contexts and participants (Ordem, 2023).

Using Photovoice, and questioning strategies to enhance instructional materials in English language classes have been the subject of some studies in the Iranian EFL contexts (Banitalebi & Ghiasvand, 2023; Karimi et al., 2018, 2019). They have mainly concentrated on questioning strategies, teacher questions, and students' responses. Karimi et al. (2019) explored the effect of Photovoice on language learners' intercultural sensitivity and reflective thinking across gender. They found that Photovoice promoted learners' intercultural sensitivity and reflective thinking. In addition, the findings concluded that teachers should not limit their questioning to knowledge-based topics. They ought to pose questions that demand clarification and generate answers that are more in-depth and syntactically intricate (Banitalebi & Ghiasvand, 2023).

For EFL teachers in Iran, motivating students to collaborate in group activities that foster deeper engagement and comprehension has consistently posed a key challenge. Based on the findings of the relevant studies, cooperation has a notably beneficial effect on enhancing EFL learners' skills (Ghoushchi et al., 2021; Karimi et al., 2018; Sarani et al., 2020). Karimi et al. (2018) asserted that the utilization of Photovoice assignments in EFL classes could allow learners to investigate topics of personal interest and share creations with their classmates. The teachers' main focus should be on helping students become independent learners and fostering autonomy by teaching effective methods for learning languages (Sarani et al., 2020). When teachers have a well-designed teaching plan tailored to their students, academic success can be achieved, and learning English can become an enjoyable activity (Ghoushchi et al., 2021).

Regarding the aforementioned studies, while numerous studies have examined the effectiveness of photovoice in other academic domains, there aren't many studies that examine the effect of the Photovoice method integrated with the CPS model on the speaking abilities of Iranian intermediate EFL learners from an academic standpoint. Speaking is the skill to effectively use a language to communicate concepts, feelings, and information to and from other communicators. Given the advantages indicated above, it could be stated that Photovoice should be tried in classrooms. Students' speaking skill was expected to improve with this method, which could be used more regularly in the classroom. Furthermore, the researchers chose a setting where Photovoice was never used as a participatory learning method in language classes. Consequently, the following research questions were the focus of this study:

1. Does employing Photovoice as a participatory learning method integrated with CPS have any significant effect on Iranian intermediate EFL learners' speaking skill?
2. What are the Iranian intermediate EFL learners' attitudes toward employing Photovoice as a participatory learning method in their English language classes?

3. Methodology

The next section includes the research design and setting of the study, variables, participants, material and instruments, data collecting and data analysis procedures, as well as the explanations that address concerns about reliability and validity.

3.1. Design and context of the study

Using a convergent parallel mixed-methods design, the study collected both quantitative and qualitative data simultaneously. By collecting and analyzing both types of data separately but simultaneously, this design provided a comprehensive understanding of the impact of Photovoice on EFL learners' productive skills. The investigation followed a quasi-experimental design which comprised pretest and posttest equal groups. An experimental design made it easier for the researchers to evaluate how well Photovoice affected the speaking skill of language learners. Considering that Photovoice was a community-based language learning method, the photo-based studies relied heavily on community members, participants, and researchers (Karimi et al., 2019).

3.2. Participants

Using convenience sampling, out of 150 language learners enrolled in a private English language school in Ardestan, Iran, 60 intermediate EFL learners were selected. Because of the institutions' policies about interviewing, participant selection, and questionnaire distribution, individuals were chosen by convenient sampling. It was also chosen due to its practicality and ease of access; however, this method may limit the generalizability of the findings. Then, they were split up into two equal groups. Thirty individuals were allocated to the experimental group and another thirty to the control group. The participants have taken at least 8 years of English language classes. The scores of the Preliminary English Test (PET) were used to confirm the participants' homogeneity in English language proficiency, indicating that their proficiency was at an intermediate level. Table 1 briefly indicates the demographics of the participants.

Table 1. Demographic background of the participants

| | |
|--------------------|--|
| No. of Learners | 60 |
| Age | 17-20 years |
| Gender | Female |
| Native Language | Persian |
| Target Language | English |
| Population | Iranian Intermediate EFL learners |
| Institute | Private English Language Institute, Ardestan |
| Sampling Technique | Convenience |

In the present study, the researchers ensured the participants' respect, privacy rights, and protection from physical and psychological harm. All participants received information about the study and provided their consent for the data to be recorded and analyzed in compliance with ethical standards. They needed to provide written consent to participate in the research. More importantly, a digital copy of the images remained on the researchers' password-protected computer until data analysis was completed, and then it would be destroyed.

3.3. Material

Intermediate Top Notch 1B, authored by Saslow and Ascher (2015), served as the primary coursebook for both groups during the semester. Five units were designed to prepare language learners to communicate effectively in English, emphasizing all four skills and key aspects of the language. Therefore, learners had several opportunities to practice speaking English verbally. The course aimed to introduce natural English and provide students with strategies that they could apply outside of the classroom. Each session lasted 90 minutes and was held two times a week. The institute's term lasted 18 sessions, which equated to two and a half months for the study.

3.4. Instruments

The researchers used a variety of sources to get the necessary data. The primary source of data for this study consisted of the B1 Preliminary English Test (PET), a speaking pretest and posttest, a questionnaire, and an interview. The tests' reliability was

assessed by explicitly restricting the speaking themes and the amount of time that students needed to do so (Brown, 2015). Further, two experts in TEFL acted as raters and completed the scoring procedure. They calculated the Pearson correlation coefficient to measure inter-rater reliability and validate the correctness of the rating procedure. They also examined and established the validity of the content of the instruments. The upcoming sections provide further details on the instruments.

3.4.1. *Language proficiency test*

To ascertain the participants' general proficiency and to homogenize them in this respect, a sample of the Cambridge Test PET (Preliminary English Test B1) was administered. There were parts for speaking, listening, reading, and writing on this test. Level B1 was primarily designed for intermediate individuals aged 17 to 20 (Riera et al., 2024). The PET test's internal consistency for learners in this study was found to be 0.77, and it has the necessary validity as a standardized test (Nourdad & Mohammadi, 2022). Following the PET recommendations, the test duration was set to 140 minutes, and students who scored between 140 and 159 were classified as intermediate level.

3.4.2. *Pretest and posttest of speaking*

The researchers measured the students' speaking proficiency by giving them a speaking pretest and posttest of the TOEIC (Test of English for International Communication). The test was selected mainly because it was a pre-made, standardized test with a special scoring scale. There were eleven items on the test, ranging in difficulty from easy to challenging. The test guideline outlined the test's basic structure and indicated which speaking skill components would be assessed by each question. The tasks in each section include two questions about reading a text aloud, one about describing a photo, three questions about answering questions, three questions about responding using provided information, one question about offering a solution, and one about expressing an opinion.

The posttest was created by rearranging the pretest elements. According to Ordem (2023), all spoken languages are transient. It is impossible to repeat what someone says at a certain location and time, although it can be recorded. Because speech is spontaneous, context-dependent, and dynamic, learners are more likely to make mistakes in a natural situation. Each speaking test, whether pretest or posttest, took thirty minutes to be completed. The values of Cronbach's Alpha estimated for the pretest and post-test were 0.74 and 0.88, respectively. It indicated that the reliability values for the pretest scores were 'acceptable' and the reliability values of the posttest were 'very good' values based on the reliability standards suggested by DeVellis (2021).

3.4.3. *TOEIC speaking test scoring scale*

Following the standardized guidelines in the Examinee handbook: TOEIC Speaking & Writing tests (2022), Question 1 and Question 2 assessed pronunciation, while Question 3 assessed vocabulary and grammar. Questions 4, 5, and 6 evaluated cohesiveness in addition to grammar, vocabulary, and pronunciation. The procedure was repeated until all components in Questions 10 and 11 were assessed. Two raters were requested to take part in the scoring procedure. It is worth noting that both evaluators (one female and one male), one aged 48, and the other aged 55, possessed Ph.D. in TEFL and had over twenty years of teaching experience focusing on education for language teachers and English language assessment. Following the guidelines, item 11 was scored on a scale of 0–5, while items 1–10 were assessed on a scale of 0–3. Ultimately, the evaluations were added together and transformed into a number between 0 and 200.

3.4.4. *Questionnaire*

The attitude questionnaire, which was created based on existing literature, was used to gauge how the participants felt about the Photovoice method. The researcher followed Dornyei and Taguchi (2009) in constructing, administering, and processing the questionnaire. About 12 five-point Likert scale items that varied from strongly agree (5) to strongly disagree (1), made up the questionnaire. The Participants were asked to rate how Photovoice affected their self-esteem, motivation, ability to overcome negative emotions while speaking, autonomy, desire to speak in English, interactions with teachers and other students, creative expression, managing fear of speaking, and overcoming lack of confidence issues. The questionnaire was distributed manually, and only those who were in the experimental group responded within ten minutes. According to the reliability criteria proposed by DeVellis (2021), the questionnaire's reliability was 0.85, which was regarded as a 'very good' score. Moreover, two experienced EFL experts validated the questionnaire's content, confirming its relevance.

3.4.5. *Interview*

The researchers adopted Sa'adah et al.'s (2023) perspective on interviews as tools for engaging participants and exploring their viewpoints, while the interview framework consisting of four questions was developed following Dörnyei and Taguchi's (2009) guidelines. Thirty students in the treatment group participated in a semi-structured interview to learn more about their attitudes and discuss their thoughts on using Photovoice in their speaking sessions. They were questioned about the advantages and disadvantages of employing the Photovoice method along with the ideas they had to increase the impact of learning through this method. They were also asked if they liked using Photovoice for their speech practice. The interview proceeded with a request for participants to express their thoughts on the Photovoice method's overall efficacy in teaching English. Each interview,

conducted in English, lasted approximately 20 to 25 minutes. The intra-rater reliability of the coding made for the common themes of the interview amounted to 95%.

3.5. Data collection procedure

A total of 60 female intermediate EFL learners were selected through convenience sampling from a pool of 150 language learners enrolled at a private English institute in Ardestan, Iran. Based on their performance on the PET test, they were homogenized, with thirty placed in the experimental group and thirty in the control group. Before receiving the specific treatment involving Photovoice, participants took a TOEIC speaking pretest to assess their basic speaking skill. The intermediate Top Notch 1B served as the primary textbook for both groups. The experimental group engaged in the Photovoice method, expressing their viewpoints through photography and storytelling. Meanwhile, the control group focused on conventional speaking skill development methods, including role-playing, group discussions, and repeated drills.

In general, the treatment group experienced the Photovoice method along with the CPS model. In the first stage, the instructor introduced and implemented the Photovoice method. The students were given a speaking assignment or issue to explore, helping them understand related challenges. Next, they were divided into small groups to discuss the pictures and give presentations. They could work individually or collaboratively to generate ideas and explore different responses or approaches to the speaking activity. Students strengthened their speaking skills by producing images that reflected their viewpoints, sometimes capturing pictures that highlighted specific issues.

The second stage involved the practical application of the instructions. Students organized their thoughts, created outlines, and shaped their presentations. Teachers provided comments to help generate ideas and ensure alignment with the speaking exercise objectives. An LCD projector display was used to enhance students' attention and support the lecture. For each image, students responded to the 3Ws: **W**hat was taking place in the picture, **W**hy the picture was taken, and **W**hat could be done about it. Teachers also organized speaking engagements or rehearsal presentations where students received constructive feedback from both teachers and peers.

Lastly, students were encouraged to analyze themselves at the reflecting and evaluating stage. They reviewed and compared images during sessions, allowing them to assess beneficial adjustments for overcoming obstacles and improving their speaking skill. The teacher conducted a qualitative analysis of students' descriptions to explore their educational experiences. A schematic representation of the three phases is summarized in Figure 1.

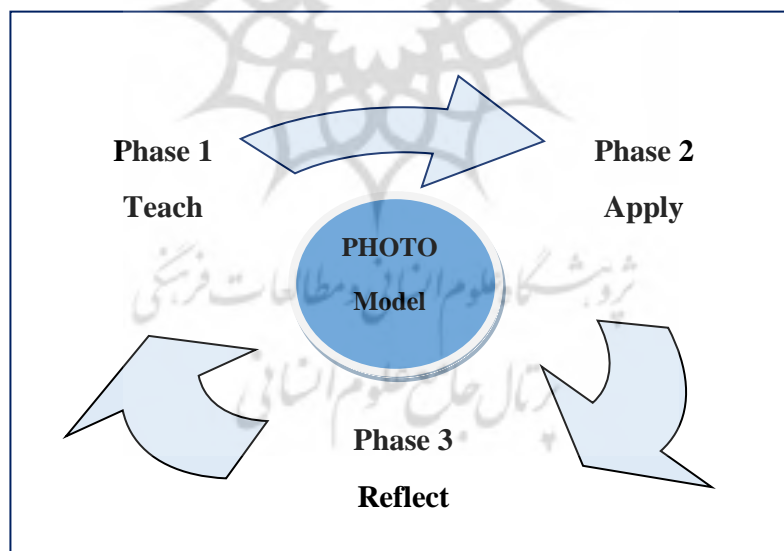


Figure 1. A schematic representation of the study's PHOTO model

At the end of the semester, photographs were displayed on the walls of the institute's spacious hall. Participants stood next to their photos and presented them in a gallery walk to other students and staff. The gallery walk allowed students to showcase their individual or group projects on posters while moving around to observe and discuss other photos, similar to how painters exhibit their artwork. Various questions were posed to gather further information, elaborations, and explanations on the issues under discussion. The procedure provided an opportunity to enhance their English-speaking skills and voice their concerns and needs in front of an audience.

During the procedure, thirty students from the experimental group responded to an attitude questionnaire, and all were interviewed. For a more thorough thematic content analysis, the interviews were audio recorded and then transcribed. Participants were informed about the recordings, and their consent was obtained at every stage of the data collection process. The researchers

aimed to identify primary and recurring themes. To maintain confidentiality, the researchers used codes or pseudonyms instead of real names when quoting participants' comments.

Nonetheless, the control group continued with conventional speaking exercises, including role-playing, subject discussions, and debates. Each session began with a few questions about the previous lesson. The instruction followed three main phases: grammar, logic, and rhetoric. Grammar focused on fundamental rules in the early stages, logic emphasized reasoning in intermediate levels, and rhetoric aimed at persuasive speaking and clear expression in advanced stages. Teacher-led activities included reading, explanations, and discussions, with no visual methods like Photovoice. After the instruction and treatment sessions, both groups took the speaking posttest. Once all data were collected, the analysis was conducted based on the study's objectives and data type.

3.6. Data analysis procedure

The researchers used SPSS, version 26 to analyze the data. The analytical phase included summarizing the pretest and posttest data and applying descriptive and inferential statistical methods, such as paired samples t-tests and one-way ANCOVA. The two-group pretest/posttest design, which compared the effects of two interventions using before-and-after measurements, required ANCOVA (Pallant, 2020). Since these groups could have differed in multiple ways, ANCOVA helped minimize some discrepancies. It was also useful when researchers relied on pre-existing groups rather than randomly assigning participants (Pallant, 2020). Additionally, descriptive statistics for the attitude questionnaire and thematic content analysis of the interviews were used to address the second research question. Finally, a cross-check was conducted, comparing data from test scores, participants' attitudes, and interviews.

4. Results

B1 Preliminary English Test (PET) was run to determine the participants' proficiency level before the study. The results of the descriptive statistics for the PET are given in Table 2.

Table 2. Descriptive statistics for the PET

| N Valid | 60 |
|------------------------|---------|
| Mean | 148.75 |
| Median | 147.00 |
| Mode | 147.00 |
| Std. Deviation | 4.36 |
| Variance | 19.03 |
| Skewness | .25 |
| Std. Error of Skewness | .30 |
| Kurtosis | -.71 |
| Std. Error of Kurtosis | .60 |
| Range | 19.00 |
| Minimum | 140.00 |
| Maximum | 159.00 |
| Sum | 8925.00 |

The mean score represented the average PET score across the sample, while the median and mode indicated the midpoint and the most frequently occurring scores, respectively. The standard deviation showed that the scores deviated from the mean by approximately 4.36 points, with a variance of 19.03. The distribution exhibited a slight positive skew, and the kurtosis value suggested it was somewhat flatter than normal. The PET scores ranged from 140.00 to 159.00, with a total range of 19.00. The sum of all PET scores was 8925.00.

4.1. Results of pre/post tests

The researchers examined two assumptions before performing an ANCOVA: first, linearity to determine whether a linear relationship exists between the dependent variable (posttest) and the covariate (pretest), and second, regression slope homogeneity. The scatter plots for each group indicated that the linearity assumption was not violated, as they showed a linear (straight-line) relationship, rather than a curved one (See Figure 2).

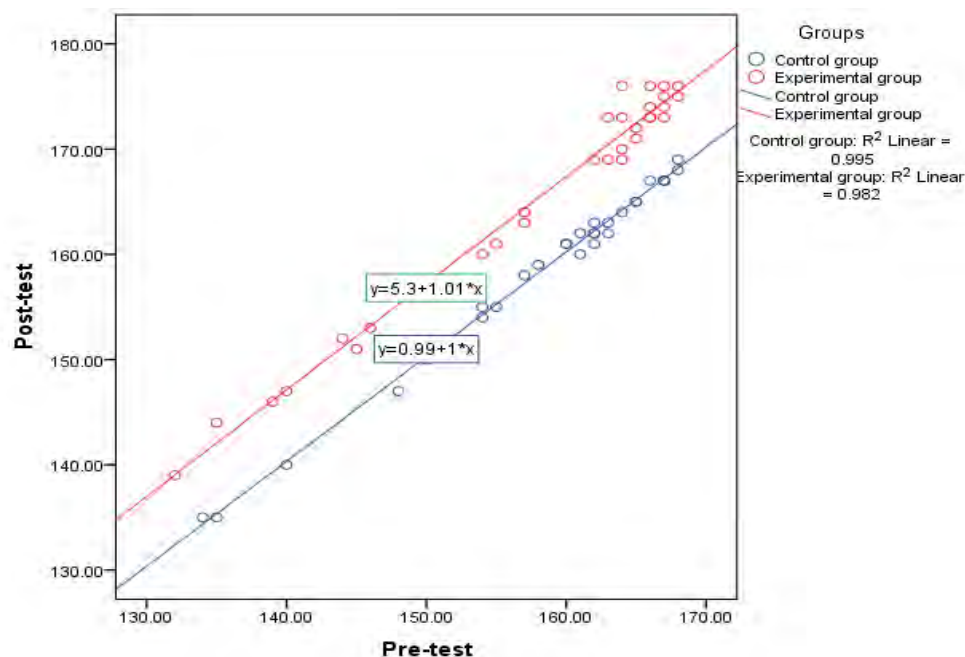


Figure 2. Scatter plot

It was evident from the research design that the groups were randomly selected and the samples were independent. The absence of interaction between the covariate and posttest scores supported the assumption of consistent regression slopes. Trimmed means and skewness analysis were used to explore the normality assumption. The results are presented in Table 3.

Table 3. Test of normality assumption

| | | | CG | EC |
|----------|----------------------------------|-------------|--------|--------|
| Pretest | Mean | | 144.32 | 144.31 |
| | 95% Confidence Interval for Mean | Lower Bound | 143.62 | 143.60 |
| | | Upper Bound | 145.02 | 145.01 |
| | 5% Trimmed Mean | | 144.37 | 144.33 |
| | Skewness | | -.43 | -.08 |
| | Kurtosis | | -.38 | -.44 |
| Posttest | Mean | | 144.71 | 150.11 |
| | 95% Confidence Interval for Mean | Lower Bound | 144.01 | 149.45 |
| | | Upper Bound | 145.41 | 150.77 |
| | 5% Trimmed Mean | | 144.74 | 150.19 |
| | Skewness | | -.46 | -.62 |
| | Kurtosis | | -.52 | -.30 |

The skewness and kurtosis values, as presented in Table 3, were within the acceptable range of ± 2 , indicating that the data met the normality assumption proposed by Tabachnick et al. (2013). Additionally, the trimmed means fell within the lower and upper bounds of the 95% confidence interval for the mean. Therefore, the analysis confirmed that the pretest scores followed a normal distribution. Levene's F test was conducted to assess the homogeneity of variances among the groups, with the results presented in Table 4.

Table 4. Homogeneity of variances test

| | | Levene's Test for Equality of Variances | | Df | Sig. |
|----------|--|---|--|----|------|
| | | F | | | |
| Pretest | | .01 | | 1 | .88 |
| Posttest | | .04 | | 1 | .84 |

The data presented in Table 4 showed that the variances of the two independent groups were nearly the same ($p > .05$). Likewise, the Sig. Values in this case were much higher than 0.05, indicating that the variances were homogenous or that the assumption of equal variances was not broken (Pallant, 2020). The homogeneity of regression slopes was investigated as shown in Table 5.

Table 5. Tests of between-subjects effects

| Dependent Variable: Posttest | | | | | | |
|------------------------------|-------------------------|----|-------------|--------|------|---------------------|
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
| Groups | 437.40 ^a | 1 | 437.40 | 131.74 | .00 | .69 |
| Pretest | .00 | 1 | .00 | .00 | .97 | .00 |
| Groups * Pretest | .46 | 1 | .46 | .32 | .57 | .00 |
| Total | 1304560.37 | 60 | | | | |
| Corrected Total | 629.95 | 59 | | | | |

a. R Squared = .69 (Adjusted R Squared = .68)

Regression slope homogeneity was tested to assess the interaction between the covariate and the independent variable in predicting the dependent variable. A substantial interaction would invalidate the ANCOVA results (Pallant, 2020). The significance value for the Group*Pretest data exceeded 0.05, confirming that the assumption of regression slope homogeneity was met. After verifying the assumptions of normality, equal variances, and consistent regression slopes, descriptive statistics were calculated to summarize the test results. Table 6 shows the descriptive statistics for both groups' pre/posttest speaking scores.

Table 6. Descriptive statistics for the pretest and posttest scores of the EG and CG

| Tests | Groups | N | Mean | Std. Deviation |
|----------|--------|----|--------|----------------|
| Pretest | CG | 30 | 144.32 | 1.87 |
| | EG | 30 | 144.31 | 1.88 |
| Posttest | CG | 30 | 144.71 | 1.87 |
| | EG | 30 | 150.11 | 1.76 |

The data in Table 6 indicated that, before the intervention, the speaking skill of both groups were nearly identical. This consistency raised the possibility that any variations in the posttest results were due to the Photovoice intervention rather than innate variations. Compared to the control group, which showed just a modest rise from the pretest to the posttest, the experimental group's mean posttest score climbed significantly after the intervention. This implied that the Photovoice treatment might have contributed to enhancing the speaking skill of the group that received the intervention. Then, a one-way ANCOVA was used to investigate how the Photovoice mediations affected the speaking abilities of the students. Table 7 indicates the statistical significance of the disparity.

Table 7. ANCOVA test results (posttest)

| Dependent Variable: Posttest | | | | | | |
|------------------------------|----------------|----|-------------|--------|------|---------------------|
| | Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
| Contrast | 437.40 | 1 | 437.40 | 131.74 | .00 | .69 |
| Error | 192.55 | 58 | 1.42 | | | |

After controlling for the covariate, the ANCOVA results demonstrated that the two groups' posttest scores differed significantly. Besides, the effect magnitude met Cohen et al.'s (2018) criterion of 'strong'. A paired samples t-test was also conducted to determine whether the mean difference between the pretest and posttest scores within the groups was statistically significant. The results are provided in Table 8.

Table 8. Paired samples t-test for the pretest and the posttest

| Groups | | | Mean | Std. Deviation | T | df | Sig. (2-tailed) |
|--------|--------|---------------|-------|----------------|--------|----|-----------------|
| CG | Pair 1 | Pre/Post Test | -.39 | 2.05 | -1.04 | 29 | .30 |
| EG | Pair 1 | Pre/Post Test | -5.80 | 1.52 | -20.83 | 29 | .00 |

The results indicated that the experimental group had made more improvement than the control group within the groupings. The paired samples t-test results showed that the increase was statistically significant for the experimental group exclusively ($P \leq .01$). Therefore, ANCOVA and paired t-test results contradicted the null hypothesis and indicated that the Photovoice intervention had a statistically significant impact on students' speaking skill. Figure 3 illustrates participants' pre/posttest speaking performance.

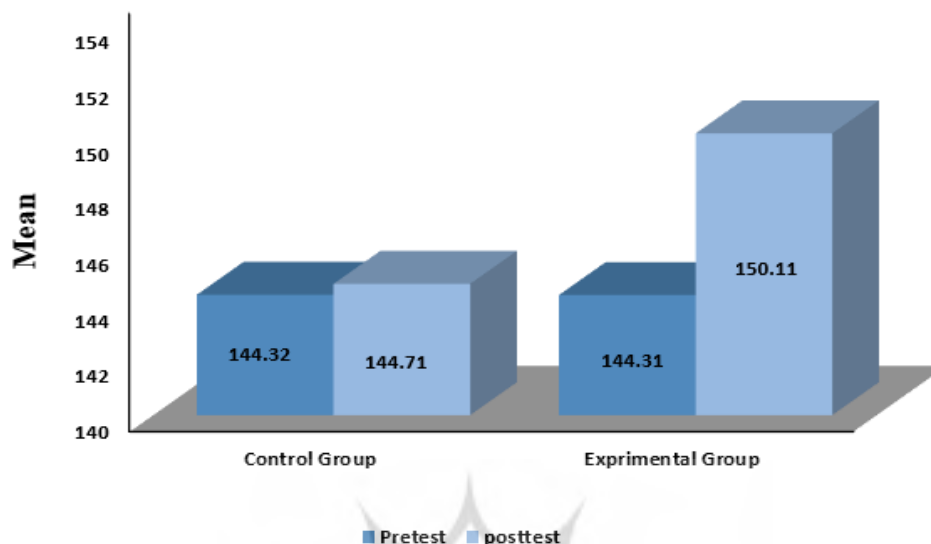


Figure 3. Groups' performance on the pretest and posttest of speaking

The bar graph depicted that participants in the experimental group outperformed those in the control group. In other words, the posttest results showed that the individuals who benefited from the Photovoice intervention outperformed the control group by a considerable amount. It was concluded from this difference that the Photovoice intervention successfully improved the experimental group's speaking skill.

4.2. Results of questionnaire

The descriptive results also provided insights into the students' attitudes toward using Photovoice to improve their speaking skill. Various aspects were examined, including self-confidence, motivation, overcoming negative emotions, independence, and creativity in speaking. These aspects helped to explain how Photovoice influenced different dimensions of the students' speaking abilities. The results are summarized in Table 9.

Table 9. Descriptive statistics for the attitude questionnaire

| Statement Photovoice ... | Mean | Std. Deviation | N |
|--|------|----------------|----|
| 1. increased my confidence in communicating in English. | 4.03 | .80 | 30 |
| 2. encouraged me to use English when I speak. | 4.10 | .75 | 30 |
| 3. helped me overcome unpleasant speech-related emotions. | 3.93 | .73 | 30 |
| 4. enabled me to be self-sufficient while speaking in English. | 3.86 | .81 | 30 |
| 5. made me want to speak more in English. | 4.06 | .78 | 30 |
| 6. enabled me to engage with my peers more. | 4.20 | .80 | 30 |
| 7. allowed me to engage with my teacher more. | 4.10 | .71 | 30 |
| 8. enhanced my ability to express myself creatively. | 4.33 | .75 | 30 |
| 9. encourage me to work more cooperatively with my peers. | 4.06 | .73 | 30 |
| 10. increased my involvement in the speaking class. | 4.03 | .66 | 30 |
| 11. helped me manage anxiety when speaking in public. | 3.80 | .84 | 30 |
| 12. made it easier for me to get over my speech phobia. | 4.06 | .73 | 30 |

The descriptive statistics in Table 9 indicated that the Photovoice project had a positive impact on various aspects of the students' attitudes toward speaking in English. The high mean scores and levels of agreement across all statements suggested

that the students experienced enhanced self-confidence, motivation, emotional support, creativity, and interaction with peers and teachers because of participating in Photovoice activities. These findings emphasized the multifaceted benefits that were perceived by the students in their speaking skill development through Photovoice.

4.3. Results of the interview

The thematic content analysis of the interviews revealed that Photovoice was perceived as a valuable and innovative method for enhancing English learning. It stimulated students' creativity, enhanced engagement, and improved communication skills. However, technical challenges, time limitations, and subjectivity issues were weaknesses of this method. Participants suggested integrating Photovoice with traditional methods, providing clear guidelines, and enhancing technological accessibility to maximize effectiveness. Some emphasized the importance of technical support for students unfamiliar with photography equipment to minimize learning barriers. Others highlighted the need for continuous assessment strategies to address subjectivity concerns and ensure consistent evaluation criteria. Table 10 summarizes the main themes and domains reflecting participants' experiences and perceptions of Photovoice in speaking classes.

Table 10. Participants' experiences and perceptions of the photovoice in their speaking classes

| Domain | Theme | Description |
|---------------------------------------|---|---|
| Strengths | 1. Creativity | Foster links between visual and linguistic skills |
| | 2. Critical Thinking | Promoted deeper exploration |
| | 3. Engagement | Fostered a sense of involvement |
| | 4. Visual Expression | Allowed effective expression of emotions |
| Weaknesses | 1. Technical Difficulties | Challenges with photography equipment |
| | 2. Time Constraints | Time required for editing and selecting photos |
| | 3. Subjectivity | Need for standardized interpretation |
| Suggestions for Improvement | 1. Clear Guidelines | Recommendations for clearer guidelines |
| | 2. Technological Accessibility | Offering equipment, training, and resources to tackle technical challenges |
| | 3. Collaborative Activities | Group exercises, debates, and role-playing |
| Overall Perceptions and Effectiveness | 1. Enhancing Speaking Skill | Enhancing speaking, and self-expression |
| | 2. Need for Complementary Methods and Structured Curriculums. | Combining it with other methods and integrating it into a structured curriculum with clear objectives |
| | 3. Importance of Teacher Training | Highlighting the need for teacher training programs |

In general, Iranian intermediate EFL learners' attitudes toward using Photovoice in their speaking classes were positive and they highly recognized its potential benefits while also looking for improvements and additional support to make the learning experience more successful. Many interviewees stated that their Photovoice experience helped them become more proficient speakers. They spoke English with greater assurance.

5. Discussion

The study was an effort to offer a thorough examination concerning the impact of employing the Photovoice method integrated with CPS on Iranian intermediate EFL learners' speaking skill and attitudes. The results of the statistical analysis of the speaking skill pretest and posttest showed that employing Photovoice integrated with CPS had a statistically significant impact on Iranian intermediate EFL learners' speaking skill. Moreover, the findings from the interviews and attitude questionnaires provided information about the Iranian intermediate EFL learners' attitudes toward using Photovoice in their speaking classes. Overall, the learners showed highly positive attitudes toward this method.

Reviewing pertinent literature showed that the study's results are in agreement with the findings of several researchers (Ferdiansyah et al., 2020; Mudra et al., 2023; Boamah et al., 2022). The finding revealed that it is beneficial to employ the photovoice method in language classes because it gives students additional opportunities to learn new words, expand their vocabulary, and work on their pronunciation. Photovoice was proven to enhance student productivity in speaking classes, help students become self-sufficient learners, provide an engaging learning environment, and boost students' self-esteem, which was also supported by Putri (2018). Using their imaginations, the students could explain each picture and explain what happened. In this regard, Mudra et al. (2023) claimed that Photovoice was successful in assisting people to communicate negative emotions. As a result, research indicated that the usage of Photovoice somewhat compensated for learners' lack of exposure to the target language and enhanced their language learning experiences.

From the attitude questionnaire, it was found that Photovoice made the speaking class more productive for the learners, aided them to become independent learners offered a motivating way for them to learn, and increased their self-esteem, which is also supported by Boamah et al. (2022). The learners had the choice to describe each photo by expressing their ideas about what happened. This media also enabled learners to talk about what frustrated them while speaking in front of their classmates. In this

regard, Sa'adah et al. (2023) asserted that Photovoice was effective in helping individuals to express their negative feelings. Hence, it appeared that the use of Photovoice partly compensated for the lack of learners' exposure to the target language and maximized their language learning experiences.

The data from the interview also revealed that even the shy learners in the treatment groups were satisfied with the Photovoice and were actively engaged in the class activities. Some studies indicated that the learners had highly positive attitudes toward employing Photovoice in speaking classes (Afifah et al., 2023; Ordem, 2023; Putri, 2018). In line with the findings of Ordem's (2023) study, Photovoice enhanced the learners' overall speaking abilities by supporting them in overcoming negative emotions while speaking in English. Additionally, consistent with Perti's (2018) research, the study found that Photovoice was inspiring since it gave the students a unique means of expressing themselves in English. The students' greater engagement in class, including their readiness to speak in front of the class and take part in debates, was indicative of this motivating factor (Afifah et al., 2023).

6. Conclusion

Employing Photovoice integrated with CPS in the teaching-learning process had several advantages, such as developing cooperation abilities, producing effective visual materials, encouraging creativity, and raising self-esteem. Students benefitted from Photovoice not just in terms of effectiveness but also in terms of increased motivation and interest in speaking. They appeared to like taking pictures, and they were also able to express their creativity through the camera. Stated differently, the participants' images allowed them to interpret their surroundings and represent the positive and negative aspects of their communities. They could also improve their ability to think critically and communicate ideas through the presentation. Their presentations demonstrated their capacity to explain or visualize the image. The results showed that the participants' speaking skills were positively influenced by the use of Photovoice.

To gain a deeper understanding of these findings, it is important to understand how Photovoice and CPS facilitated these changes to occur. Photovoice allowed the students to speak more meaningfully and authentically because they were able to personalize their photographs concerning their daily lives (Nisa, 2021; Sa'adah et al., 2023). This personalization aspect may have caused them to speak more and given them power. Moreover, the CPS model also enhanced students' creative thinking in solving and analyzing problems, which may lead to their critical thinking ability and speaking performance. These results are aligned with previous research (e.g., Bhatti, 2021; Ferdiansyah et al., 2020; Sa'adah et al., 2023), where interactive and visual methods have been shown to support deeper learning and engagement in language learning.

The findings also indicated that Photovoice promoted the application of more inventive and dynamic language techniques, including improved critical thinking, contextual word usage, and story building. Utilizing Photovoice integrated with CPS model not only made language production easier but also provided the learners with more interesting and meaningful learning experiences. Through the use of visual prompts, students were able to ground their language output in real-world situations, resulting in a more genuine and authentic context for teaching and learning the English language (Ordem, 2023). Moreover, most students reported feeling more motivated, self-assured, and satisfied with their language learning process.

Overall, Photovoice increased engagement and confidence in EFL learners by creating a more creative, dynamic, and supportive learning environment that solves frequent obstacles. As EFL education develops, integrating such cutting-edge methods can be crucial to generating more student-centered learning experiences, which eventually prepare students for communication in the real world. The utilization of Photovoice in education shifts the focus from community development to learning objectives and skill development. The dynamic activities that Photovoice participants engaged in had a significant impact on how they constructed sentences. Additionally, it provides instructors with deeper insights into students' self-transformation during ELT learning while also helping them understand the development of students' ELT knowledge and skills. Therefore, this teaching method may be significantly applicable to schools, universities, and other English learning environments that require specialized skills.

The research findings may also have some implications and applications for language learners and teachers, future researchers interested in English speaking skills, and curriculum designers. Students benefit greatly from photovoice, which stimulates their interest and inspires them to communicate in English. Peer interaction through the Photovoice method allows students to utilize English in actual situations, which makes them more fluent and confident. Using participatory methods like Photovoice in TEFL can also help teachers make language learning more convenient. Policymakers can help teachers overcome the challenges of teaching speaking skill by supporting and guiding curriculum developers to incorporate engaging content in the curriculum. Utilizing Photovoice combined with the CPS model at the macro level can change the learning process into a learner-centered and problem-solving-oriented one.

Although the application of the Photovoice methodology was extremely useful, it also had some limitations. The most significant limitation of the study was that because numerous commentaries can be presented on the photographs, their interpretations were relatively difficult for the researchers considering personal judgments and biases in the results. Because Photovoice relied heavily on experience and viewpoint, what was learned could be typical of specific traits among the participants rather than general trends in a larger population. Taking the students' viewpoints and researchers' biases into consideration could lead to another description of the events that were recorded.

Further studies might be oriented towards creating standard parameters or models of photo interpretation to reduce biases and ensure that meanings intended are suitably documented. Such policies need to include methods through which

participants verify their correctness in interpretation to refrain from the use of researchers' own interpretations. Future studies could also address these limitations by investigating the effects of changing the number of photos and evaluating how this influences participant engagement and the overall quality of data collection. More importantly, even if every attempt was made to evaluate and interpret qualitative data objectively, bias could have inevitably found its way into the findings. Thus, the results should not be applied generally to all situations. Lastly, it is crucial to highlight that the researchers fully accepted responsibility for any potential mistakes and flaws in the study.

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