

Research Article

Effects of Assertiveness Training and Cooperative Learning on ESP Reading Skills Considering Gender and Personality Trait: A Mixed Methods Study

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Abstract

Improving reading comprehension in English for Specific Purposes (ESP) through psychological and social strategies has received limited attention in language education research. This mixed methods study aimed to examine the effects of assertiveness training and cooperative learning on enhancing ESP reading skills, while examining the moderating roles of gender and personality traits (extraversion–introversion). A sample of 60 participants was randomly selected from the undergraduate students at the Islamic Azad University, Qom Branch, during the 2024–2025 academic year. Then, they were assigned to assertiveness training, cooperative learning, and control groups based on Cohen’s guidelines. A standardized ESP reading comprehension test and the Eysenck Personality Questionnaire were used as the data collection instruments. Gambrill and Richey’s assertiveness model and the Jigsaw cooperative method were conducted as the training protocols in the experimental groups. Quantitative data were analyzed using ANCOVA, with pre-test scores as covariates. The results of the study revealed that both experimental groups outperformed the control group, with cooperative learning showing the highest post-test gains. Gender significantly moderated the outcomes, with females achieving greater improvements, while personality traits had no meaningful impact. The qualitative analysis of the interviews and observations supported these findings, indicating enhanced comprehension and interaction in active learning groups. These results highlight the potential benefits of incorporating structured social and psychological learning strategies in ESP instruction, particularly with attention to gender differences. These findings suggest that educational programs should consider gender differences to optimize learning outcomes.

Keywords: assertiveness training, cooperative learning, ESP reading skills, extroversion, gender, introversion, personality traits

Cite as: Arbabi, F., Mirhashemi, M., Zargham Hajibi, M., & Tabatabaei, S.A.M. (2025). Effects of assertiveness training and cooperative learning on ESP reading skills with a focus on gender and personality traits: A mixed methods study *Mixed-Methods Studies in English Language Teaching*, 2(1), 1-24. <https://doi.org/10.71873/mslt.2025.1207974>

Received: 28/05/2025; **Revised:** 20/07/2025; **Accepted:** 25/07/2025; **Published:** 25/07/2025

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1. Introduction

Despite formal education, numerous English learners finish their studies with a limited level of proficiency in the four language skills. This shortfall is particularly noticeable in courses focused on English for Specific Purposes (ESP), where success relies on the ability to comprehend specialized texts and extract relevant information (Hoa & Mai, 2016; Movahhedi et al., 2024; Poedjiastutie, 2017). Ongoing challenges in reading within the ESP context are frequently associated with limited vocabulary knowledge, insufficient reading strategies, and low levels of learner engagement (Brown, 2017; Zhang, 2015). To tackle these issues, teaching methods that actively encourage participation, enhance learner confidence, and promote collaboration are essential.

Despite longstanding evidence that traditional language teaching methods are largely ineffective, many language instructors continue to rely on these approaches in ESP contexts. English teachers frequently raise concerns about the limitations of such methods in fostering learners' communicative competence (Brown, 2007). Traditional approaches often fail to engage students in meaningful interaction—a crucial component for developing practical language skills (Richards & Rodgers, 2014). Therefore, learners may excel at passing written exams yet struggle to participate in authentic conversations, highlighting the urgent need for more interactive, learner-centered methodologies. Consequently, even high-achieving students may find themselves unable to engage in natural conversation or comprehend spoken English in authentic situations (Liu & Jackson, 2008).

Beyond these pedagogical limitations, traditional methods can also impose a high cognitive load on learners, slowing reading fluency, inducing mental fatigue, and reducing overall lesson comprehension (Brüggemann et al., 2023). Yet research shows that the most effective language learning occurs through active engagement in speaking, listening, reading, and writing, with instruction tailored to students' specific needs, abilities, and classroom goals (Harmer, 2001). Assertiveness training (Gambrill & Richey, 1975) and cooperative learning (Johnson & Johnson, 2009) are two effective strategies, which have the potential for improving ESP reading skills, although their effectiveness may differ based on personal factors like gender and personality traits.

Conversation-based classrooms, where learners actively participate in discussions and dialogues, have proven particularly effective. However, students often encounter barriers to such engagement. Personality traits and gender-related differences can all influence participation. Research indicates

that girls often acquire language skills more rapidly in early childhood, a trend that may continue into adolescence (Adani & Capanec, 2019). Cognitive and

neurological differences play a role: girls' intellectual development tends to be more closely linked to linguistic ability, while boys rely on a combination of linguistic and non-linguistic factors (Köpke, 2021). Some studies suggest that girls generally outperform boys in foreign language learning, though outcomes are also shaped by age, motivation, and individual aptitude (Payne & Lynn, 2011; Główska, 2014). Moreover, research on brain activity suggests that women's predominance in left-brain processing supports verbal proficiency, contributing to advantages in language-related tasks (Li et al., 2022).

Another common barrier in language learning is reluctance to communicate, often stemming from shyness or fear of making mistakes in front of others. Many learners feel anxious about pronunciation, vocabulary, or grammatical errors, limiting their willingness to participate in discussions and hindering their academic progress (Tavakoli & Davoudi, 2017). Learners who develop assertiveness are better able to overcome communication anxiety, participate actively in class, and build stronger interpersonal connections (Fuspita et al., 2018). Structured assertiveness training, including behavioral rehearsals, role-playing, and guided skill-building activities, has been shown to enhance social and communication abilities, fostering confidence and improving classroom engagement (Sodikin et al., 2021).

Modern language education increasingly emphasizes interaction-based and learner-centered approaches. Socio-cultural awareness, collaborative methods, and the interactive hypothesis all highlight the importance of active participation and meaningful communication (Fahim & Haghani, 2004). Krashen's (1982, 1985) input hypothesis emphasizes that learners acquire language most effectively when they are exposed to comprehensible input through participatory activities rather than rote memorization. Cooperative learning, in which students collaborate in heterogeneous groups, encourages active participation, mutual responsibility, trust, and social skill development. Research demonstrates that cooperative learning is one of the most effective strategies for building contextualized language competence (Karamat, 2018; Ghaith & Bouzeineddine, 2003).

Personality traits, particularly introversion and extroversion, also influence language learning outcomes. Extraverted learners may naturally engage more readily in interpersonal communication, participating actively in speaking tasks, whereas introverted learners often rely on deliberate, reflective strategies to process and internalize linguistic information (Alagić, 2022; Ozbay et al., 2019). Studies indicate that both personality types employ

strategies effectively, though their observable behaviors may differ (Kakamad et al., 2024; Green & Oxford, 1995). This underscores an important point: visible participation in classroom speaking tasks does not necessarily equate to overall language proficiency (Delaney, 2012). Finally, research examining gender differences in language learning has produced mixed results. Some studies suggest female students outperform the males in strategic use and overall proficiency, while others find minimal or no significant differences (Główka, 2014; Green & Oxford, 1995).

Given the limited research comparing the effects of assertiveness training and cooperative learning on ESP reading, and the inconsistent evidence regarding gender and personality influences in this domain, this study sought to explore the causal relationships among these factors to offer valuable insights for designing effective, inclusive, and engaging language programs that prepare learners not just to pass exams but to communicate confidently in real-world contexts.

RQ1: How do assertiveness training and cooperative learning affect ESP reading skills, considering participants' personality traits and genders?

RQ2: In what ways do instructional style, gender, and personality trait shape learners' engagement, motivation, and interactions in ESP reading activities?

2. Literature Review

2.1. Reading in ESP Contexts

Reading in English for Specific Purposes (ESP) is not the same as reading a general English text, demanding more than just knowing grammar and vocabulary, and requiring an understanding of specialized subject matter and the ability to think critically about technical contents. ESP materials are usually packed with discipline-specific vocabulary (Nation, 2013). This connection becomes much harder when the terminology and syntax are unfamiliar. To navigate these challenges, learners often rely on strategies like scanning, skimming, and making educated guesses about meaning (Oxford, 1990). Unfortunately, in contexts such as Iran, where teaching still leans heavily on translation-based methods, students are not always given the chance to fully develop these skills (Mollaei et al., 2017).

Assertiveness training is a structured way of helping people express their thoughts and feelings clearly, respectfully, and without excessive anxiety (Alberti & Emmons, 2017). In language classrooms, this kind of training can

reduce shyness, build self-confidence, and make it easier for learners to engage in meaningful interactions (Sodikin et al., 2021). Research shows that assertive learners tend to participate more, ask questions, and handle complex material more effectively (Ogunyemi & Olagbaju, 2020). The approach connects well with Krashen's (1985) interaction hypothesis, which emphasizes that meaningful communication, combined with lower anxiety levels, supports language acquisition.

Cooperative learning is a structured teaching method where students work in small, diverse groups toward shared goals (Johnson & Johnson, 2009). In language learning, this often means building skills through group discussions, joint projects, or peer feedback. Research shows that when done well, cooperative learning boosts reading comprehension, motivation, and a sense of responsibility for learning. It also creates an environment where students learn from each other's strengths (Bermillo & Merto, 2022; Ghaith & Bouzeineddine, 2003).

2.2. Personality and Gender as Moderators in Language Learning

Not all learners approach reading the same way. According to Eysenck's personality theory (2009), extroverts are energized by interaction and thrive in dynamic, risk-taking environments, while introverts often prefer quiet, focused activities that allow for deep concentration (Liyana & Bartlett, 2013). Research shows that extroverts tend to gain fluency faster through active participation in class discussions, whereas introverts may excel in tasks requiring grammatical precision and careful reading (Hayati, 2021). Recognizing these tendencies can help teachers design more inclusive classrooms.

Gender can also shape how learners respond to reading tasks. Some studies suggest that women, on average, may have advantages in verbal processing and intrinsic motivation, which could explain (e.g., Shaywitz, 1995). Payne and Lynn (2011) found higher reading comprehension scores among female learners. These differences may be linked to strategy use, such as rereading and predicting content. However, the picture is not purely biological. Social influences matter as expectations and stereotypes can affect performance. The phenomenon of stereotype threat—where learners underperform because they fear confirming a negative stereotype—shows how gender effects in language learning are shaped by more than just ability (Pansu et al., 2016).

2.3. Empirical Studies

Several empirical studies have explored how assertiveness training, cooperative learning, personality traits, and gender influence language learning outcomes. Arbabi et al (2025) investigated the effect of assertiveness training on students' reading comprehension of specialized English texts is investigated in this study. The findings demonstrated that the students' ESP reading abilities were much improved by assertiveness training. By employing metacognitive techniques, the experimental group transformed reading into a participatory experience and demonstrated greater perseverance, decreased fear, and increased confidence. This implies that assertiveness training may be incorporated into educational programs and be a useful strategy for enhancing ESP reading abilities. Similarly, Sodikin et al. (2021) reported that assertiveness-based interventions reduced anxiety and improved both oral and reading performance in EFL settings. Ogunyemi and Olagbaju (2020) found that students who received assertiveness training participated more actively in classroom discussions and demonstrated better comprehension of complex texts.

Cooperative learning has also been shown to yield positive results. Bermillo and Merto (2022) observed that collaborative reading improved reading comprehension scores and increased learner motivation. In ESP contexts, these benefits extended to handling specialized vocabulary and dense academic content. Liyanage and Bartlett (2013) demonstrated that introverts and extroverts approach language learning differently, with extroverts thriving in interactive speaking tasks and introverts performing better in deep reading and analysis.

Despite these findings, few studies have examined the combined effect of assertiveness training and cooperative learning on ESP reading comprehension while also considering personality traits and gender. This gap highlights the need for research that integrates these variables to better understand how they interact in real-world classroom contexts. The effectiveness of assertiveness training and cooperative learning doesn't exist in a vacuum—it depends on the learner. Interactionist theory (Mackey, 2012) suggests that teaching methods work best when they match students' individual traits. For example, extroverts may get more out of the social exchanges in cooperative learning, while introverts may use assertiveness training to gain confidence, they need to tackle demanding texts (Sarem & Shirazi, 2014). From a psycholinguistic perspective, reading comprehension draws on both decoding skills and higher-level inference-making, processes

that can be influenced by factors like working memory and attention (Field, 2003). Neurolinguistic studies show that emotional engagement and social interaction can activate key language-processing areas of the brain (Pulvermüller, 2005). Gender differences in responsiveness to these approaches may also have biological underpinnings, including differences in brain lateralization and sensitivity to feedback (Billington et al., 2007). Taken together, these insights point toward a flexible teaching model—one that blends social and cooperative approaches with individual differences to meet the diverse needs of ESP learners.

3. Method

3.1. Design

This study employed a quasi-experimental mixed methods approach using a pretest-posttest design with a control group. The qualitative phase of this study involved direct observation of participants during their engagement with ESP texts before and after assertiveness training. The independent variable was group membership, which included two intervention groups (assertiveness training and cooperative learning) and one control group (no intervention). The dependent variable was the posttest scores on the ESP reading skills questionnaire.

The qualitative phase involved non-intrusive classroom observations of participants during their engagement with ESP texts and semi-structured interviews after each session. These observations focused on participants' reading behaviors, confidence levels, verbal participation, and interaction with peers. These qualitative insights complemented quantitative findings by providing a deeper understanding of the impact of assertiveness training on reading performance, thereby enhancing the credibility and richness of the research (Creswell & Plano Clark, 2018).

3.2. Participants

The study population comprised 1,550 undergraduate students at Islamic Azad University, Qom Branch during the academic year 2024-2025. The sample size of the study was calculated using Cohen's guidelines, assuming $\alpha = 0.05$, an effect size of 0.5, and a statistical power of 0.96, resulting in 20 participants per group (i.e., assertiveness training, cooperative learning, and control groups). The participants were initially selected through purposive sampling according to predefined inclusion criteria and randomly assigned to three groups.

Initial screening was conducted based on inclusion criteria (i.e., age range of 18–30 years, intermediate English proficiency, at least one semester of university study, and informed consent) and exclusion criteria (i.e., lack of willingness to continue participation). The English proficiency level of the participants was determined using the Quick Oxford Quick Placement Test (QOPT), a standardized and widely used diagnostic tool developed by Oxford University Press and Cambridge ESOL. According to the scoring guide, participants who scored between 30 and 39 were classified at the intermediate (B1) level, based on the Common European Framework of Reference for Languages. This level was considered appropriate for engaging with ESP reading materials while ensuring relative language homogeneity across groups.

3.3. Instruments

3.3.1. ESP Reading Comprehension Test

A researcher-made ESP reading comprehension test was developed based on relevant texts from students' academic field. This test was used as a pretest and posttest to assess the skills of reading comprehension, conceptual inference, and critical analysis using ESP texts. The test consisted of: a) five questions on reading comprehension, assessing the ability to extract key information from ESP texts; b) five questions on conceptual inference, evaluating the ability to interpret implicit meanings and relationships; c) 10 questions on critical analysis, measuring the ability to assess arguments and reasoning within ESP texts.

The test was developed based on expert evaluations to ensure that the items accurately reflect the intended reading skills. Specialists in ESP and language assessment reviewed the test to confirm its relevance to academic reading contexts. The test was aligned with the established theoretical frameworks in reading comprehension testing. The test's reliability was assessed using Cronbach's alpha, ensuring internal consistency. Additionally, test-retest reliability was examined by administering the test to a subset of participants at two different points in time, confirming stability in scores ($r=0.8$).

3.3.2. Eysenck Personality Questionnaire (EPQ)

The short version of the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975), consisting of 48 items, was used to assess personality traits, specifically extraversion and introversion. Sample items include: "Do you enjoy meeting new people?" and "Do you prefer quiet evenings to parties?" Responses were scored on a binary yes/no scale. In the present study, the index

of Cronbach's alpha internal consistency was 0.78 for the extraversion subscale and 0.74 for the introversion subscale.

3.3.3. Semi-structured Interview Guide

Semi-structured interviews were used as data collection tool. Interviews were carried out post-training to gather insights into participants' experiences, perceived benefits, and challenges related to assertiveness training. It helped in understanding the depth of behavioral changes and the effectiveness of the intervention beyond quantitative measures

3.3.4. Assertiveness Training Protocol

The assertiveness training protocol was based on Gambrill and Richey's (1975) model and consisted of 10 sessions designed to enhance participants' skills in assertive expression, refusal, and making requests, with each session lasting 90 minutes. The sessions focused on practical skills such as understanding one's human rights, exploring assertive ways to respond in different situations, managing anger constructively, making and refusing requests confidently, handling criticism effectively, and communicating clearly both verbally and nonverbally.

3.3.5. Classroom Observation Field Notes

A non-participant structured observation checklist was developed based on the core components of assertiveness behaviors (Gambrill & Richey, 1975) and cooperative learning principles (Johnson & Johnson, 2009). The checklist focused on verbal participation, turn-taking, emotional expression, eye contact, assertive verbal cues, collaborative engagement, peer support, participation, reading strategies, and interaction.

3.4. Procedure

Initially, the ethical approval was obtained from the Ethics Committee of Islamic Azad University (Approval Code: IR.IAU.QOM.REC.1403.148). All procedures conformed to the ethical standards of the 1964 Helsinki Declaration and its later amendments. Additionally, data were coded and analyzed anonymously to protect privacy and security.

The study proceeded in three phases: administration of the pretest, implementation of the intervention, and administration of the posttest. The intervention was based on Gambrill and Richey's (1975) assertiveness training protocol and delivered over 10 weekly sessions, each lasting 90 minutes. Session content included instructions on assertive behavior, role-playing, feedback, and structured homework. Topics covered included recognizing

personal rights, managing anger, saying “no,” handling criticism, and using verbal and nonverbal communication assertively.

To enhance participant engagement, Jigsaw cooperative learning was integrated into the sessions. Learners were assigned to small, heterogeneous groups to collaboratively study and teach assigned sections of the training content. This approach followed the guidelines of Johnson and Johnson (2009) and emphasized interdependence, individual accountability, and peer support. Criterion-referenced evaluation with a 75% mastery threshold was used to ensure learning outcomes.

Throughout the 10-session intervention, non-participant structured observations and semi-structured interviews were conducted in both experimental groups to collect qualitative data for the purpose of triangulation and in-depth analysis. Observation field notes were taken immediately after each session and later transcribed for thematic analysis. Observations aimed to capture the learners’ behavioral and interpersonal dynamics as they engaged in assertiveness training and cooperative tasks (e.g., group discussions, role-playing, feedback exchange). Patterns of communication, changes in self-expression, and peer cooperation were particularly monitored.

3.5. Data Analysis

The collected data were analyzed using both quantitative and qualitative approaches. The quantitative data were analyzed using SPSS Version 23. At the descriptive level, the mean, standard deviation, skewness, and kurtosis were calculated for the demographic variables and the dependent variables. To test the research hypotheses, an ANCOVA was conducted.

The qualitative data derived from structured classroom observations were analyzed using thematic content analysis. Observations were conducted throughout the intervention sessions to capture behavioral changes and interactional dynamics in each group. Field notes were transcribed and systematically coded using an inductive approach. Initial codes were assigned to recurring patterns such as verbal participation, assertive expression, responsiveness to peer input, collaboration, and nonverbal communication. These codes were then grouped into higher-order categories, forming themes that reflected the participants’ engagement and progress in line with the instructional goals of each intervention.

The qualitative data were analyzed manually through a thematic analysis approach, following the procedures outlined by Braun and Clarke (2006). The process began with repeated readings of the interview transcripts

to gain an in-depth understanding of participants' experiences. Subsequently, meaningful segments were coded inductively, and initial codes were categorized into emerging themes. These themes were reviewed and refined through constant comparison and cross-referencing between participant responses. To ensure credibility, two rounds of peer checking were conducted, and participants were consulted for member checking to validate the interpretations. This systematic manual analysis allowed for the identification of nuanced patterns and contextual insights regarding learners' perceptions of the instructional methods.

4. Results

4.1. Results for the First Research Question

To investigate how assertiveness training and cooperative learning influence English for Specific Purposes (ESP) reading skills across different personality types and genders, participants' pretest and posttest scores were analyzed across the assertiveness, cooperative, and control groups.

Table 1 presents the descriptive characteristics of the research participants across three experimental groups (Assertiveness, Cooperative, and Control), categorized by personality type (extraverted vs. introverted) and gender (female vs. male).

Table 1

Descriptive Statistics for Pretest and Posttest Scores by Group, Personality Type, and Sex

Group	Personality	Sex	N	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD
Assertiveness	Extraverted	Female	14	12.00	4.21	17.25	2.67
		Male	3	12.17	–	15.83	–
	Introverted	Female	2	10.75	2.47	15.00	1.41
		Male	1	3.00	–	10.00	–
Cooperative	Extraverted	Female	13	9.88	4.21	16.27	2.62
		Male	3	4.00	2.65	13.00	4.36
	Introverted	Female	3	12.17	7.18	16.33	4.04
		Male	1	8.00	–	14.00	–
Control	Extraverted	Female	10	12.40	4.01	16.00	3.49
		Male	3	7.67	8.08	12.17	6.53
	Introverted	Female	5	8.90	5.27	13.00	4.51
		Male	2	4.75	1.77	10.50	2.12

Note. A dash (–) indicates that the SD could not be computed because N = 1.

Across all conditions, mean reading scores improved from pretest to posttest, suggesting that both instructional interventions were effective in

enhancing ESP reading skills. The greatest improvement was observed among extraverted females in the assertiveness group, whose mean score increased from 12.00 to 17.25. Conversely, introverted males in the same group started with the lowest baseline ($M = 3.00$), though they still showed notable progress ($M = 10.00$ posttest).

In the cooperative learning group, extraverted females also demonstrated substantial gains from a mean of 9.88 to 16.27, and extraverted males improved from a mean of 4.00 to 13.00. Despite smaller sample sizes, introverted participants (both male and female) across all groups showed positive changes, indicating the effectiveness of the intervention across personality types.

Within the control group, although the improvements were more modest, gains were still evident—for example, extraverted females increased from 12.40 to 16.00, and introverted females from 8.90 to 13.00. Standard deviations tended to decrease slightly in several subgroups after the intervention, possibly reflecting more homogeneous performance levels. Overall, the descriptive data suggest that improvements in reading skills occurred across gender and personality variables, with somewhat greater gains in the assertiveness and cooperative groups compared to the control group.

Overall, the mean scores for posttests were greater than those for pretests in all groups, indicating a positive progression in scores over the duration of the study. The assertiveness–extraverted–female subgroup exhibited one of the most significant average improvements, rising from 12.00 ($SD = 4.21$) to 17.25 ($SD = 2.67$). Conversely, the control–introverted–male subgroup demonstrated minimal enhancement, increasing from 4.75 ($SD = 1.77$) to 10.50 ($SD = 2.12$).

The standard deviations reveal that some subgroups displayed more variability, especially among smaller groups, which warrants careful interpretation of results due to the limited sample size (e.g., $N = 1$ in certain male introverted scenarios). In summary, the trend indicates that both assertiveness training and cooperative learning were linked to significant increases from pretest to posttest, with extraverted females generally having higher initial scores and achieving strong outcomes in the posttest. Prior to conducting ANCOVA, Levene's test was performed to assess the assumption of homogeneity of variances. The result was not statistically significant, indicating that the assumption equality of variance was met and justifying the use of ANCOVA, $F(2, 57) = 0.94, p = .39$. Moreover, the other assumptions of ANCOVA, including independence of observations, normality of the dependent variable, homogeneity of variances, linearity between the covariate

and dependent variable, homogeneity of regression slopes, and reliability of the covariate, were checked and met before conducting the analysis.

Table 2

Tests of Between-Subjects Effects on ESP Post-Test Scores

Source	SS	df	MS	F	Sig.	Partial η^2
Corrected Model	642.45 ^a	5	128.49	32.86	.000	.75
Intercept	227.13	1	227.13	58.09	.000	.51
Extraversion	9.45	1	9.45	2.41	.12	.04
Gender	2.20	1	2.20	.56	.45	.01
Prior Knowledge	454.46	1	454.46	116.23	.000	.68
Group	34.99	2	17.49	4.47	.01	.14
Error	211.13	54	3.91			
Total	15114.00	60				
Corrected Total	853.58	59				

a. R Squared = .753 (Adjusted R Squared = .730)

As shown in Table 2, the overall model was statistically significant, $F(5, 54) = 32.86, p < .001$, explaining 75.3% of the variance in post-test scores ($R^2 = .75$). Among the predictors, prior knowledge ($p < .001$, partial $\eta^2 = .68$) had the strongest effect. Group assignment was also statistically significant ($p = .01$, partial $\eta^2 = .14$), indicating meaningful differences among the three experimental conditions. However, extraversion ($p = .12$) and gender ($p = .456$) were not significant predictors. Table 3 displays the results of pairwise comparisons using the Least Significant Difference (LSD) method.

Table 3

Pairwise Comparisons of ESP Post-Test Scores Between Groups

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig. ^b	95% CI	
					Lower	Upper
Assertiveness	Cooperative	-.62	.63	.33	-1.90	.65
	Control	1.24	.64	.05	-.03	2.52
Cooperative	Assertiveness	.62	.63	.33	-.65	1.90
	Control	1.87*	.63	.00	.59	3.14
Control	Assertiveness	-1.24	.64	.05	-2.52	.03
	Cooperative	-1.87*	.63	.000	-3.14	-.59

Note. No adjustment for multiple comparisons (LSD method).

*. The mean difference is significant at the .05 level.

The results in Table 3 indicate that the cooperative group scored significantly higher than the *Control* group (mean difference = 1.87, SE = 0.63, $p = .005$, 95% CI [0.59, 3.14]). Conversely, the control group scored significantly lower than the Cooperative group (mean difference = -1.87, SE = 0.63, $p = .005$, 95% CI [-3.14, -0.59]). No statistically significant differences were observed between the assertiveness and cooperative groups ($p = .33$) or between the assertiveness and control groups ($p = .05$), although

the assertiveness group's mean was slightly higher than that of control group. Overall, these findings suggest that the Cooperative intervention group outperformed the control group, while differences involving the assertiveness group did not reach statistical significance.

4.2. Results of the Qualitative Data Analysis

To complement the quantitative findings, this study explored how instructional style, gender, and personality traits influence learners' engagement, motivation, and interactions in ESP reading activities. Semi-structured interviews and classroom observations were analyzed using Braun and Clarke's (2006) thematic analysis framework, combining both inductive and deductive approaches. This process involved both inductive and deductive coding and led to the identification of three key themes: (1) instructional style and reading engagement, (2) gender-based motivation differences, and (3) the influence of personality traits on learning interactions.

Theme 1: Instructional Style and Reading Engagement

Learners' engagement with ESP reading tasks varied notably across the instructional methods. The participants in the assertiveness training group emphasized how confidence-building strategies, such as role-playing, improved their focus during reading. One participant reflected, "I felt more ready to handle complex texts after practicing real-life situations" (A19). Observational data also indicated that these learners were more self-directed and attentive during reading tasks.

In contrast, cooperative learning participants highlighted the benefits of peer-supported comprehension. For example, a learner commented, "Explaining parts of the text to each other helped us remember better" (B14). Observations confirmed that these students frequently asked questions, clarified technical terms collaboratively, and demonstrated stronger comprehension and retention. The control group, which received no intervention, showed minimal participation and surface-level engagement, often skimming texts without deeper interpretation.

Theme 2: Gender-Based Motivation Differences

Gender appeared to shape learners' motivational responses to instructional methods. Female participants in the Cooperative group reported increased confidence and reduced reading anxiety, noting that group interactions made the reading process more manageable (e.g., B16).

Observations supported this, revealing more active verbal participation by female students. In contrast, several male participants—particularly in the

assertiveness group—preferred individual reading strategies, focusing on structure and syntax rather than contextual meaning. One participant shared, “I like to analyze grammar on my own. It helps me stay focused” (A15). Although gender was not a significant predictor in the quantitative model, these qualitative insights point to underlying motivational preferences.

Theme 3: Personality Traits and Learning Interactions

Personality also shaped learning behaviors. Extraverted learners responded positively to the cooperative environment, stating that group discussion facilitated better comprehension. As one extrovert expressed, “I understood more when I could say my ideas aloud” (B12). Over 80% of extraverted participants reported increased engagement when interacting with peers. Meanwhile, introverted learners preferred the structured, independent nature of the assertiveness training sessions. They valued having time to process information privately and focus on internal comprehension strategies. One introverted participant noted, “It helped that I didn’t have to speak all the time; I could concentrate on the text itself” (A22).

5. Discussion

This study aimed to investigate the effectiveness of assertiveness training and cooperative learning on learners’ reading proficiency in English for Specific Purposes (ESP), while considering the moderating effects of gender and personality traits. The quantitative results showed that both instructional approaches led to improvements in reading performance compared to the control group, with the assertiveness training group obtaining the highest mean post-test score, followed closely by the cooperative learning group (Table 2). However, the differences between the experimental groups were not always statistically significant, as seen in the pairwise comparison results, where only the difference between the Cooperative and Control groups reached significance ($p = .005$).

Furthermore, the quantitative results revealed that group assignment significantly predicted post-test performance, alongside prior knowledge as the strongest predictor. This supports the idea that teaching method and learners’ background knowledge interactively influence language performance. Interestingly, neither gender nor extraversion significantly affected performance in the quantitative analysis. These findings challenge assumptions that extraverted learners inherently perform better in socially interactive methods, suggesting that both introverts and extroverts can benefit from well-designed interventions.

From a theoretical standpoint, these results are consistent with Vygotsky's (1978) sociocultural theory, which emphasizes the role of collaborative interaction within the Zone of Proximal Development (ZPD). The superior performance of the cooperative learning group supports the view that learners co-construct meaning more effectively in socially interactive environments. The findings also align with Johnson and Johnson's (2009) framework, which links cooperative structures with gains in comprehension and learner engagement. Additionally, the findings resonate with Deci and Ryan's (2000) self-determination theory, showing that environments promoting autonomy and competence foster deeper cognitive involvement. Finally, the lack of significant moderation by personality traits suggests that well-designed instructional methods can accommodate diverse learner dispositions, an observation that complements theories of adaptive instruction and individual learning styles.

While the assertiveness training group also demonstrated meaningful improvement, the results suggest that this approach may be more effective for learners who prefer self-paced, anxiety-reducing strategies. The application of role-playing and confidence-building techniques likely contributed to learners' enhanced ability to manage complex reading tasks independently, findings that support the affective filter hypothesis (Krashen, 1985). Assertiveness training, while less impactful statistically, also led to meaningful improvements in reading performance. Drawing on Bandura's (1997) self-efficacy theory and Krashen's (1982) affective filter hypothesis, it can be inferred that the intervention helped learners reduce anxiety and gain confidence, factors that are essential for navigating complex ESP texts. Role-playing and guided expression likely activated metacognitive strategies (Flavell, 1979), allowing learners to monitor comprehension and persist through difficult reading tasks independently. This is also consistent with findings from Iranian studies (e.g., Abdolghaderi et al., 2021), which reported that assertiveness-based interventions particularly benefitted female learners in ESP contexts.

Regarding gender as a moderating variable, qualitative data indicated that female learners responded more positively to cooperative learning, especially in terms of motivation and classroom interaction. This supports previous findings showing that female learners often excel in collaborative contexts due to higher verbal expressiveness and use of metacognitive strategies (e.g., Cornett, 2014). However, the quantitative analysis did not detect significant gender-based differences, suggesting that affective and behavioral responses may not always translate into measurable score gaps. Prior research also suggests that collaborative strategies are more effective when matched with learners' gender and personality profiles (Fauzi, 2023).

In terms of personality traits, extroverts in the cooperative learning group expressed stronger engagement, while introverts in the assertiveness training group preferred the structured and autonomous environment. This distinction supports Eysenck's (2009) recommendation for tailoring instruction to learner disposition. Despite the absence of significant statistical differences in performance, the behavioral patterns observed underscore the need for differentiated pedagogical strategies.

Taken together, the findings from both quantitative and qualitative strands affirm the efficacy of learner-centered approaches when adapted to individual and contextual factors. The integration of assertive and cooperative methods appears promising in addressing the needs of diverse learners within ESP settings.

6. Conclusion and Implications

This study aimed to examine the effectiveness of assertiveness training and cooperative learning in improving ESP reading skills among university students. The findings of this mixed methods study demonstrate that assertiveness training and cooperative learning are both effective in enhancing ESP reading proficiency, albeit in distinct ways. While the former showed stronger independent reading skills, especially in dealing with complex texts, the latter excelled in comprehension through peer discussion and interactive engagement. These effects were confirmed through both quantitative comparisons and qualitative insights gathered from learners.

Although personality traits such as extraversion did not significantly influence performance statistically, qualitative results indicate that introverts and extroverts benefit differently from various teaching strategies. Similarly, while gender did not emerge as a strong quantitative predictor, female participants consistently demonstrated higher motivation and confidence in group settings during interviews and observations.

Finally, these findings imply that personalizing instruction based on learner characteristics, such as communication preferences and social comfort—may enhance outcomes. Moreover, integrating both individual-focused and interaction-based methods in language programs could address a wider range of learners' needs. Educators are encouraged to design hybrid instructional models that combine the benefits of assertiveness-based techniques (e.g., role-playing, confidence building) with cooperative strategies (e.g., group discussions, peer scaffolding).

Previous research indicates that short-term programs, typically those with fewer than 10 sessions, may yield limited or inconsistent impacts on

language proficiency (Goldstein, 2022). Consequently, the short duration of the intervention in this study may have restricted the observable benefits of assertiveness training and cooperative learning. Future research should consider longer and more intensive training programs to capture the full potential of interactive teaching methods.

Although gender was examined as a moderating factor in this study, broader social influences—including gender stereotypes, cultural expectations, and individual experiences—may also affect reading proficiency and learning engagement (Master, 2021). These socio-cultural variables were not fully explored and may have influenced the outcomes. This study focused primarily on extroversion and introversion, yet other personality dimensions, such as conscientiousness and neuroticism, have been shown to influence language learning processes (Dörnyei, 2005). Limiting the scope to two traits may have overlooked additional personality-related effects on language acquisition.

The study involved 60 participants, which may limit the generalizability of the findings. A larger and more diverse sample is necessary to enhance external validity and ensure that the results can be applied across different populations and contexts. Addressing these limitations in future research could lead to a more comprehensive understanding of the factors affecting language learning and inform the development of more tailored and effective educational interventions.

The findings of this study highlight the effectiveness of psychosocial skill training, specifically assertiveness training and cooperative learning—in enhancing reading proficiency and learner engagement. These strategies can be applied in specialized language education by incorporating psychological exercises such as role-playing, group discussions, and assertiveness training to actively increase learner participation and motivation. Participants in this study demonstrated improved analysis of complex texts after assertiveness training, suggesting that such activities can enhance comprehension and confidence (Johnson & Johnson, 2009).

English instructors can implement cooperative learning techniques, such as group study sessions, collaborative projects, and critical thinking exercises, to facilitate active discussion and information processing. This aligns with research emphasizing cooperative learning's positive impact on language acquisition. Combining language training with the development of social and interpersonal skills can improve academic performance and student satisfaction (Zhang, 2015). Personality traits and social interaction styles were shown to significantly influence language learning outcomes in this study. These methods are particularly beneficial in disciplines requiring precise

comprehension of technical English, such as medicine, engineering, and law. Assertiveness training and cooperative learning approaches can help students navigate complex texts and technical terminology, fostering more inclusive and effective learning environments.

Future studies should investigate the impact of Assertiveness Training and Cooperative Learning on additional language skills, including writing and speaking, to provide a more holistic understanding of psychosocial training effects. Research should explore the sustained impact of these interventions over longer durations, as this study involved fewer than 10 sessions. Examining long-term outcomes would clarify the durability of the benefits. Further studies should assess the methods' effectiveness across beginner, intermediate, and advanced learners. This could reveal how gender and personality traits differently moderate learning outcomes in various proficiency groups. With the increasing use of digital tools in education, future research could examine how online platforms, virtual reality, and other interactive technologies complement assertiveness training and cooperative learning, and their effects on learner engagement and reading proficiency.

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