Interplaying Factors of Group Size and Personality Attributes of EFL Students in Using Process Approach to Writing

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Abstract

This research looked at group size and personality characteristics on learners' collaborative writing skills. A quasi-experimental technique utilized a non-randomized pre-test and post-test group. Three classes of 113 students took part in this research. The primary group of students (40 students) was given to produce explanation essays in pairs utilizing the process writing method. The writing work was done by the second class (33 students), with four students per group using the same writing style. The third session (40 students) used the process writing technique to write essays independently. Each of the three courses includes 10 hours of instruction, including a pre-and post-test. Students in pairs and teams had to fill out a personality type questionnaire to determine whether they were extroverted or introverted. The students' post-test results were compared using a one-way ANOVA and an independent sample t-test. The research findings revealed that students who worked in pairs or groups were better writers than alone. It was also discovered that students who worked in tandem outperformed students who worked in teams. Finally, there was no discernible difference in writing abilities among extrovert and introvert students when they cooperated in pairs or groups.

Keywords: kinds of personality, writing aptitude, collaborative writing, pair work, group work, individual work

INTRODUCTION

Assigning students to produce a text with other students in a communicative second/foreign language school is typical, especially in a classroom with many students. Working collaboratively to complete a writing task in one or more stages or throughout the entire procedure is referred to as collaborative writing. Students will benefit much from the activity since they will share their knowledge and solve language-related issues. As a result, scholars have focused their attention on collaborative writing in teaching a second/foreign language and learning to explore the impact of working together to complete a task on the development of language acquisition. Because of its capability to facilitate language acquisition, collaborative writing has acquired theoretical and pedagogical backing. Two critical language learning theories, Abasi and Graves' (2008) social constructivist perspective of learning and Zhang's (2019) output hypothesis theory, both promote collaborative writing.

Collaborative writing, according to extensive study, increases the quality of written material produced by students. Tyrou's (2021) analysis compares the text created by solo and tandem. The research outcomes revealed that, although pair essays were briefer than those reported by solo students, they were more precise and intelligent—second-language students composed argumentative essays in pairs and alone (McDonough et al., 2018). When comparing papers published in pairs to articles written independently, the findings suggested that documents written in pairs were more accurate. Another study looked at the usefulness of collaborative vs. solo writing in thirty-eight freshmen EFL learners who had to write paragraphs (Storch, 2021). According to the research, students' content, organization, and vocabulary improved when they worked together. Regardless of the potential advantages of collaborative writing, collaborating with students to accomplish a specific writing work necessitates several essential variables to achieve good collaborative learning. Instructors must consider those aspects to get the most out of assigning students to collaborative writing. Previous research has looked at several elements to see whether they are beneficial in collaborative writing. Language proficiency (Liu et al., 2018; McDonough et al., 2018; Sukarni & Rokhayati, (2021); Zhang, 2018; Zhang, 2019; Zhang, 2019), students' social status/position (Sundgren & Jaldemark, (2020), motives Chen et al., 2019; Chen et al., 2019; Zhang & Plonsky, (2020), personality (Hynninen, 2018.; Rahayu, 2021; (McDonough & De Vleeschauwer, 2019; Chen et al., 2019). Other characteristics are also being researched to determine whether they influence students' performance.

The research focused on two elements that may impact the success of collaborative writing: group size and personality types. Given that writing professors often assign students to collaborate in pairs or groups, these aspects are significant to analyze in this research. Because it is considered that several heads are better than one, the total of students joining in a collaborative writing exercise may have a varied influence on the outcome of language acquisition. It is stated that having more students participate in collaborative writing would offer more helpful input, corrective comments, and fix linguistic issues. Furthermore, personality types shape students' behavior, impacting learning (Cho, 2017). It is theorized that an individual's social behavior influences students' participation in collaborative writing. Furthermore, studies that specifically examined the possibilities that group size and personality types during collaborative writing may give for L2 acquisition are very sparse compared to other variables like student competence. As a result, to address a vacuum in the research, this study looked at the impact of group size and personality types on students' writing skills during collaborative writing.

Literature Review

Some studies have mixed results compared the efficacy of working in pairs with working in groups. In one study, students' interaction and language output were compared in seven tandem and seven small groups (three students) while participating in an oral communication exercise (McDonough & De Vleeschauwer, 2019). The research discovered that couples created more language and language-related events than small groupings (LREs). Another study (Chen et al., 2019) looked at the influence of collaborative writing assignments done in pairs, groups, and solo works on three elements of written text quality (accuracy, fluency, and complexity) and language-related episodes created during the collaboration. Small groups were superior for language acquisition because they fostered greater attention and gave more information sources to draw on, leading to more appropriately resolved talks.

The previous study (McDonough & De Vleeschauwer, 2019) focused on identifying the impact of group size on a communicative speaking activity than on finding which group size gave the most outstanding benefit during a collaborative writing assignment. (Chen et al., 2019), on the other hand, they did not look at the influence of collaborative writing on solo writing skills. The quality of the joint-text created during collaborative and solo writing impacted the effectiveness of collaborative writing. Due to the collaborative writing approach, there was no post-test to measure the students' writing abilities. In reality, the fundamental goal of collaborative writing is to teach children to write independently without the assistance of others. Consequently, the present research purposed to analyze the impact of collaborative writing on solo writing abilities by determining the quality of paper generated by students after they conducted collaborative writing.

Personality type is another component that might affect collaborative writing's efficacy. Given the variety of psychological techniques raised in personality research, SLA and psychology practitioners have defined many alternative definitions of personality. Individual differences, behavioral dimensions, and characteristics, on the other hand, have been essential concepts in the description of personality. Consequently, this study used a behavioristic definition of personality to investigate the effect of students' behavior in collaborative writing on their writing ability, which personality preferences may influence. According to Eysenck, personality is defined as a person's overall qualities and attributes that distinguish them from others Abe, (2020). Personality means "those parts of an individual's conduct, attitude, belief, thoughts, actions, and emotions that are acknowledged as typical and distinctive of that person and recognized as such by that person and others," according to the American Psychological Association (Sarkhosh & Najafi, 2020). Based on those criteria, personality may be defined as a person's character that explains how they interact with others and differentiate them.

Some personality models have been proposed in the literature to describe people's actions and characteristics. At least three personality type models exist, each based on a personality theory and depicting various personality features (Vorobel & Kim, (2017). Carl Jung's hypothesis on the Myers-Briggs personality type indicator inspired the original model. It blends Jung's method with other aspects of how individuals process information. The four types of personality and preferences are sensing-intuition, introversion-extraversion, feeling-thinking, and judgment-perceiving. The five-factor model is the model that follows: agreeableness, extraversion, conscientiousness, neuroticism, and openness to experience are all part of a five-dimensional personality hierarchy. Hans Eysenck's model was Eysenck's last model. Eysenck's personality category assumes that everyone has varying amounts of cortical arousal, influencing human behavior. Psychoticism, extraversion, and neuroticism are three personality traits in Eysenck's paradigm.

This study focused on extroversion, which was assumed to influence students' preferences for socializing with other students or preferring to work alone among the various personality types. Extroverts and introverts have diverse personality traits reflected in their behavior patterns. Extrovert and introvert are terms coined by Jung (1971) to describe how a person directs their energy toward the exterior or interior environment (Vorobel & Kim, (2017). Extroverts produce their energy on other people and activities in the outside world. They would rather spend a significant amount of time communicating or connecting with others.

As a result, extroverts are more engaged in global events than their personal lives. On the other hand, introverts concentrate their efforts on their inner world of feelings and thoughts. This kind of person prefers to be alone and avoids activities that involve a large group of

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people. Eysenck is both an extrovert and an introvert (Abe, 2020). Observed behavior was hypothesized. Extroverts are known for their sociability, talkativeness, responsiveness, liveliness, carefreeness, and leadership abilities. Silence, unsociability, reserve, and worry are all traits of introverts. Extroverts and introverts have distinct personality traits that coexist in people's personalities and impact how they behave in different circumstances. Several studies have sought to study the influence of personality types on learning success based on the limited parity type research on language acquisition. According to a study that compared the engagement of extrovert and introvert students in asynchronous communicative activities, introverts preferred this learning method over their peers. Introverts were given extra time to consider their ideas before discussing them with their peers (Hynninen, 2018). According to another research, introverted students with high anxiety levels are concerned about how other students respond to what they say during the debate (Rahayu, 2021). According to these results, introverted students avoided participating in group discussions.

Other research on the impact of personality types on language learning, on the other hand, has shown contradictory findings. Anggraini et al. (2020) investigated the effect of competitive and cooperative learning in the classroom on the reading comprehension of extroverts and introverts, respectively. A collaborative scenario discovered that extrovert groups did not outperform introvert group joint performance tests. According to another study, personality factors had no substantial influence on trainees' writing development (Kütt et al., 2019). It has been suggested that introverted students, like their extrovert counterparts, benefit from working in a cooperative group since they have the opportunity to discuss and develop their ideas with their peers (Li et al., 2020).

Objectives of the Study

While the previous study into collaborative learning and personality type research has shown mixed results, the findings are unclear. No study considered the influence of participants or personality types on students' writing skills. As a result, the following study issues were investigated: Is there a substantial difference in writing skill between:
(1) students who work in groups and those who work alone?
(2) those who work in tandem and those who work in a team?
(3) pairs of extroverts and introverts working together? and
(4) working in groups of extroverts and introverts?

METHOD
Research Design
The impact of team size and personality types on students' writing skills in collaborative writing was explored in this research. Experimental research was used to achieve the study's aims since it allowed the researcher to assess the impact of experimental therapy (Chen & Hapgood, 2021). A quasi-experimental approach was adopted in this investigation, including non-randomized pre-and post-test groups. It was impossible to allocate persons to the experimental or control groups at random because of the academic organization. It was essential to employ subjects of study that had previously been grouped into courses in this circumstance (entire class).

The second purpose of the research was to see how personality types influenced students' writing abilities. This research strived to see how various writing methods, such as collaborative and solitary writing, influenced students' writing ability. Extrovert and introvert groups were formed from students working in groups and couples. The researchers looked at the average written text score of pairs of

extrovert and introvert students who worked together. A comparison was made between the mean of extrovert students working in teams and the mean of introverts to investigate how personality factors impact writing ability. After the findings indicated that collaborative writing produced considerable gains in terms of the norm compared to the personal essay, the inquiry continued to determine the optimum grouping approach for collaborative writing in tandem and teams.

Participants

The research target demographic was EFL students who participated in the English for Specific Purposes course (ESP). Students in the quarter semester of the Mathematics department at a University, studying English 2 as an obligatory subject after finishing earlier English courses were accessible. One hundred ten students in English 2 were separated into four classes to develop their writing abilities. Because of several factors, mathematics students enrolled in an English 2 course were selected for this investigation. They began by studying English to boost their academic writing. Furthermore, students learned how to write an explanation essay and create an explanation text this semester. Moreover, they had already completed the English 1 and Extensive English 1 courses to enhance their reading and speaking abilities. Because each subject carried three credits, English was taught in an integrated manner. As a result, they had identical material baseline knowledge and learning experiences.

As previously said, four courses were offered for this research, and the department allocated them to those classes based on the students' choices, regardless of their English abilities. Three out of four classes were selected to join in the research because it was impossible to choose students randomly and put them in this educational system. Because the overall number of learners in those classes was almost fair, the current study was confined to three courses (A, B, and C), whereas class D had fewer

students than the other classes. Each of the three groups received a different kind of treatment. Thirty students in class A were designated to work on a collaborative writing project in tandem. In contrast, twenty-eight students in class B were allocated to work on a collaborative writing project in four groups. In class C, thirty students were given to work on solo projects.

Instruments

Some research tools were designed to gather data for this study, including a writing exam, a questionnaire, and a scoring rubric for judging the students' explanation essays.

Writing Test

Before and after treatment, learners were given a writing test to assess their writing ability. It assessed students' performance on a specific writing task to the scoring rubric's criteria to determine how well they spontaneously wrote in English without corrections or editing tools. A set of steps were followed by the researcher to get the proper writing test for the study's goal, which involves designing the blueprint, writing the prompt, verifying the draft (both the blueprint and the quick), amending the draft, testing out, assessing the try-out outcomes, and assembling the final form.

The themes should be relevant to the educational level and interests of the students. To do so, the researcher looked at the drafts produced by senior year students who were not chosen as study participants and uncovered several interesting problems. The following essential variables were taken into consideration while creating the exam instructions: It indicated the topic on which the paper was being written; It specified the duration of the student-created exam; it specified how much time the students have to complete the writing; and, it instructed the students on what they should include in their writing.

Questionnaire

The questionnaire was the following tool used to acquire the necessary data for this study's

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personality types. There were a variety of questionnaires available to evaluate personality types with excellent validity and reliability. However, most of them were employed to measure sensing/intuition, extraversion/introversion, judging/perceiving, and thinking/feeling, among other personality characteristics. Because this research aimed to test extroversion and introversion personality types, a suitable questionnaire should be developed from the existing ones to achieve the study's goal. The Eysenck Personality Inventory questionnaire was chosen for various reasons among those sorts of questionnaires. First, the questionnaire questions were created using Eysenck's well-defined indicators, identical to the indications utilized in this research. Second, it was predominantly used in other studies (Bashori et al., 2021) that looked at the influence of personality type on language learning, proving its validity and reliability in both content and application.

Eysenck's questionnaire consisted of 57 yes-no questions on respondents' preferences for extraversion, introversion, and neuroticism. Because some of the Eysenck questionnaire's questions were meant to assess neuroticism, none were appropriate for this study. Twenty-two questions were picked from Eysenck's 57 questions to determine students' personality types. The questions were rephrased to ensure that students understood them correctly and were to the study's context and purpose. Additionally to the adapting approach, 51 more questions were needed to capture the most thorough and precise information possible, which the Eysenck questionnaire could not provide.

Following the questionnaire's questions, the items were subjected to expert assessment. The objective of the audit was to make sure the things were fit for their intended use. The questionnaire was evaluated by a professional with a background in psychology. With over fifteen years of teaching experience, the expert was a senior professor and Dean of the Psychology Department. The review procedure was qualitative, with the expert being asked to express her thoughts on the instrument in terms of substance and clarity, using an assessment sheet that outlined numerous components of the questionnaire for her to examine. She was also asked to recommend any alterations or revisions that were required. The questionnaire had to be ready for field testing once the independent expert had evaluated it. The field testing drew 120 people from diverse disciplines. They were chosen because they had a background similar to the study's topic. The field test participants should reflect the study's subjects. They were to act as though they were prospective test-takers as much as possible. Additionally, the examinees should be motivated to do their best when replying to the items. The form comprises 73 questions, and answering them took me around 10 minutes. Because numerous surveys were deemed invalid because respondents failed to respond to one or two questions, only 100 were selected for data analysis.

Data acquired during field testing was used to assess the questionnaire's validity and reliability. The goal was to enhance the technical quality of the instrument by highlighting non-functional choices that should be modified or deleted. In practice, the Pearson Product Moment method was employed, with an r table of 0.195 acting as the minimum item validity threshold for 100 respondents (N-2). The investigation found 46 elements to be valid, with an observed value greater than 0.195. Meanwhile, 27 items were invalid and were removed from the final survey. Even though not all eligible items were included in the final questionnaire owing to their high validity ratings, 34 were considered adequate for assessing students' personalities. The reliability coefficient, which was used to judge whether or not the questionnaire was trustworthy, was also calculated using Cronbach's alfa. The determined Cronbach's Alpha in the statistical analysis description was.0788, based on the

study. The result was regarded as satisfactory, and the questionnaire was trustworthy. The final questionnaire has 34 items that were chosen based on the validity and reliability testing results from the pilot study.

Scoring Rubric

A scoring guide was utilized to grade students' writing abilities as the final instrument in this research. In this investigation, an analytical scoring guide was used. Instead of a single score, it's a method for assigning points to writing quality depending on multiple factors (Zhang & Crawford, (2021). The whole scoring approach was chosen from available alternatives, including holistic and primary characteristic scoring. It was the most relevant one to apply in this research because it aimed to assess students' abilities to write an explanation essay. Each of the five components of writing that make up writing quality has its own set of requirements to satisfy. Students had to show that they understood the objective of an explanation text and offer relevant material in the form of facts and details that addressed the how questions in the content component.

The ability of the students to (a) Write a clear statement that explains what occurred; (b) compose a detailed and exact description in which all features are listed in order of importance, and (c) compose a well-developed ending paragraph that reinforced the primary concept, underlined the essential points, and stressed the topic's relevance or value in an exciting and innovative way. Subject and verb agreement and the use of reasonably advanced structure and simple present tenses were all

explored. The focus of vocabulary was on delivering the desired message with precise word choice and word structure. The last category was mechanics covering spelling, punctuation, and capitalization. Because certain aspects were more significant than others, the grading rubric included various weights for each component. The most weight was given to topic and organization, which received a score of 6, vocabulary and grammar received a 5, while mechanics received a score of 3. In addition, each component featured a scale of four-point range from 1 (poor), 2 (fair), 3 (outstanding), and 4 (excellent).

Procedures

Because the data gathering activity had to adhere to the actual conditions at the institution where the research was conducted, the instructional processes followed the institution's curriculum. All of the classrooms had the same lesson plan. The same lecturer gave the three classes, who also happened to be one of the analysts, followed the pre-therapy curriculum, lesson plans, and materials. Each session lasted 90 minutes, and all students in three classes attended all ten sessions, including a pre-and post-test. Students were given two explanation essays to write as part of their therapy utilizing the process writing method. The whole writing tasks were at the essay level, according to the curriculum, and primarily consisted of the explanation essay. Pre-writing, drafting, reviewing the draft, revising and editing, and publishing were all processes in which the students accomplished the job. In this section, you will find a thorough explanation of the therapy technique.

Table 1

Treatment procedures were carried out in tandem, teams, and solo using a writing technique.

Meeting	Stages	Tandem and Teams	Solo
		Pre-test	Pre-test
	Pre-writing	A pre-writing worksheet was distributed by the instructor to couples and	A worksheet for pre-writing was supplied by the presenter. Individually, the kids came up with and arranged ideas.

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		groups. The concepts were conceived and arranged by couples and groups.	
	Drafting	The couples and groups created a draft using the outline in the pre-writing exercise.	Based on the method in the book, each student created a draft in the pre-writing exercise.
	Giving Response	Each couple and group read the draft and responded to the current ideas, structure, and language usage.	Each student reads their friend's draft and responds to the concepts, structure, and language used in the draft.
	Editing and Revision	The tandem and teams altered and revised the text based on the response from the other duo or team.	Each student separately rewrote and corrected the manuscript based on their friend's feedback.
Outside the classroom	Teacher Response	The second draft was assessed by tandem and teams with the professor.	The lecturer and the students discussed the second draft.
	Revising and editing the second draft	The tandem and team were modified based on the lecturer's input, and the document was updated.	The students updated and altered the text based on the lecturer's criticism.
	Publishing	The final text was released using PowerPoint Presentation by the couples and groups (PPT).	The students used PowerPoint presentations to publish the final draft (PPT).
	Drafting, giving feedback, revising and editing	Activities from meetings 2, 3, and 4 are repeated with a new theme.	Actions from meetings 2, 3, and 4 repeated with a new theme
	Publishing	The work of the couples and groups was presented as a poster presentation.	The student presented their findings in the form of a poster.
		Post-test	Post-test

Data Collection

There were various processes to follow to collect the data required. Before the therapy began, a pre-test was performed to check that there was no discernible difference in writing abilities across the three groups. Students in each subject were required to write an explanation essay as directed by a writing prompt. The writing challenge required students to write a 400-word explanation essay relevant to their study area. One of the prescribed themes might be chosen by the students. The students had 90 minutes to complete their reports. They may not utilize accessible resources, such as a dictionary or a smartphone to assist them in completing the necessary writing work.

The second data came from the study's participants filling out a personality type questionnaire, which showed whether they were more extroverted or introverted. The questionnaire included 34 questions, and students worked in pairs and groups to complete it in the classroom. Answering all of the questionnaire's questions took around 10 minutes. For each sentence, the students chose "Yes" or "No" to indicate their preference. For each "Yes" response, the students earned one

point, and for each "No" answer, they received zero points. Some of the items were negative remarks with a restricted score due to their negative wording. As a result, the "No" response received a one, and the "Yes" response received a 0. Each student's total scores were determined based on their "yes" or "no" response. The answers to the questionnaire were then tallied to get the total points for each student's total items. Students with a score of 17 or more were classified as extroverted, while those with less than 17 were classified as introverts. According to the personality type assessment findings, 13 students were classified as extroverts and 17 as introverts in pair work. In groups, the number of extrovert students outnumbered the number of introvert students. There were 17 extroverts and 11 introverts among the students.

The students' personality types were then utilized to arrange the establishment of tandem and teams of learners. The group was divided into extroverts, introverts with introverts, and extroverts with introverts. The mix of students in tandem and groups was altered to reflect the unequal numbers of categories since the number of socialites and introvert learners were unequal (See Table 2).

Table 2

Student formation based on personality types

Category	Total	Total
Extrovert + Extrovert	Three tandem	Two teams
Introvert + Introvert	Five tandem	Four teams
Extrovert + Introvert	Seven tandem	One team

A post-test was used to acquire further data. The post-test was given on the same day and simultaneously for three courses. The students were given a writing topic to prepare an explanation essay as part of their writing exam. They had to compose at least three paragraphs, each introduction, body, and conclusion. The writing work was given 90 minutes to complete. The writing post-test was performed independently by each group in this research.

The students submitted the essay as soon as they were through with it. To determine their writing abilities and remove any potential biases two professional raters examined the completed essays from pre-test and post-test. Each student's work was anonymously graded throughout the process by giving a code number to it. Because the students' writing was assessed by two raters, prior training was necessary to improve score accuracy and

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eliminate differences caused by the raters' different backgrounds. Two raters computed an r of.885 as the reliability coefficient. The raters used an analytical scoring rubric to evaluate them, which looked at five areas of writing: organization, substance, grammar, vocabulary, and mechanics. The average of the two raters' judgments was used to compute the student's essay's final score.

Data Analysis

The data analysis method suited the four research areas proposed in this study. The students' writing data was put in a table and evaluated using descriptive and inferential statistics to meet the study objectives. Because all of the assumptions for the computation at the.05 significant level were completed, the independent sample of the t-test and one-way ANOVA were utilized. SPPSS version 20 was used to generate descriptive and inferential statistics.

FINDINGS

Figure 1 shows the results of the descriptive statistics analysis of the three groups' pre-test writing essays.
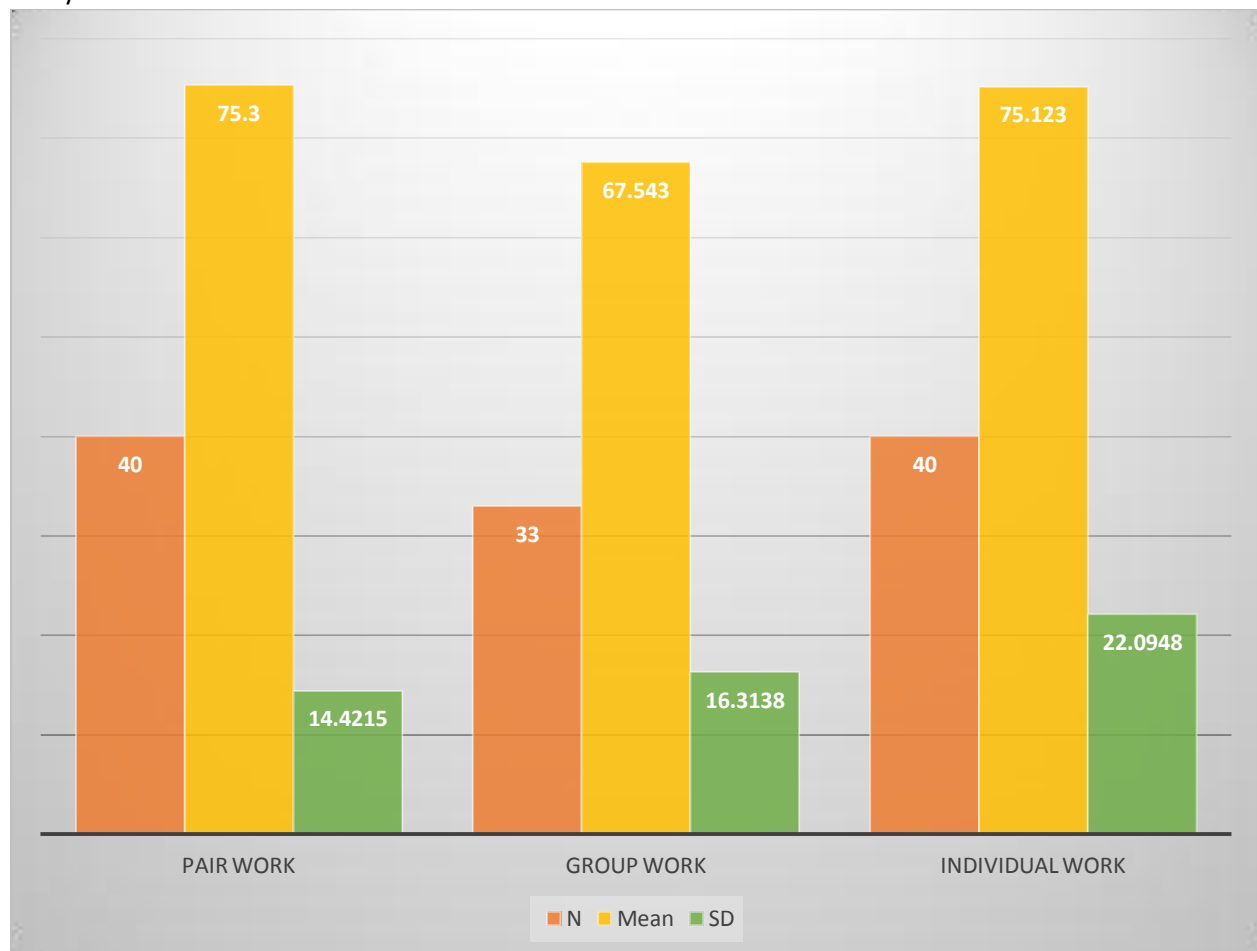

Figure 1. Pre-writing results of the respondents

Students working in pairs had the highest mean (75.3 points), followed by students working in groups (67.543 points) and students working alone (75.123 points), as indicated in figure 1. Although the means of the three groups did not seem to differ substantially, an ANOVA test was used to examine whether they were homogenous. Figure 2 displays the findings.
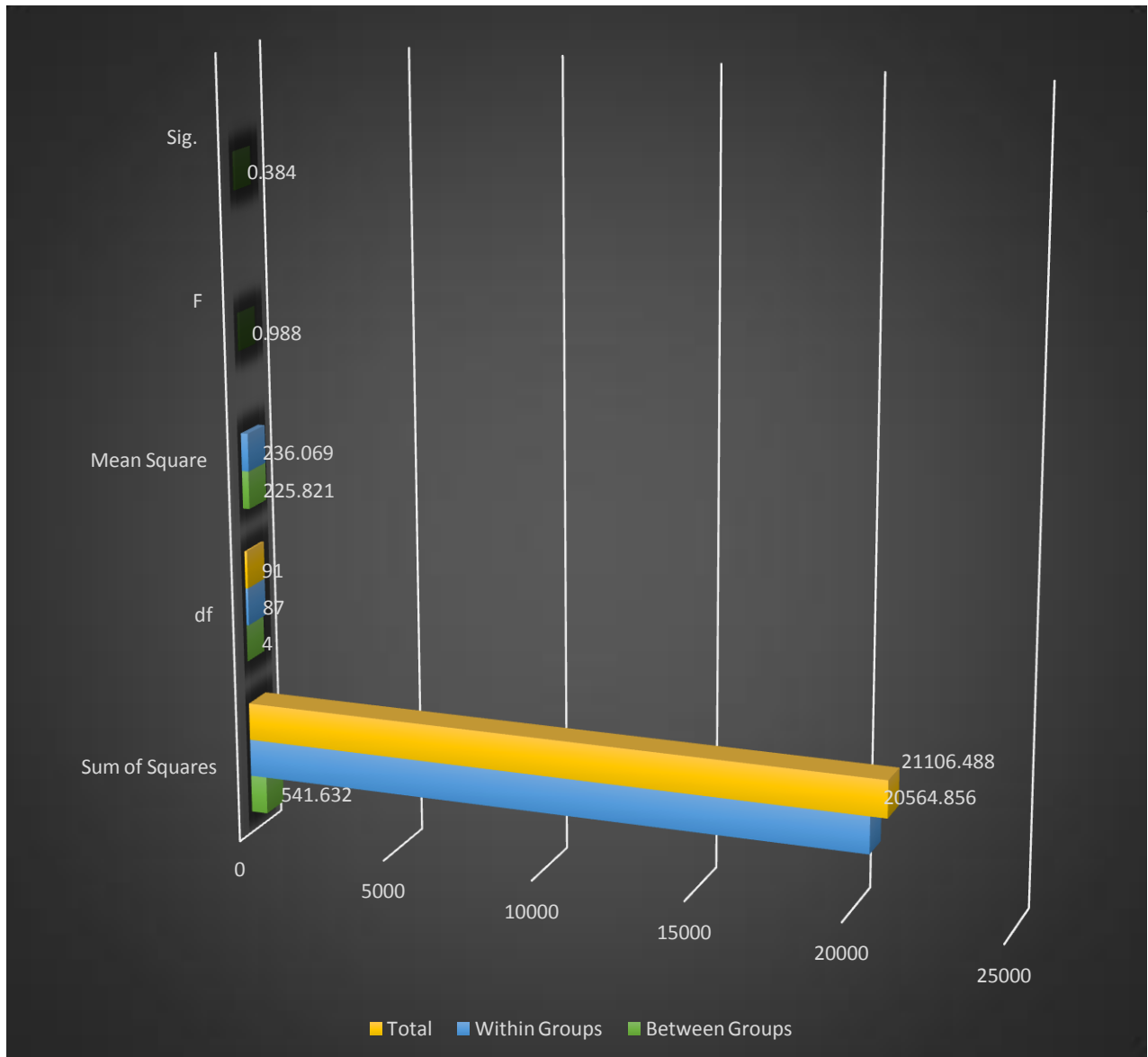
Figure 2. The outcome of a one-way ANOVA statistical analysis (Pretest)

The p-value (.384>.05) was more significant than the.05 significance threshold, indicating that the three groups' means were not statistically different (Figure 2). Consequently, the three groups were identical regarding their writing talents before the treatment. The post-test data were reviewed to meet the first and second research goals, and the result of the descriptive statistics is viewed in Figure 3.
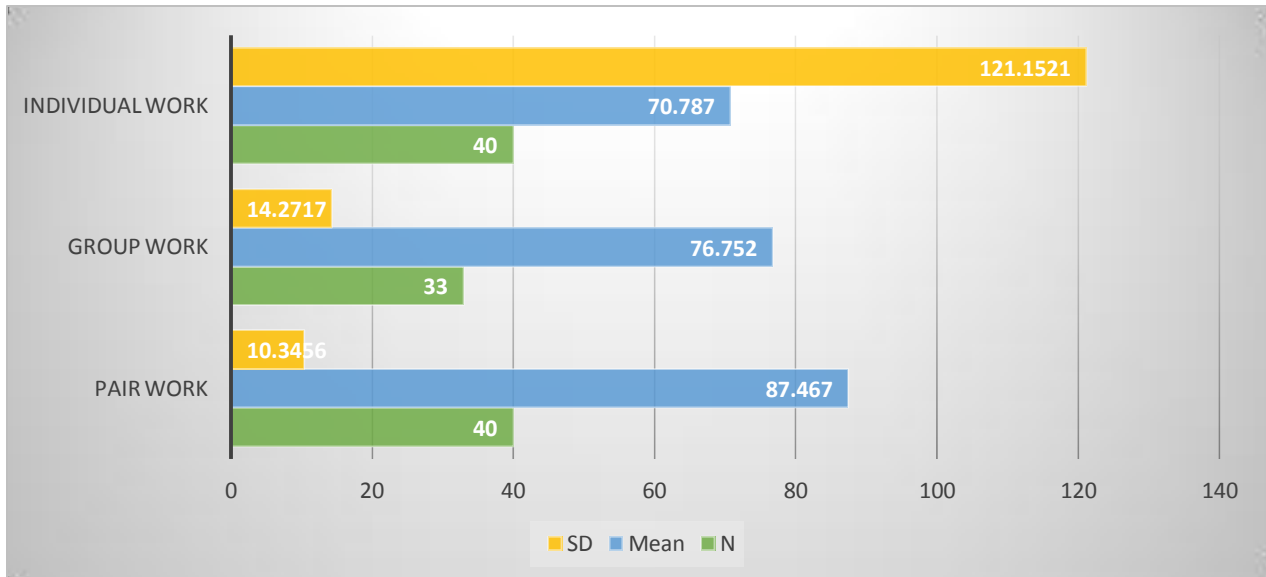
Figure 3. Post-test descriptive statistics on students' writing essays

As seen in Figure 3, each group's mean had a statistically distinct value. Individual work had a mean of 87.467, while group work had a mean of 76.752, and couples had a standard of 70.787. It's worth noting that students working in pairs had the highest mean, while students working alone got the lowest. Furthermore, the mean findings showed that students who finished the writing job during collaborative writing in pairs or groups had more excellent writing skills than students who worked alone. However, a one-way ANOVA analysis was required to evaluate if the contrast in the three groups' means was statistically significant (see Figure 4).
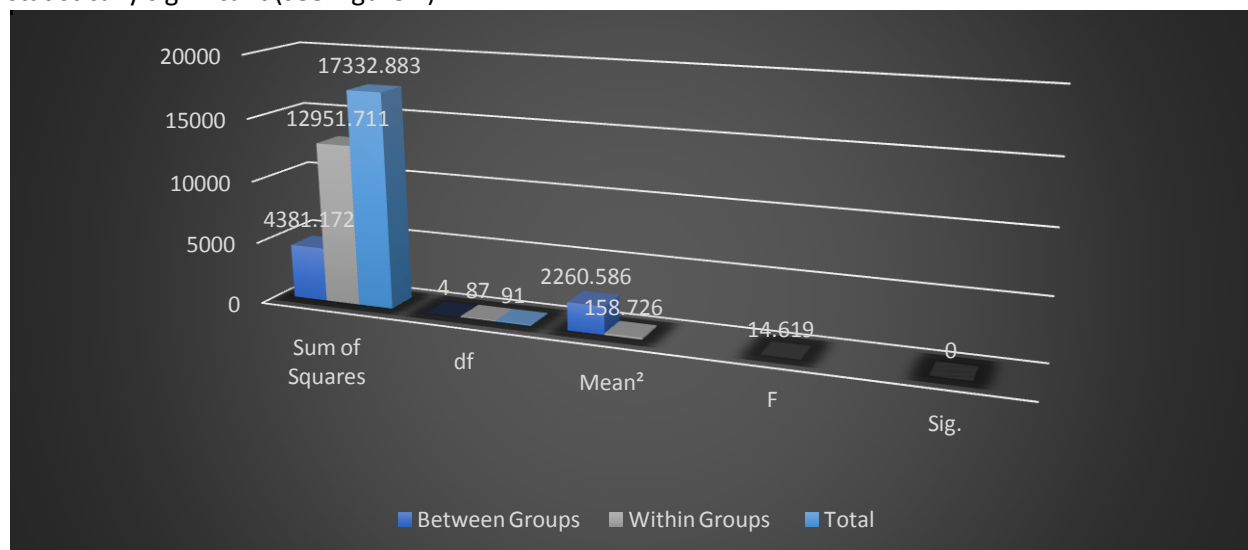

Figure 4. The outcomes of one-way ANOVA statistical analysis

The statistical analysis yielded a p-value of.000, which was less than 0.05, according to Figure 4. It suggests that the effects of the three learning styles on all subjects were significantly different. It may be inferred that students who worked together on a writing activity had superior writing skills than students who worked alone on a writing job. The independent sample t-test with the Alpha value was then used to determine if the students working in pairs or groups had significant differences in their writing abilities. The significance threshold for this study was set at.05. The findings of the data analysis are shown in Figure 5.
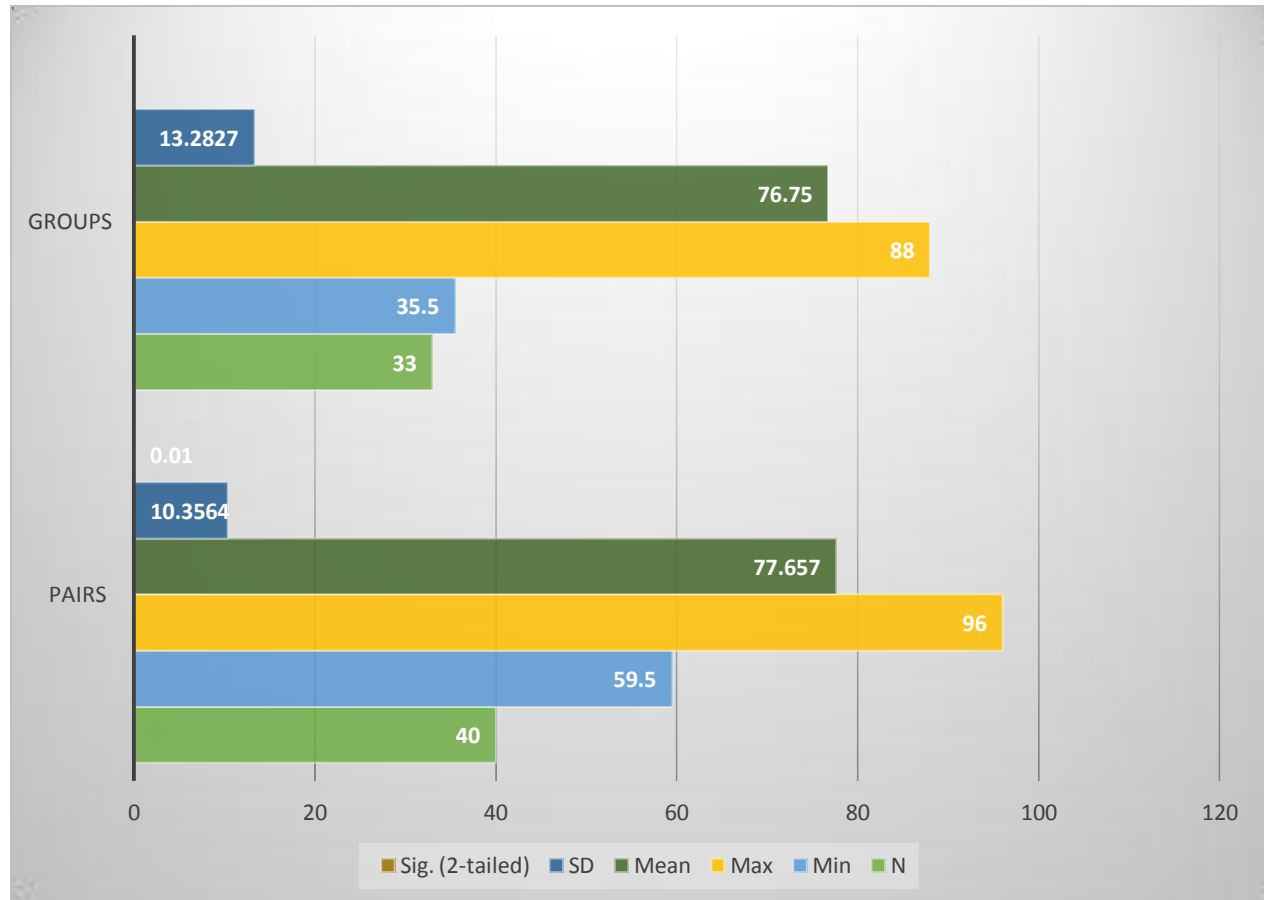
Figure 5. The post-test independent sample t-test in pairs and groups is shown

According to the post-test findings, the students who worked in tandem during collaborative writing had more excellent writing abilities than those who worked in teams. Both descriptive and inferential statistics results show it. According to descriptive statistics, the mean of learners who collaborated in tandem was more significant than that of learners who collaborated in groups. There was a 13.717 gap between the two groups. Inferential statistics provided more persuasive evidence since the two groups' standards differed considerably. The statistical analysis produced a p-value of 0.01, lower than the significance threshold of 0.05, indicating that learners working in tandem had vastly superior writing skills than learners working in teams after being offered collaborative writing utilizing process writing. The statistical analysis is given in Figures 6, and 7 shows that personality types had no significant influence on students' writing skills during collaborative writing.
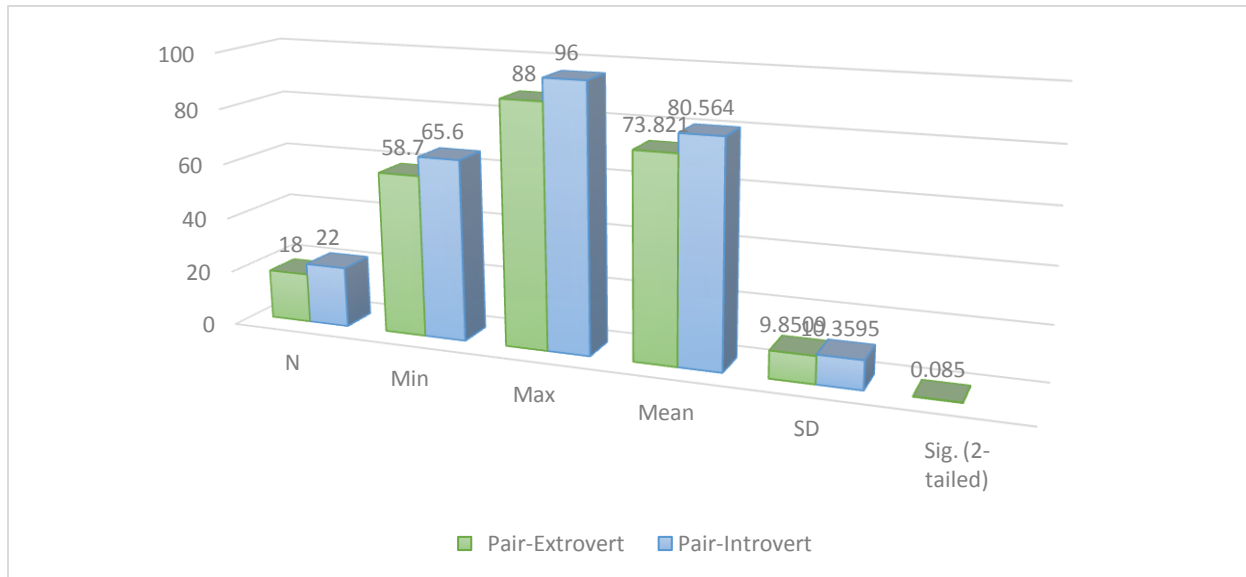
Figure 6. Extrovert and introvert students collaborated in pairs to compare their results

Figure 6 reveals that introvert students looked to have superior writing skills than extrovert students since descriptive statistics showed that the introvert students' mean was higher than the extrovert learners. On the other hand, the inferential analysis yielded a higher p-value than the significance threshold (.085>.05). It signifies that there was no significant difference between the two means. As a result, it may be inferred that the differences in personality types among students had no impact on their ability to write an explanation essay.
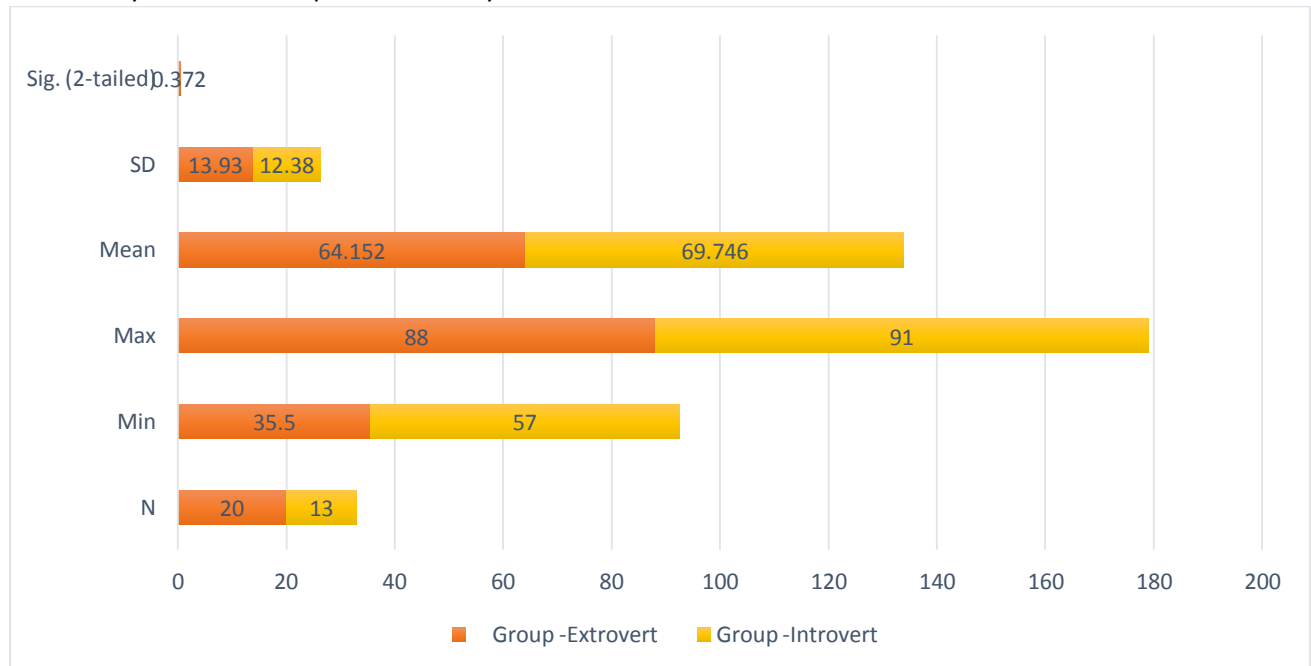

Figure 7. The averages of extrovert and introvert students working in groups were compared

The mean for introvert students who completed collaborative writing in groups was more significant than the mean for extrovert students, as shown in Figure 7. Introverted students' writing ability was not statistically different from extroverted learners. The p-value gained from the t-test (.372) was significantly higher than the 0.5 significance criteria.

DISCUSSION

The research findings in comparing collaborative and individual writing back up previous hypotheses and studies that claim that collaborating in the production of a draft is advantageous for students learning a second or foreign language (Chen et al., 2019; McDonough et al., 2019; McDonough & De Vleeschauwer, 2019; Storch, 2021; Tyrou, (2021); Villarreal & Gil-Sarratea, (2020). Students' cognitive growth, including their knowledge and proficiency in English, is first developed by contact with other students from a socio-cultural viewpoint, in this instance with the more competent students. Students should be given educational exercises that motivate them to collaborate and finish things as a group. Collaborative activities, for example, are seen to be more helpful in increasing students' skills since students construct the language not just to express but also to build meaning. Students may also use collaborative assignments to help them acquire and solidify linguistic information through interacting with other students (Villarreal, 2021). Students engage with students of various levels, with more competent students aiding the less capable, resulting in a supportive atmosphere for youngsters to improve their language abilities, according to the Zone of Proximal Development (ZPD) (McDonough et al., 2019).

The study's findings suggest that collaborative writing is more productive than solitary writing for various reasons. Compared to solo writing, collaborative writing has some qualities that make it much easier for students to complete the work at hand. The reciprocal involvement between or among the students is the most visible aspect of collaborative writing (Kitjaroonchai & Suppasetseree, 2021). Each student gets several opportunities to join in the writing activity throughout the interaction, allowing students to share ideas, support one another, solve relevant language challenges, etc. The second factor that might influence collaborative writing in this research is that the students' writing assignment contained a process requiring them to complete numerous phases. Students collaborate in collaborative and procedure writing throughout the writing process, whether pre-writing, generating a draft, or modifying the paper.

A prior study (Chen et al., 2019) examined the number of students engaging in collaborative writing. The findings revealed that students who worked in tandem outscored those who worked in teams in response to the second question. It's unexpected since it was believed that learners working in teams of four would outperform learners working alone because groups would have access to more different knowledge resources throughout the task. Because they shared more linguistic resources, students working in groups were also more likely to identify the proper answer to language-related challenges. The students' writing quality improved as a result of this.

The overwhelmingly positive effect of collaborative writing done in pairs vs. group activity might be due to some factors. In pair work, students have additional opportunities to participate in the assignment. The higher possibility in pair work is due to the smaller number of students in pair work (just two students) than group work (four students). Other studies had looked at what occurred when students were asked to work in pairs or groups to finish the job. Iskandar & Pahlevi's research (2021) discovered that students working in teams created more language than students working in small groups and that students working in pairs hand out equally to the task. In addition, several students working in small groups were observed to be quiet and not contributing to the activities. McDonough & De Vleeschauwer (2019) discovered that pair work created more Language Related Episodes (LREs) than group work, producing relatively few LREs. The development of LREs during collaborative work is thought to facilitate the formation of linguistic knowledge, and it might

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affect students' capacity to write following therapy.

Dealing with disputes that arise during collaborative writing is another element that may impact the superiority of pair work in this research. Although they had known one other for a long time and the current study was their second year together, they arrived at class with various social, emotional, and cognitive characteristics. It seems that group work with more participants has a higher likelihood of causing conflict. These disparities may pose difficulties, reducing the efficacy of collaborative writing (Qiu & Lee, 2020). However, with pair work, friction between students may be lessened since there are just two individuals, and they prefer to resolve conflicts quickly.

The results of this study also back with prior research on the impact of personality types on language learning, indicating that both extrovert and introvert learners may be effective. According to past research, personality types had no effect on students' writing progress when self-correction was assigned, and students benefited from self-correction regardless of personality type (Kütt et al., 2019). The conclusions of this research are backed up by the findings of another study, which found no statistically significant difference between extrovert and introvert students in terms of writing ability (Bashori et al., 2021). Overall, these findings disprove the notion that introverts are less capable of acquiring a second or foreign language than extroverts. In reality, both extrovert and introverted students may learn the language.

Several variables may have an impact on students' participation in collaborative writing. One element was the kids' ability to write. When low proficiency students worked with students of the same level, McDonough et al., 2018 analysis found that they would not profit from several collaborative projects. In her research evaluation, Magnusson (2021) found that students' differences, including cognitive factors, were critical in the L2 writing process, including planning, formulating, transcribing, and editing stages. Although her study mainly focused on solo writing. Students completed writing activities on their own, and she concluded that this element, together with motivating variables, may influence how students collaborated to write jointly authored content.

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The motivation of students to participate in collaborative writing is the next component that might impact its success. Students' motivations are based on Leont'ev's activity theory approach, cited in Zhang, M., & Plonsky, L. (2020). According to this idea, all human actions are guided by conscious intentions and fulfilled via goal-oriented activity. It explains why some students are engaged in the movement while others respond differently during a collaborative exercise. Exercise visual has a distinct motivation for participating in the activity. Zhang, 2019 validated this issue, indicating that students' motivations might influence their active participation in peer feedback activities. As a result of this discovery, students with varied reasons had different attitudes and conducted collaborative activities in diverse ways.

CONCLUSION

Collaborative writing, whether done in tandem or teams, is more productive than writing solo, according to this research. Working together to solve language-related challenges while completing a task offers mutual support, allowing students to build linguistic knowledge from a socio-cultural viewpoint. Furthermore, this research found that group size influences students' writing skills, suggesting that assigning students to collaborative writing utilizing process writing in pairs is better. Finally, it can be inferred from this research that both sorts of personalities have equal opportunities to collaborate in couples or groups.

The result of this research is to contribute to the increasing body of evidence that collaborative writing is beneficial in foreign language learning. It indicates that writing professors should use collaborative writing as a pedagogical technique to assist students in developing their writing skills and establish a welcoming learning environment. Teachers may assign kids to work cooperatively with other students since writing isn't only a lonely activity. Teachers must, however, take into account the number of students participating in the prescribed work since group size has an impact on collaborative learning performance. It's also worth noting that, when it comes to collaborative learning, both extrovert and introvert students have a chance to succeed. Following the findings of this study, future studies may include a more significant number of participants with varying degrees of skill to know the impact of group size on students' writing abilities during collaborative writing. A future study might examine the interplay between collaborative writing and aspects other than personality types, such as paragraph writing style, which could impact its efficacy.

REFERENCES

Abasi, A. R., & Graves, B. (2008). Academic literacy and plagiarism: Conversations with international graduate students and disciplinary professors. *Journal of English for Academic purposes*, *7*(4), 221-233. https://doi.org/10.1016/j.jeap.2008.10.010

Abe, M. (2020). Interactional practices for online collaborative writing. *Journal of Second Language Writing*, *49*, 100752. https://doi.org/10.1016/j.jslw.2020.100752

Anggraini, R., Rozimela, Y., & Anwar, D. (2020). The Effects of Collaborative Writing on EFL Learners' Writing Skills and Their Perception of the Strategy. *Journal of Language Teaching and Research*, *11*(2), 335-341. http://dx.doi.org/10.17507/jltr.1102.25

Bashori, M., van Hout, R., Strik, H., & Cucchiarini, C. (2021). Effects of ASR-based websites on EFL learners' vocabulary, speaking anxiety, and language enjoyment. *System*, *99*, 102496. https://doi.org/10.1016/j.system.2021.102496

Chen, W., & Hapgood, S. (2021). Understanding knowledge, participation and learning in L2 collaborative writing: A metacognitive theory perspective. *Language Teaching Research*, *25*(2), 256-281. https://doi.org/10.1177%2F1362168819837560

Chen, W., & Yu, S. (2019). A longitudinal case study of changes in students' attitudes, participation, and learning in collaborative writing. *System*, *82*, 83-96. https://doi.org/10.1016/j.system.2019.03.005

Chen, W., & Yu, S. (2019). Implementing collaborative writing in teacher-centered classroom contexts: student beliefs and perceptions. *Language Awareness*, *28*(4), 247-267. https://doi.org/10.1080/09658416.2019.1675680

Cho, H. (2017). Synchronous web-based collaborative writing: Factors mediating interaction among second-language writers. *Journal of Second Language Writing*, *36*, 37-51. https://doi.org/10.1016/j.jslw.2017.05.013

Hynninen, N. (2018). Impact of digital tools on the research writing process: A case study of collaborative writing in computer science. *Discourse, Context & Media*, *24*, 16-23. https://doi.org/10.1016/j.dcm.2018.01.005

Iskandar, R. P. F., & Pahlevi, M. R. (2021). Students' emotional engagement in online collaborative writing through google document. *ETERNAL (English Teaching*

Journal), *12*(2), 58-67. https://doi.org/10.26877/eternal.v12i2.9191

Kitjaroonchai, N., & Suppasetseree, S. (2021). Online Collaborative Writing via Google Docs: Case Studies in the EFL Classroom. *Journal of Language Teaching and Research*, *12*(6), 922-934. https://doi.org/10.17507/jltr.1206.08

Kütt, G. H., Lee, K., Hardacre, E., & Papoutsaki, A. (2019, May). Eye-write: Gaze sharing for collaborative writing. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (pp. 1-12). https://doi.org/10.1145/3290605.3400727

Li, H. H., Zhang, L. J., & Parr, J. M. (2020). Small-group student talk before individual writing in tertiary English writing classrooms in China: nature and insights. *Frontiers in Psychology*, *11*, 2361. https://doi.org/10.3389/fpsyg.2020.570565

Liu, M., Liu, L., & Liu, L. (2018). Group awareness increases student engagement in online collaborative writing. *The Internet and Higher Education*, *38*, 1-8. https://doi.org/10.1016/j.iheduc.2018.04.001

Magnusson, S. (2021). Establishing jointness in proximal multiparty decision-making: The case of collaborative writing. *Journal of Pragmatics*, *181*, 32-48. https://doi.org/10.1016/j.pragma.2021.05.003

McDonough, K., & De Vleeschauwer, J. (2019). Comparing the effect of collaborative and individual pre-writing on EFL learners' writing development. *Journal of second language writing*, *44*, 123-140. https://doi.org/10.1016/j.jslw.2019.04.003

McDonough, K., De Vleeschauwer, J., & Crawford, W. (2018). Comparing the quality of collaborative writing, collaborative pre-writing, and individual texts in a Thai EFL context. *System*, *74*, 109-120.

https://doi.org/10.1016/j.system.2018.02.010

McDonough, K., De Vleeschauwer, J., & Crawford, W. J. (2019). Exploring the benefits of collaborative pre-writing in a Thai EFL context. *Language Teaching Research*, *23*(6), 685-701. https://doi.org/10.1177%2F1362168818773525

Qiu, X., & Lee, M. K. (2020). Regulated learning and self-efficacy beliefs in peer collaborative writing: An exploratory study of L2 learners' written products, task discussions, and self-reports. *System*, *93*, 102312. https://doi.org/10.1016/j.system.2020.102312

Rahayu, R. A. P. (2021). Effect of collaborative writing combined with blog online learning on Indonesian EFL learners' writing skill across motivation. *SALEE: Study of Applied Linguistics and English Education*, *2*(01), 87-98.

https://doi.org/10.35961/salee.v2i01.219

Sarkhosh, M., & Najafi, S. (2020). Collaborative and individual writing: Effects on accuracy and fluency development. http://hdl.handle.net/10481/62801

Storch, N. (2021). Collaborative writing: Promoting languaging among language learners. In *Working collaboratively in second/foreign language learning* (pp. 13-34). De Gruyter Mouton. https://doi.org/10.1515/9781501511318-002

Sukarni, S., & Rokhayati, (2021). T. Hybrid Synchronous and Asynchronous Language Learning in Writing Class: The Learners' Psychosocial Perspectives in Indonesia. *Stanisław Juszczyk*, 190. 10.15804/tner.2021.65.3.15

Sundgren, M., & Jaldemark, J. (2020). Visualizing online collaborative writing strategies in higher education group assignments. *The International Journal of Information and Learning Technology*.

https://doi.org/10.1108/IJILT-02-2020-0018

Tyrou, I. (2021). ONLINE COLLABORATIVE WRITTEN ACTIVITIES IN L2 FOR THE TEACHING OF LANGUAGE AND CULTURE. *European Journal of Foreign Language Teaching*, 5(4). http://dx.doi.org/10.46827/ejfl.v5i4.3744

Villarreal, I., & Gil-Sarratea, N. (2020). The effect of collaborative writing in an EFL secondary setting. *Language Teaching Research*, 24(6), 874-897. https://doi.org/10.1177%2F1362168819829017

Villarreal, I., Bueno-Alastuey, M. C., & Sáez-León, R. (2021). Computer-based collaborative writing with young learners: Effects on text quality. In *Working Collaboratively in Second/Foreign Language Learning* (pp. 177-198). De Gruyter Mouton. https://doi.org/10.1515/9781501511318-008

Vorobel, O., & Kim, D. (2017). Adolescent ELLs' collaborative writing practices in face-to-face and online contexts: From perceptions to action. *System*, 65, 78-89. https://doi.org/10.1016/j.system.2017.01.008

Zhang, M. (2018). Collaborative writing in the EFL classroom: The effects of L1 and L2 use. *System*, 76, 1-12. https://doi.org/10.1016/j.system.2018.04.009

Zhang, M. (2019). A re-examination of pair dynamics and L2 learning opportunities in collaborative writing. *Language Teaching Research*, 1362168819890949. https://doi.org/10.1177%2F1362168819890949

Zhang, M. (2019). Towards a quantitative model of understanding the dynamics of collaboration in collaborative writing. *Journal of second language writing*, 45, 16-40. https://doi.org/10.1016/j.jslw.2019.04.001

Zhang, M. (2019). Understanding L1 and L2 interaction in collaborative writing: A lexico-grammatical analysis. *Language Teaching Research*, 1362168819859911. https://doi.org/10.1177%2F1362168819859911

Zhang, M., & Crawford, W. J. (2021). Attention to form in collaborative writing: language-related episodes in L1 and L2 use conditions. *Language Awareness*, 1-19. https://doi.org/10.1080/09658416.2021.1998087

Zhang, M., & Plonsky, L. (2020). Collaborative writing in face-to-face settings: A substantive and methodological review. *Journal of Second Language Writing*, 49, 100753. https://doi.org/10.1016/j.jslw.2020.100753

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