



**A Blended Learning Based Program for Developing EFL
Written Communication Skills of Customer Service
Employees in the Telecommunications Sector**

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Abstract

This study examined the effectiveness of a blended learning based program for developing EFL

written communication skills among customer service employees in the telecommunications sector. Participants were selected based on specific criteria and divided into experimental (n = 30) and control (n = 30) groups. The equivalence of the study groups was confirmed using an independent samples t-test to calculate the difference between the scores of trainees in the experimental and control groups in the EFL written communication skills pre-test. The study adopted a quasi-experimental design. The experimental group received training through the blended learning program, and the control group was trained according to the general programs provided by Telecom Egypt's Training and Development Sector. It was conducted at Telecom Egypt's Tanta Training Center. The study utilized some instruments: a needs analysis questionnaire, an EFL written communication skills test, a scoring rubric, and a blended learning program with an instructor's guide. A needs analysis was conducted to determine the specific EFL written communication skills. Based on the results, a 10-week blended learning-based program was developed to develop linguistic competence, discourse competence, content, mechanics, and style through interactive face-to-face and online sessions via the CISCO Webex platform. Pre- and post-tests assessed the participants' EFL written communication skills. The findings revealed statistically significant differences between the experimental and control groups in the post-test, as the experimental group showed significant gains in all the targeted written communication sub-skills. Effect sizes ranged from 0.637 to 0.871, indicating a significant impact of the program.

Keywords: Blended Learning Based Program, EFL written communication skills, customer service, employees, telecommunications sector, Telecom Egypt.

برنامج قائم على التعلم المدمج لتنمية مهارات التواصل الكتابي باللغة الإنجليزية كلغة أجنبية لدى موظفي خدمة العملاء في قطاع الاتصالات

مستخلص الدراسة

تهدف هذه الدراسة إلى تقييم فعالية برنامج قائم على التعلم المدمج لتنمية مهارات التواصل الكتابي باللغة الإنجليزية لدى موظفي خدمة العملاء في قطاع الاتصالات. تم اختيار مجموعة من موظفي خدمة العملاء بالشركة المصرية للاتصالات للمشاركة في الدراسة. تم اختيار المشاركين في الدراسة بناءً على مجموعة من المعايير من بين مجموعة من المشاركين الذين أبدوا اهتمامًا بالمشاركة في البرنامج وتم التأكد من تكافؤ مجموعات الدراسة في مهارات التواصل الكتابي باللغة الإنجليزية من خلال إجراء اختبار (ت) للعينات المستقلة لحساب الفرق بين متوسطي درجات المتدربين في المجموعتين التجريبية والضابطة في الاختبار القبلي لمهارات التواصل الكتابي باللغة الإنجليزية كلغة أجنبية. اعتمدت الدراسة على التصميم شبه التجريبي، حيث تم تدريب المجموعة التجريبية (ن=٣٠) وفق برنامج التعلم المدمج، بينما تم تدريب المجموعة الضابطة (ن=٣٠) وفق البرامج العامة المقدمة من قطاع التدريب والتطوير بالشركة المصرية للاتصالات. وقد أجريت الدراسة بمركز تدريب طنطا التابع للشركة المصرية للاتصالات. استخدمت الدراسة أدوات مختلفة، تشمل استبيان تحليل الاحتياجات، واختبار مهارات التواصل الكتابي باللغة الإنجليزية كلغة أجنبية، ونموذج تقييم مهارات التواصل الكتابي باللغة الإنجليزية كلغة أجنبية، وبرنامج التعلم المدمج مع دليل المدرب. تم إجراء تحليل الاحتياجات لتحديد مهارات التواصل الكتابي المحددة باللغة الإنجليزية كلغة أجنبية والتي يتطلبها موظفو خدمة العملاء. وبناءً على النتائج، تم تصميم برنامج التعلم المدمج لمدة ١٠ أسابيع، مع التركيز على تنمية الكفاءة اللغوية، وكفاءة الخطاب، والمحتوى، وتقنيات الكتابة، والأسلوب من خلال جلسات تفاعلية وجهاً لوجه وعبر الإنترنت من خلال منصة CISCO Webex. تم إجراء الاختبارات القبلي والبعدي لتقييم مهارات التواصل الكتابي لدى المشاركين في اللغة الإنجليزية كلغة أجنبية. وكشفت النتائج عن فروق ذات دلالة إحصائية بين المجموعتين التجريبية والضابطة في الاختبار البعدي، حيث أظهرت المجموعة التجريبية تنمية ملحوظة في جميع مهارات التواصل الكتابي الفرعية المستهدفة. وتراوح حجم التأثير بين ٠.٦٣٧ إلى ٠.٨٧١، مما يدل على وجود تأثير كبير للبرنامج القائم على التعلم المدمج. تسلط الدراسة الضوء على فعالية برنامج قائم على التعلم المدمج المصممة خصيصاً في تعزيز إتقان التواصل باللغة الإنجليزية في مكان العمل وتؤكد على حاجة المؤسسات للاستثمار في مثل هذه البرامج والمبادرات التي تعد القوى العاملة للمنافسة العالمية.

الكلمات المفتاحية: برنامج قائم على التعلم المدمج ، مهارات التواصل الكتابي باللغة الإنجليزية كلغة أجنبية، خدمة العملاء، الموظفين، قطاع الاتصالات، المصرية للاتصالات.

1.1 Introduction

The twenty-first century has witnessed a significant transformation in the global telecommunications sector, including Egyptian companies such as Vodafone, Etisalat, Orange, and Telecom Egypt (Telecom Egypt's Integrated Annual Report 2020, p. 52). Euromonitor International Research (2012, pp. 132-133) reported that Egypt had 3.8 million users of information and communication technology (ICT) in 2011. Furthermore, the government and the private sector invested \$4,327 million in telecommunications in the same year. Egyptian telecommunications is a growing industry seeking vast numbers of English speakers. Employees working in these companies require advanced levels of English to handle customer inquiries successfully. English has not only achieved widespread international acceptance (Leotescu, 2022, p. 16) but has also secured recognition from nations across the globe, emphasizing its pivotal role as a tool for acquiring knowledge and technology. As the telecommunications industry in Egypt continues to expand, the demand for English proficiency among its workforce has increased. Effective verbal and nonverbal communication skills have emerged as crucial factors for success in this sector. These skills are now essential for success in this dynamic sector.

Based on the communication channel, there are two types of communication: Nonverbal communication and verbal communication (Jacob et al. 2016: 2). Nonverbal communication skills include body language, body movement, facial expressions, gestures, professional appearance, time and place (Mbinda- Lashley & Powley, 2012, p. 15). Verbal communication encompasses both written and spoken forms of language (Rai, 2010, p. 13). Written communication involves conveying information, ideas, or messages through written representations, including various forms such as emails, memos, reports, and other written documents. Furthermore, it is a critical aspect of internal and external corporate communications. It requires mastery of language, adherence to company values and mission statements, and producing documents consistent with the intended purpose and audience (Gimenez, 2023, p. 194). Frenco (2005, p. 80) explored communication skills in business writing within the overall framework of process or genre approaches, including correspondence, contracts, reports, resumes,

agendas, minutes, and writing for the Internet, offering valuable insights into the field.

Communication mainly solves problems, creates relationships, and makes decisions. When doing business, communication can be in person, in writing, and online (Cenere et al., 2019, p. 7). At the same time, public communication involves one person transmitting a message to several listening individuals. Public speech is the most widely used form of public communication (Mbinda- Lashley & Powley, 2012, pp. 26-27). In the case of verbal communication, factors such as grammar, syntax, formal and informal language, and traditional salutations play a significant role in communication (Beauchamp & Baran, 2017, p. 73). In communication, one person transfers information and shared understanding to another (Keyton, 2011, p. 506). Moreover, communication is the primary means of interaction, a discovery tool for building and maintaining relationships, and a vehicle for expressing and securing the things we want.

Furthermore, organizations have strong relationships between efficient and effective performance and communication. In other words, communication is the mechanism used to manage the inevitable and necessary tensions in all relationships (Beauchamp & Baran, 2017, p. 23). Therefore, mastering these skills can enable professionals to excel in their roles, enhance customer interactions, and contribute to the overall growth and development of the Telecommunications sector.

With the onset of the COVID-19 pandemic, communication and education were significantly impacted. The pandemic has resulted in the complete closure of educational institutions in about 190 countries worldwide, with 94% of registered learners temporarily forced out of school. As social distancing is being enforced locally and regionally around the world to limit the spread of Coronavirus disease, 1.6 billion learners worldwide are currently forced to stay out of school (Emilia et al., 2023, p. 897).

Consequently, new education trends have developed worldwide, driven by the tremendous technological advances that have taken place over the past twenty years. Blended learning is a widely used trend due to the advances in communication and network technologies that provide meaningful learning experiences for learners in academic settings. In

addition, blended learning is proliferating because instructors believe diverse delivery methods may significantly enhance learning outcomes and increase student satisfaction with the learning experience

(Lim & Morris, 2009, p.282).

Blended learning is a concept that combines different components into a new structure, integrating face-to-face and computer-based education. It originated in the early 1960s and has been widely adopted in educational systems worldwide (Dziuban et al., 2018, p. 12; Graham, 2006, p. 5; Garrison & Kanuka, 2004, p. 96). Blended learning has proven more effective than traditional face-to-face or purely online learning because it provides authentic learning activities and empowers learners (Tsai, 2012, p.50). Wilson and Smilanich (2005, p. 5) outlined a structured process for designing and implementing a successful blended learning program: identifying the need, creating goals and objectives, designing the program, creating and coordinating individual training solutions, implementing the program, and measuring results. By following these steps, educators can create a blended learning program that leverages the strengths of both online and face-to-face learning, ultimately leading to a more effective and empowering learning experience for students. There are two general approaches to blended learning: the program flow model, which follows a linear, step-by-step approach, and the "core and talk" model, which combines a core training approach with supplementary materials and resources

(Bersin, 2004, p. 56).

The current study aligns with various studies conducted in blended learning. Researchers explored the impact of blended learning on language acquisition such as Adas (2013) and Pardo-Gonzalez (2013). Adas (2013) investigated AnNajah National University students' perceptions of a blended learning environment using OCC, considering their achievement level and online participation frequency. Pardo-Gonzalez (2013) carried out a long-term study that extended over years to monitor and evaluate the experiment of incorporating blended learning in an undergraduate English course at the Universidad de los Andes in Colombia.

Additionally, Mahawan and Langprayoon (2020) developed a study to investigate the effect of blended learning with collaborative

learning on the English communication skills of English teaching program students. Furthermore, Mulyadi et al. (2020) explored the perspective of ESP lecturers on the best teaching practices, practical aspects, challenges, and suggestions for implementing blended learning. More recently, Ali (2022) developed a study to investigate the effect of a suggested project-based blended learning program on developing university students' EFL writing skills and reducing their writing apprehension. In another recent study, Ariani et al. (2023) explored the effect of a blended learning project on Polytechnic students' English speaking skills, targeting vocabulary, pronunciation, and confidence. The results revealed significant progress, as learners exhibited higher scores on post-tests compared to pre-tests. Furthermore, positive shifts in learning attitude and creativity were evident, emphasizing the effectiveness of the project.

Previous studies revealed that blended learning has succeeded in developing English language skills despite the challenges and difficulties, such as limited equipment and infrastructure access. The studies concluded that there are many examples of teachers, institutions, and nations using digital technologies in education effectively in low-resource contexts.

The rationale for the current study arises from the increasing importance of English language proficiency in the workplace, especially in an English-writing global context. The researcher acknowledges the significance of written communication skills in English and identifies a gap in the literature regarding the specific needs of Telecom Egypt's employees. The study is grounded in related blended learning research findings, emphasizing the learners' needs and enhancing English written communication skills. The researcher's focus on Telecom Egypt's employees is justified by the expressed need for language practice and effective communication, as revealed through survey studies and semi-structured interviews, highlighting the current research's practical relevance and potential impact.

After reviewing the related studies for blended learning, it became apparent that blended learning-based programs play a significant role in developing English language skills in the workplace. Only some studies have noted the need for research and study on the use of blended

learning in developing EFL written communication skills in English in the workplace, confirming that this topic needs research and study.

1.2 Context of the Problem:

Through the researcher's experience as a trainer of English programs in Telecom Egypt for ten years, The researcher felt a problem needed to develop communication skills among the trainees. Moreover, the training content was limited to general English, some general topics, grammar, and general terms and vocabulary. It just helped employees to write about their routines and daily life activities. The researcher observed that EFL written communication skills need to be addressed and presented more among employees in the telecommunications sector.

The researcher also conducted a pilot study. The researcher asked for the opinions of some specialists in the field. He conducted interviews with supervisors (n=10), managers (n=10), English instructors (n=8), and employees (n=25) (see Appendix B) in the telecommunications sector to identify the problems employees face when writing and using the English language at work and how to prepare employees for 21st-century basic English language skills at work.

The interviews with managers and supervisors at Telecom Egypt revealed that employees need help with overall English, mainly EFL written communication skills.

Interviews with the English language trainers at Telecom Egypt (n=8) (see Appendix C) indicated that employees urgently need a new program based on job requirements in the English language field. They elaborated that these programs must help employees perform their jobs effectively and develop their EFL written communication skills. They added that the programs should include business topics and terminology related to their work environment. Overall, they agreed that the language in the proposed program should be the language used at work and be company-specific or company-related. Therefore, it is necessary to consider the terms and idioms related to the business sector.

Interviews at Telecom Egypt were conducted with customer service employees (n=25) (see Appendix C), as they are one of the segments that deal directly with the public. They are in need to develop their English language skills permanently. The results of the interviews

showed that the employees agreed that all four main English skills are essential in the workplace. However, they demonstrated a greater interest in EFL written communication skills when conducting their work. They added that they still need help using English, especially in written communication. They expressed their need to improve their written English communication skills alongside their technical English to run their work smoothly.

The researcher also prepared an electronic needs analysis questionnaire using Google Forms (see Appendix D) and shared it with employees working in the telecommunications sector through Email, WhatsApp, and Facebook to reach many participants. He collected 104 responses. The findings of these responses revealed that they have problems in many language skills, including speaking (32.7%) and listening skills (32.7%), but EFL written communication skills (42.3%) occupied the first place.

The findings of need analysis revealed that 42.3% of the participants perceived themselves as poor at EFL written communication skills, which is considered the highest compared to the ratios of other skills (see Appendix E). This finding confirms that they have weaknesses in EFL written communication skills compared to the rest. Besides, 88% of the participants identified EFL written communication as the essential skill for their work, indicating that EFL written communication skills are the most important and badly needed; this means that they need to learn EFL written communication skills more than other skills to conduct their work smoothly.

Moreover, based on the results of previous studies (Adas, 2012; Ali, 2022; Ariani et al., 2023; Hockly, 2014; Mahawan & Langprayoon, 2020; Mulyadi et al., 2020; Pardo-Gonzalez, 2013) it can be concluded that using a program based on a blended learning is crucial in developing EFL written communication skills. So, there is a dire need for a systematic program based on blended learning to develop EFL written communication skills.

1.3 Statement of the Problem:

Despite the importance of EFL written communication skills among employees in telecommunication sectors, there is no systematically designed training program to master these skills in their

jobs. Thus, the present study investigates the effectiveness of using a blended learning based program for developing EFL written communication skills among customer service employees in the telecommunications sector.

1.4 Questions of the Study

The present study attempts to answer the following questions to face this problem:

1. What are the EFL written communication skills needed by customer service employees in the telecommunications sector?
2. What is the suggested blended learning based program for developing EFL written communication skills among employees in the telecommunications sector?
3. To what extent is the blended learning based program effective in developing EFL written communication skills among customer service employees in the telecommunications sector?

1.5 Delimitations of the study:

This study focused on developing some EFL written communication skills for customer service employees at Telecom Egypt. The scope of the study was delimited in the following ways:

1. The participants were 60 Telecom Egypt customer service employees, divided equally between the control and experimental groups (see Appendix G).
2. The research concentrated on developing specific written communication skills, encompassing linguistic competence, discourse competence, content, mechanics, and style based on the results of the needs analysis questionnaire. However, it does not encompass all facets of English proficiency.
3. The study participants were selected based on some criteria from a pool of eligible participants interested in participating in the program.
4. The data collection primarily depended on a researcher-developed test, the EFL written communication skills test, and the EFL written communication skills rubric. This

approach restricts the perspectives that are represented in the study.

5. The study was limited to 10 weeks for implementation between November 2023 to January 2024. Long-term effects beyond this duration are not evaluated.
6. The research was conducted exclusively within Telecom Egypt's training infrastructure and facilities.
7. Face-to-face interactive sessions of the blended learning program were conducted in person at Telecom Egypt's Tanta Training Center.
8. The online sessions were facilitated through the Cisco Webex online learning platform, approved by Telecom Egypt Training Sector, enabling remote employee access.
9. Pre-post assessments were administered on-site at Telecom Egypt training centers under monitored conditions.
10. Administration approval and support were obtained from Telecom Egypt to conduct the research. (see Appendix F)

In summary, this study deliberately focuses on a distinct set of parameters, including the composition of the sample, targeted EFL written communication skills, the instructional program employed, instrumentation, study duration, setting, and individual differences.

1.6 Participants of the Study:¹

The current research participants were customer service employees working in Telecom Egypt. The research was constrained to a limited timeframe of 10 weeks for implementation between November 2023 and January 2024. They were selected from Telecom Egypt. The participants were divided into two groups: experimental (n = 30) and control (n = 30).

The study participants were newly hired employees in customer service at Telecom Egypt, whose experience does not exceed 1-3 years, hold a bachelor's degree, and have a good level of proficiency in the English language as having a good level of English language is a prerequisite for joining the company Telecom Egypt customer service team. Additionally, their regular interaction with customers through

¹ The researcher express gratitude to the Telecom Egypt's customer service employees for participating in the study.

various means such as email, reports, and telephone conversations requires mastery of English as a Foreign Language (EFL) communication skills for effective interaction. All participants expressed willingness to participate in the program and tests, highlighting the program's relevance and potential for broader application.

Study participants were selected based on the aforementioned criteria (Purposive Sampling) from a pool of eligible participants who expressed interest in participating in the program. First, each participant's name was written on separate pieces of paper, for a total of 60 names for all participants. The papers were then mixed well to ensure no bias or particular order. Next, 30 names were randomly selected, one at a time, from the shuffled pile. These participants formed the experimental group, and the remaining participants, whose names were not selected, became the control group. This process helped prevent any unfair advantages and ensured that the two groups were similar in the analysis, ensuring the reliability of the study results. (see **Appendix G**)

1.7 The Instruments and Materials of the Study

The following instruments have been developed by the researcher and validated by the jury members (see **Appendix A**):

1. Needs Analysis Questionnaire (see **Appendix H**).
2. The Pre-post EFL Written Communication Skills Test (see **Appendix J**).
3. The EFL Written Communication Skills Scoring Rubric is used to assess the English communication skills of customer service employees on the pre-and post-EFL Written Communication Skills Test (see **Appendix H**).
4. The blended learning Program and the Instructor's Guide.

1.7.1 Needs Analysis Questionnaire

A needs analysis questionnaire has been developed mainly to evaluate the EFL written communication needs of customer service employees at Telecom Egypt. The collected information is essential for developing a tailored blended learning based program. The questionnaire consisted of five sections: background information, language priorities, self-assessment, employees' perception, and specific needs for developing EFL written communication skills.

1.7.1.1 Participants in the Needs Analysis ¹

Prior to assessing the validity and reliability, the needs analysis questionnaire was administered to a sample of 30 participants, being customer service employees at Telecom Egypt. In conclusion, the strong internal consistency observed in each section and the overall questionnaire enhances its reliability, making it a dependable instrument for informing the development of a tailored blended learning based program program.

1.7.1.2 Identifying the Needs Analysis Validity

The validity of the needs analysis was calculated using two different methods: content validity by the jury members and internal consistency analysis for the needs analysis questionnaire.

The Needs Analysis Questionnaire underwent a thorough validation process to ensure its content validity. The initial version was analyzed by a panel of jury members (n= 13), who provided valuable feedback and recommendations. The Jury evaluated the appropriateness of the questionnaire for the study participants, suggested additions or omissions, and assessed the clarity of instructions. The jury members approved the needs analysis, incorporating a few modifications. In response to feedback from the jury members in English language teaching (n=13) (see **Appendix A**)², these modifications aimed to create a final version of the Needs Analysis Questionnaire that is comprehensive, standardized, and balanced.

An internal consistency analysis using Cronbach's alpha coefficient (Taber, 2018, p. 1275) was conducted to assess reliability. The strong internal consistency observed in each section and the overall questionnaire enhances its reliability. Correlation coefficients indicate consistent measurement within each section: Section 1 (Background Information): 0.80, Section 2 (English Language Priorities): 0.85, Section 3 (Self-Assessment): 0.75, Section 4 (Perception of Importance): 0.90, and Section 5 (Needs for Improvement): 0.80. These findings enhance the

¹ The researcher express gratitude to the Telecom Egypt's customer service employees for participating in the study.

² The researcher expresses gratitude to the jury members for their assistance and participation in the study.

questionnaire's reliability for evaluating the EFL communication needs of customer service employees.

1.7.1.3 Calculating the Needs Analysis Reliability

In evaluating the reliability of the Needs Analysis Questionnaire, a thorough analysis was conducted to ensure the consistency and dependability of the instrument. This process aimed to ascertain that the questionnaire consistently measured the intended constructs across its various sections.

Internal consistency was assessed using Cronbach's alpha coefficient (Taber, 2018, p. 1275), a widely accepted measure of reliability. Internal consistency analysis (using Cronbach's Alpha) shows the questionnaire's items within each section are reliable in measuring the intended constructs. The coefficient was calculated for each section of the questionnaire, considering individual items and overall scores. The analysis involved a sample of 30 customer service employees at Telecom Egypt who participated in the needs analysis.

1.7.2 The EFL Written Communication Skills Test

The test's primary objective is to assess the written communication skills of customer service employees at Telecom Egypt in EFL. The test is developed to measure their ability to effectively communicate in various customer service scenarios, ensuring the application of language skills in practical, occupation-specific contexts.

The test includes the following:

- Question 1: Trainees compose an email responding to a frustrated customer seeking a resolution for an internet issue that occurred three days ago.
- Question 2: Trainees write a report addressing challenges faced by customer service representatives at Telecom Egypt, proposing viable solutions.

Trainees can choose and respond to one of the provided questions.

1.7.2.1 Pilot Administration of the EFL Written Communication Skills Test

The test was administered to 30 customer service employees at Telecom Egypt from September 1st to 8th, 2023, and was done to determine the following:

1.7.2.2 Calculating the Test Validity

The test validity was calculated using the following two methods: the validity as judged by the jury members and internal consistency validity.

A. Content Validity of the Test

The validity of the test was determined by the jury members through assessing its content validity. This involved presenting the test to a group of jury members to obtain their opinions in terms of:

- Test sections align with trainees' proficiency.
- Sections accurately represent the targeted skills.
- Test items cover intended EFL written communication skills
- Other modifications suggested by the expert panel.

The jury members approved the test but with few modifications. In response to the feedback presented by a group of jury members and researchers (n=13) (see Appendix A) in the field of English language teaching, significant modifications were made to formulate the final version of the test that was comprehensive, standardized, and balanced.

B. Internal Consistency Validity

The researcher used the SPSS V.18 software to calculate the internal consistency validity of the test through:

1. Internal Consistency of the Sub-Skills in the Test

The validity of the sub-skills in the test was determined by calculating the Pearson correlation coefficient (Weisburd et al., 2020, p. 482). This process included assessing the correlation between trainees' scores in each subskill and their scores in the corresponding main written communication skill. Noteworthy associations include strong associations between the subskills of

linguistic competence (mastery of correct grammatical structure and choosing appropriate and varied vocabulary) and written communication skills. Additionally, the sub-skills of content (content by title, content development, context, and purpose for writing) perfectly correlated with the main skill. Furthermore, the sub-skills of mechanics (spelling, punctuation, and editing) perfectly correlated with the main skill. Likewise, the sub-skills of style (clarity, tenor, and length) demonstrated a perfect correlation with the main skill. The findings highlight significant correlations at 0.01, emphasizing the strong relationship between the sub-skills and their respective main skills in written communication.

2. Internal Consistency of the Main Skills for written Communication

The validity of the main skills in the test was assessed by calculating the Pearson correlation coefficient (Weisburd et al., 2020, p. 482), which involved determining the correlation between the trainees' scores in each main skill in written communication and their overall scores. Notable correlations include strong associations between linguistic competence (0.765**), discourse competence (0.849**), content (0.845**), mechanics (0.702**), and style (0.999**). The findings indicate statistically significant correlations at 0.01, confirming the robust relationship between trainees' performance in specific main skills and their overall proficiency in written communication.

3. Internal Consistency of Overall Written Communication Skills

The validity of overall written communication skills was calculated by determining the Pearson Correlation Coefficient (Weisburd et al., 2020, p. 482). The Pearson Correlation Coefficients illustrate the relationships between trainees' scores in written communication skills and their overall test scores. The correlation coefficient is significantly high at 0.989**, and its significance at 0.01 indicates a strong correlation, which indicates the internal consistency and validity of the test. All correlation coefficients showed statistical significance at 0.01, confirming the observed relationships' strength.

4.Discriminant Validity

The discriminant validity of the test was assessed by selecting 27% of high scores and 27% of low scores from a sample of 30 employees. The Mann-Whitney test (Weisburd et al., 2020, p. 348) was then used to evaluate the significance of the differences between these means. The findings indicated statistically significant differences at 0.01 between the high and low proficiency groups in written communication skills, where the Z-value was 3.381, confirming this significant distinction. This finding indicates that the test shows a high degree of discriminant validity.

1.7.2.3 Calculating the Reliability of the Test

The reliability of the test was evaluated using two methods: Cronbach's alpha coefficient, which measures internal consistency, and the test-retest reliability method, which assesses consistency over time.

Internal consistency of the EFL written communication skills test was evaluated using Cronbach's alpha coefficient method (Taber, 2018, p. 1275). The calculated coefficient for written communication skills was 0.791. A high Cronbach's alpha value indicates that the test shows a high level of reliability, indicating that the items in the test are internally consistent and reliable measures of the written communication skills being assessed.

A test-retest reliability analysis was conducted to assess the consistency of the EFL written communication skills test over time. The test was administered to a sample of employees (n=30) and then re-administered to the same sample after a two-week interval. The Pearson correlation coefficient (Weisburd et al., 2020, p. 482) was calculated using SPSS software V. 18 to compare employee scores between the two administrations. Correlation coefficients were determined for each skill assessed by the test, as well as for the overall test score (see Table 1). The high and statistically significant correlation coefficients ($p < 0.01$) for both individual skills and the overall test indicate strong test-retest reliability

Table 1

Test-Retest Reliability Coefficients for the EFL written communication skills test using the Test-Retest method (N = 30)

Skills	EFL Written Communication Skills
Correlation Coefficients	0.872**

** . Correlation is significant at 0.01

Table 1 indicates that the correlation coefficients for the overall test are high and statistically significant at 0.01, confirming the reliability of the test.

1.7.2.4 Timing the EFL Communication Skills Test

The test time was determined by calculating the mean time taken by all participants in the sample. The researcher then concluded that the appropriate duration for the test was 30 minutes.

1.7.3 The EFL Written Communication Skills Rubric

The researcher developed the rubric based on various resources to ensure its suitability for trainees' levels and the program's objectives. The rubric assesses trainees' written communication skills and assigns a pre-post test score in the EFL communication skills. The rubric underwent validation by a jury of specialists in curriculum and instruction (EFL) (n=13) (see Appendix A). They approved the rubric with modifications: it should be a five-point Likert scale rubric instead of four, ranging from excellent to poor, and the comprehensibility criteria should be added

1.7.4. The Blended Learning Program and Instructor Guide

The blended learning based program was carefully developed, placing learner needs at the forefront of the process. The program began with a needs analysis questionnaire administered to Telecom Egypt customer service employees, identifying the most crucial EFL written communication skills and essential topics to incorporate within the program. This data-driven approach ensured that the program directly addressed learners' specific needs and skill gaps, maximizing its effectiveness and relevance.

To develop an effective blended learning program, the researcher conducted a comprehensive review of established instructional design models. The models considered included the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) (Brown & Green, 2016, p. 12); McCarthy's 4MAT model (McCarthy & McCarthy, 2006, p. 23); and the ASSURE model (Smaldino et al., 2013, p.12). After careful consideration, the ASSURE model was chosen as the preferred framework for this program. The ASSURE model was chosen because of its systematic approach, offering a structured and comprehensive framework for designing blended learning experiences. This model comprises six distinct stages: 1) Analyzing learners, 2) Stating objectives, 3) Selecting methods, media, and materials, 4) Utilizing media and materials, 5) Requiring learner participation, and 6) Evaluating and revising (Smaldino et al., 2013, p. 53).

1.7.4.1 Steps for Developing the blended learning Program for Telecom Egypt Customer Service Employees

This program aims to equip Telecom Egypt customer service employees with the essential EFL written blended learning approach, integrating activities to meet diverse communication skills required for daily customer communication. It adopts a needs and learning styles.

Step 1: Analyse Learners

A needs analysis questionnaire was conducted with Telecom Egypt customer service employees. This analysis identified the EFL written communication skills required for effective customer service interactions, ensuring the program content directly addresses their needs.

Step 2: State Objectives

1. Aim: The program's main objective was to develop some EFL written communication skills of Telecom Egypt customer service employees.
2. Objectives: Regarding the EFL written communication skills, the program was expected to develop five sub-skills: linguistic competence, discourse competence, content, mechanics, and style.

Step 3: Select Methods, Media, and Materials

Based on the in-depth needs analysis, the program's content is developed mainly to address the specific needs and skill gaps of Telecom Egypt's customer service employees. Moreover, the program activities have been carefully crafted to cater to adult learners' unique needs and circumstances in an EFL context. Adult learners have unique characteristics and motivations that set them apart from traditional learners (Chan & Uhlmann, 2015, p. 3). For example, writing exercises such as composing formal emails and business letters have been included to provide practical experience and facilitate skill application in real-world scenarios.

Step 4: Utilize Media and Materials

The program utilizes a well-rounded blend of learning methods consisting of five units: Formal Emails, Agendas and memos, Business Letters, Reports, Sales Materials, and Revision. These units are conducted both face-to-face and online via Cisco Webex. The platform was chosen due to its widespread use and features that cater to the needs of Telecom Egypt's customer service employees (Cisco, 2023). The blended learning program aims to create a holistic learning experience by combining interactive face-to-face exercises with the convenience and flexibility of online learning.

Step 5: Require Learner Participation

This section directly addresses learner participation as it outlines the various aspects of communication skills that the program actively seeks to develop in trainees. Effective communication in customer service requires skills beyond grammar and vocabulary. This program prioritizes the development of practical EFL written communication skills crucial for success in customer interactions. It is important to note that these EFL written communication skills were selected based on the needs analysis results (see Appendix I). The emphasis expands beyond language skills to include key areas such as: Written Communication Skills and Sub-skills: Linguistic competence involves two sub-skills: 1) Mastery of correct grammar structure, and 2) Selection of appropriate and diverse

vocabulary. Discourse Competence involves one main sub-skill: 1) Coherence and cohesion. Content involves three sub-skills: 1) Title, 2) Development, and 3) Context and purpose. Mechanics involves three sub-skills: 1) Spelling, 2) Punctuation, and 3) Editing. Style involves three sub-skills: 1) Clarity, 2) Tenor, and 3) Length. By actively participating in the program, learners can develop these critical written communication skills, enabling them to excel in customer service interactions.

Step 6: Evaluate and Revise

Learner progress and program effectiveness are evaluated using a range of assessment methods, including both formative and summative assessments. The program undergoes continual evaluation and refinement throughout its implementation based on data and learner feedback. Regular updates, enhancements to instruction, and integration of technological advancements ensure the program remains relevant, effective, and responsive to evolving customer service needs and industry trends. Additionally, the program offers resources to support employees in their career development, such as professional development opportunities and career advancement guidance.

1.7.4.2 Instructor's Guide of the Blended learning Program

A. Instructor's Guide Overview

The Instructor's Guide is a comprehensive resource developed mainly for the blended learning program, consisting of 5 units that focus on developing some EFL written communication skills. It serves as a foundational tool for educators, offering detailed lesson plans, assessments, and resources to ensure the effective implementation of the program.

B. Instructor's Guide Main Components

- **Introduction:** It explains the program structure, blended learning approach, and overall learning objectives.
- **Unit Overview:** It summarizes the focus and key competencies covered in the 5 units.
- **Lesson Plans:** These provide detailed plans outlining learning objectives, materials, activity instructions,

discussion questions, assessments, differentiation strategies, and connections to previous/future lessons for each 60-120-minute lesson.

- Assessments: It provides formative and summative assessment tools to measure learners' progress.
- Resources: It provides handouts, worksheets, presentations, and reproducible visual and multimedia aids to support trainees learning.
- References: It provides a formatted list of sources and materials consulted in developing lessons.
- Glossary: It provides basic terms, vocabularies, and definitions for clarity and understanding.
- Appendices: They provide additional materials and resources are organized by unit.

1.8 Administering the Pre-Post-Test of the EFL Written Communication Skills

The EFL written communication skills pre-test was administered to the study group on November 11th, 2023, seven days before the experiment. The post-test was administered to the study group on January 22nd, 2024.

1.9 Duration of Administration of the Blended Learning Program

The experiment was conducted in the Training and Development Sector of Telecom Egypt, specifically at Tanta Training Center. The study involved interactive sessions conducted both face-to-face and online via the Cisco Webex platform. Two groups of customer service employees participated in the study from November 20, 2023, to January 22, 2024. Each training day lasted for 4 hours.

1.10 Findings of the Study

1.10.1 Verifying the First Hypothesis

In order to determine whether the first hypothesis of the study is valid, which states that “there is a statistically significant difference at $\alpha \leq 0.05$ between the scores mean of the experimental

and those in the control group in the post-test applications of overall written communication skills, and in each sub-skill separately, in favour of the experimental group,” an Independent Samples t-test was conducted. Table 2 presents the participants’ scores mean, standard deviations, t-value, level of significance, and effect size.

Table 2

Findings of the t-test between the scores mean of the experimental and those in the control group in the post-test applications

Main Skills	Full Mark	No.	Group	Mean	Std.	t-value	A Sig	DF	η^2
1. Linguistic Competence	20	30	EXP. ¹	15.33	2.72	13.22	0.01	58	0.75
		30	Control	6.70	2.32				
2. Discourse Competence	20	30	EXP.	15.17	2.78	8.1	0.01	58	0.5
		30	Control	9.70	2.42				
3. Mechanics	20	30	EXP.	15.73	1.60	8.20	0.0	58	0.53
		30	Control	10.93	2.78				
4. Content	20	30	EXP.	16.30	1.68	7.6	0.0	5	0.5
		30	Control	11.43	3.04				
5. Style	20	30	EXP.	15.63	1.85	5.5	0.0	5	0.35
		30	Control	11.73	3.34				
Overall Written Communication Skills	100	30	EXP.	78.17	8.35	10.54	0.01	58	0.65
		30	Control	50.5	11.69				

Table 2 indicates that there is a statistically significant difference at a significance level ($\alpha \leq 0.01$) between the scores mean of trainees in the experimental and those in the control group in the post-test applications for overall written communication skills and in each sub-skill separately, in favour of the experimental group which, indicates the acceptance of the first hypothesis.

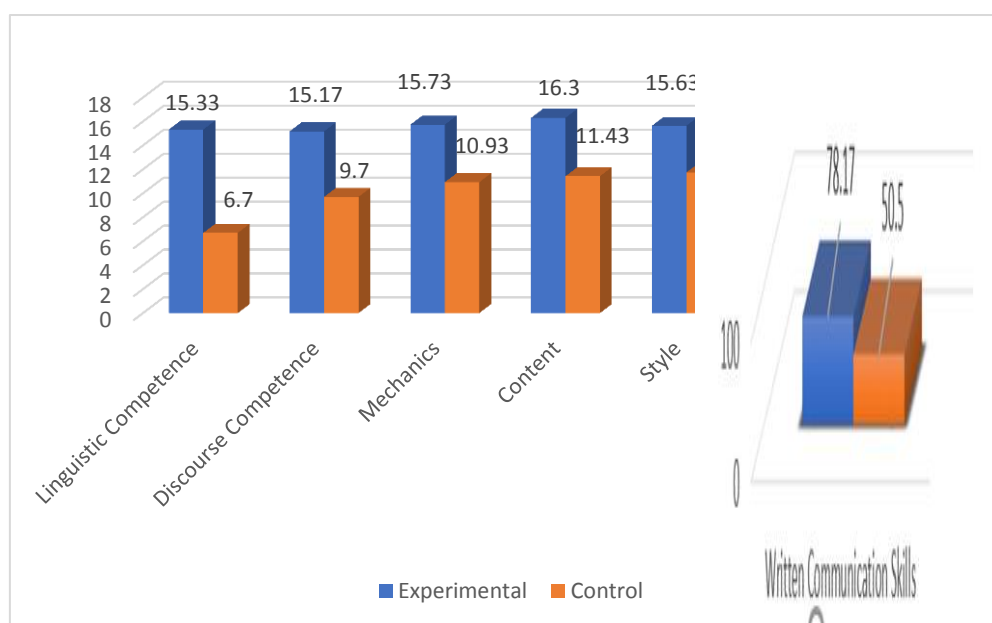
Additionally, the effect size (η^2) was calculated to measure the effect size of the experimental treatment on overall written communication skills. The experimental treatment's effect size (η^2)

EXP.¹ stands for experimental group.”¹

on overall written communication skills ranged between (0.350 – 0.751), which are substantial values significantly higher than 0.14, which signifies a significant and high effect of the experimental treatment. Figure 1 illustrates the difference between the scores mean of trainees in the experimental and those in the control group in the post-test applications for overall written communication skills and in each sub-skill separately.

Figure 1

Findings between the scores mean of trainees in the experimental and those in the control group in the post-test applications



1.10.2 Verifying the Second Hypothesis

In order to determine whether the first hypothesis of the study is valid, which states that "There is a statistically significant difference at $\alpha \leq 0.05$ between the scores mean of the experimental group in the pre-and post-applications of the written communication skills, in favour of the post-application," the paired-samples t-test was calculated for two related samples to assess the significance of differences between the means of scores in the pre-and post-applications of the written communication skills test, in favour of the post-application. The effect size (η^2) of the experimental treatment on EFL written communication skills was calculated, and the

following table (Table 3) presents the participants' scores mean, standard deviations, t-value, level of significance, and effect size.

Table 3

Findings of the t-test between the scores mean of trainees in the experimental group in the pre-test and post-test applications

Main Skills	Full Mark	No.	Test	Mean	Std.	t-value	α Sig	DF	η^2
1. Linguistic Competence	20	30	Pre	5.83	0.53	19.740	0.01	29	0.931
		30	Post	15.33	2.72				
2. Discourse Competence	20	30	Pre	10.00	4.55	5.663	0.01	29	0.525
		30	Post	15.17	2.78				
3. Mechanics	20	30	Pre	8.87	2.05	15.204	0.01	29	0.889
		30	Post	15.73	1.60				
4. Content	20	30	Pre	9.17	2.38	14.898	0.01	29	0.884
		30	Post	16.30	1.68				
5. Style	20	30	Pre	9.60	2.47	14.389	0.01	29	0.877
		30	Post	15.63	1.85				
Overall Written Communication Skills	100	30	Pre	43.47	9.28	17.920	0.01	29	0.917
		30	Post	78.17	8.35				

Table 3 indicates that there is a statistically significant difference at $\alpha \leq 0.01$ between the scores mean of the experimental group in the pre-and post-applications of the written communication skills, in favour of the post-application, and this indicates acceptance of the second hypothesis. The experimental treatment's effect size (η^2) on EFL written communication skills ranged between (0.525 – 0.931), which is a great value and higher than (0.14), indicating a significant and substantial effect. The following figure shows the difference between the means of the scores of the experimental group trainees in the pre-and post-applications of the written communication skills test.

1.11. Overall EFL Written Communication Skills

Findings showed that the program significantly developed overall EFL written communication skills. The experimental group significantly outperformed the control group in the posttest, and the

difference was statistically significant at $p < 0.01$. The great effect size ($\eta^2 = 0.917$) indicates the practical importance of this improvement, which indicates that the program has a profound positive effect on enhancing customer service employees' EFL written communication skills.

1.11.1 EFL Written Communication Sub-skills

The program resulted in significant gains across all EFL written communication sub-skills:

- **Linguistic Competence:** The experimental group showed moderate to high gains in vocabulary, grammar, and overall linguistic competence for writing ($\eta^2 = 0.751$).
- **Discourse Competence:** There was a substantial enhancement in the experimental group's ability to compose coherent and cohesive written discourse. A significant improvement was observed in crafting clear and cohesive written expressions ($\eta^2 = 0.532$).
- **Mechanics:** The participants in the program showed noticeable development in the mechanics of writing, encompassing spelling, punctuation, editing, and overall mechanical aspects. The effect size for this category was 0.537, with particularly significant gains observed in spelling and punctuation.
- **Content:** The program helped participants create content that fits their purpose better. It also developed their skills in adding details and thinking about context ($\eta^2 = 0.504$), which means they can now create content that serves its purpose well, includes more detail, and considers the intended situation.
- **Style:** Trainees in the experimental group demonstrated gains in various elements of writing style, including clarity, tone, length, and overall style of written expression. The effect size for improvements in style was substantial at 0.350, indicating positive developments in the participants' expressive writing abilities.

The program also caused notable development in all aspects of written communication for the experimental group compared to the

control group. The experimental group exhibited moderate to high gains in vocabulary, grammar, and overall linguistic competence for writing ($\eta^2 = 0.751$). Through training, trainees improved their writing, demonstrating mastery of grammar. A more expansive vocabulary is evident in the transformation from the unclear "I interested work customer service" to the clear and professional "I am interested in working in customer service."

Furthermore, substantial enhancement was observed in the experimental group's ability to compose coherent and cohesive written discourse. Significant improvement was noted in crafting clear and cohesive written expressions ($\eta^2 = 0.532$), indicating the program's effectiveness in fostering EFL written communication skills. The training program yielded remarkable results regarding the trainees' written communication skills. Previously characterized by disorganization and unclear transitions, their writing has improved significantly, becoming transparent and exciting to read. This transformation is evident in the shift from a simple statement like "I like customer service" to the declaration, "I'm passionate about pursuing a career in this field." This change shows better grammar and the trainees' confidence in discussing their career goals.

Trainees also showed noticeable development in writing mechanics, including spelling, punctuation, editing, and overall mechanical aspects. The effect size for this category was 0.537, with particularly significant gains observed in spelling and punctuation. Trainees developed their mechanics in written communication skills. They used to make spelling and punctuation errors. After the training, they developed spelling, punctuation, and proofreading accuracy. For instance, frequent spelling errors noticed, such as 'expreience', have been minimized to 'experience.'

Additionally, the program aided the experimental group in creating content that aligns with their purpose, enhancing their skills in adding more details and considering context ($\eta^2 = 0.504$). Trainees developed their ability to produce well-developed content by thoroughly exploring ideas. Previously, their statements lacked depth and detail, such as "Customer service is important because it helps customers." After the training, they expressed more comprehensive ideas, as demonstrated by statements like "Effective

customer service is crucial for retaining customers and fostering positive relationships..." This improvement indicates that they produced content that effectively fulfilled its purpose and incorporated more detail and context.

Moreover, the experimental group demonstrated achievements in various elements of writing style, including clarity, tone, length, and overall writing style. The effect size for improvements in style was substantial at 0.350, indicating positive developments in the participants' expressive writing abilities. Trainees demonstrated a consistent professional tone throughout their writing. This improvement was evident in the transformation from an informal greeting like "Hey, I'm interested in the job" to a formal and targeted introduction like "Dear Hiring Manager, I am writing to express my interest in the available position."

In addition to the improvements observed in the aforementioned written communication skills, the program enhanced trainees' abilities to compose emails, agendas, memos, business letters, cover letters, reports, sales materials, and brochures. Trainees demonstrated proficiency in crafting formal emails, agendas, and memos with appropriate language, structure, and content. They became skilled in writing well-structured business letters, including persuasive cover letters tailored to specific job applications. Moreover, their report-writing abilities improved, enabling trainees to produce reports with precise components, effective openings, conclusions, and actionable recommendations. Additionally, trainees developed expertise in creating various sales materials, such as informative and persuasive brochures, to promote products and services effectively.

The blended learning based program improved participants' written communication skills. Pretest results revealed weaknesses in participants' ability to address customer concerns and provide solutions via emails and reports. Their written communication skills were lacking, making it difficult for recipients to follow the message. In addition, technical terms were misused, and grammatical errors were frequent. In contrast, post-test results likely showed significant improvements. Participants can now write emails directly addressing customer frustrations and providing clear solutions. The program

may have promoted a more logical structure, including headings. Furthermore, participants demonstrated a stronger understanding of technical vocabulary and correct grammar, resulting in clearer and more concise communication. Finally, the program helps develop a professional and empathic tone, enabling participants to acknowledge customer concerns while conveying confidence in resolving the problem. The program equipped participants with the writing skills to craft effective customer service emails, demonstrating a solutions-oriented approach. The program presented broad effectiveness across customer service employees' written English communication skills as evidenced by the presence of statistically significant differences and high effect size in favour of the experimental group to which the program was applied, highlighting the value of blended learning programs, such as the current program for teaching and training EFL written communication skills in the workplace.

1.12 Conclusion

The purpose of this study was to examine whether a tailored blended learning-based program was effective in enhancing the English as a Foreign Language (EFL) written communication skills of customer service employees in the telecommunications sector. The study found a significant improvement in overall EFL written communication skills, likely due to the program's focus on face-to-face interactions and online activities. The findings of the study suggest that the program significantly improved overall EFL written communication skills by promoting smooth face-to-face interactions and engaging online activities. The experimental group demonstrated a statistically significant improvement in all areas of written communication (linguistic competence, discourse competence, content, mechanics, and style) compared to the control group, with great effect sizes observed. These results highlight the importance of the program in equipping employees with the necessary EFL written communication skills to provide exceptional customer service.

1.13 Recommendations

Based on the findings of this study, the following actions are recommended:

- Telecom Egypt should expand the tailored blended learning program to customer-facing roles across different departments to significantly improve employees' English communication skills throughout the company.
- EFL written communication skills training should be prioritized as an ongoing effort through refresher courses, workshops, and training sessions to ensure sustainable maintenance and continuous improvement of employees' proficiency over time. The training will help create a workplace culture that values language skill development.
- Practical activities, such as peer collaboration, role-playing, and interactive tasks, should be incorporated into training sessions to allow employees to apply their language skills in real-life situations.
- Pre-training and post-training assessments should be conducted to measure the development of EFL written communication skills and identify areas for further improvement.

1.14 Suggestions for Further Research

The findings of the present study suggest the need for further research in the following areas:

- Longitudinal studies should be conducted to assess the long-term impact of the tailored blended learning program on employees' written communication skills over time.
- The scope of the study can be broadened by exploring various customer-facing roles, such as sales, technical support, and marketing, in addition to customer service.
- The effectiveness of customized blended learning programs tailored to specific professions and industries, such as healthcare and engineering, should be

investigated in improving relevant language skills, such as technical writing and negotiation.

- Qualitative research should be conducted through interviews and focus groups to uncover employees' experiences and satisfaction with the tailored blended learning program

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