# Changes in Five Dimensions of Interpersonal Communication Following Group Guidance with Assertive Training: A Pre-Experimental Study of Vocational High School Students

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***Abstract***

*Interpersonal communication is essential for vocational high school students in developing constructive social relationships and expressing their thoughts and emotions appropriately. This study aimed to examine changes in five aspects of interpersonal communication following group guidance incorporating assertive training at SMK Farmatikom Pekanbaru, Indonesia. A quantitative pre-experimental approach with a one-group pretest–posttest design was employed. Ten Grade XI students with low to moderate interpersonal communication scores were selected through purposive sampling. The intervention consisted of eight group guidance sessions involving assertive communication exercises, behavioral modeling, role-playing, and feedback. Data were collected using an interpersonal communication scale covering openness, empathy, supportiveness, positiveness, and equality. Data analysis involved descriptive statistics, the Wilcoxon signed-rank test, and normalized gain (N-Gain). The mean score increased from 65.00 to 87.40, with a reported Wilcoxon significance value of 0.005 and an N-Gain of 0.40, categorized as moderate. Supportiveness showed the largest descriptive increase (28.80 percentage points), followed by equality (28.00 percentage points). These findings indicate positive changes in interpersonal communication scores following the intervention. However, the small sample and absence of a control group limit causal interpretation.*

***Kata Kunci:***
*Komunikasi Interpersonal; Bimbingan Kelompok; Latihan Asertif; Siswa Sekolah Menengah Kejuruan; Penelitian Pra-Eksperimental.*

***Abstrak***

*Komunikasi interpersonal merupakan kemampuan penting bagi siswa sekolah menengah kejuruan dalam membangun hubungan sosial yang konstruktif serta mengungkapkan pikiran dan perasaan secara tepat. Penelitian ini bertujuan mengkaji perubahan lima aspek komunikasi interpersonal setelah mengikuti layanan bimbingan kelompok dengan teknik assertive training di SMK Farmatikom Pekanbaru. Penelitian menggunakan pendekatan kuantitatif dengan desain pra-eksperimental one-group pretest–posttest. Sebanyak sepuluh siswa kelas XI dengan kategori komunikasi interpersonal rendah hingga sedang dipilih melalui teknik purposive sampling. Intervensi dilaksanakan melalui delapan sesi bimbingan kelompok yang mencakup latihan komunikasi asertif, pemodelan perilaku, bermain peran, dan pemberian umpan balik. Data dikumpulkan menggunakan skala komunikasi interpersonal yang meliputi keterbukaan, empati, sikap mendukung, sikap positif, dan kesetaraan. Analisis data menggunakan statistik deskriptif, uji Wilcoxon, dan normalized gain (N-Gain). Hasil menunjukkan peningkatan rerata skor dari 65,00 menjadi 87,40, dengan nilai signifikansi Wilcoxon yang dilaporkan sebesar 0,005 dan N-Gain sebesar 0,40 dalam kategori sedang. Peningkatan terbesar terjadi pada aspek sikap mendukung (28,80 poin persentase), diikuti kesetaraan (28,00 poin persentase). Temuan menunjukkan perubahan positif skor komunikasi interpersonal setelah intervensi. Namun, ukuran sampel yang kecil dan tidak adanya kelompok kontrol membatasi kesimpulan kausal.*

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## Introduction

Interpersonal communication is an essential developmental competence that enables adolescents to express thoughts and emotions, develop meaningful social relationships, negotiate disagreements, and participate constructively in educational environments. For vocational high school students, communication skills are particularly important because learning activities frequently involve collaboration, practical assignments, peer interactions, and preparation for professional environments. DeVito (2016) conceptualized interpersonal communication as a dynamic process involving the exchange and interpretation of messages within interpersonal relationships. From a developmental perspective, communication competence is closely associated with broader social and emotional skills that support adaptive interpersonal functioning. Durlak et al. (2011) in a meta-analysis of 213 school-based social and emotional learning programs involving 270,034 students, demonstrated that structured educational interventions can improve students' social and emotional skills, attitudes, behavior, and academic performance. Similarly, de de Mooij et al. (2020) emphasized the relevance of structured social skills training for children and adolescents, while Speed et al. (2018) highlighted the importance of assertive self-expression in interpersonal functioning. These findings indicate that interpersonal communication should be treated as a developmental competence requiring systematic learning opportunities rather than an ability that necessarily develops through ordinary classroom interactions alone. Therefore, school guidance and counseling services have an important role in providing students with structured opportunities to develop communication skills relevant to both academic and social contexts.

Interpersonal communication involves several interrelated dimensions that contribute to the quality of social interactions. Drawing on DeVito (2016) interpersonal communication framework, this study examines five dimensions: openness, empathy, supportiveness, positiveness, and equality. Openness concerns an individual's willingness to communicate thoughts, feelings, and experiences appropriately, while empathy refers to the capacity to understand another person's emotional experiences and psychological perspective. Supportiveness reflects communication behaviors that encourage mutual understanding and minimize defensive interpersonal reactions. Positiveness involves maintaining constructive attitudes toward oneself and others, whereas equality emphasizes recognizing the dignity, perspectives, and interpersonal rights of communication partners (DeVito, 2016). These dimensions are relevant to adolescents because communication requires a balance between expressing individual perspectives and respecting the experiences of others. Research on school-based social and emotional learning suggests that interpersonal skills can be supported through structured instruction and practice (Durlak et al., 2011) . Moreover, assertiveness training specifically emphasizes communicating personal rights and preferences without disregarding those of others (Speed et al., 2018). Accordingly, the five dimensions provide a useful framework for describing different aspects of students' interpersonal communication, although their empirical distinctiveness must be supported by appropriate instrument validation.

Adolescents may experience interpersonal communication difficulties when confronting peer pressure, expressing disagreement, refusing requests, or communicating uncomfortable emotions. Students who lack confidence in expressing their perspectives may avoid discussions, remain silent during disagreements, or comply with others' expectations despite

personal objections. These behavioral patterns may limit students' opportunities to develop balanced and reciprocal interpersonal relationships. Speed et al. (2018) described assertiveness as an important interpersonal capacity that can be strengthened through structured behavioral training. In the educational context, Akbar et al. (2020) examined the effectiveness of assertive training on interpersonal communication and peer conformity, demonstrating the relevance of this approach to students' interpersonal functioning. Purita et al. (2015) also investigated assertiveness training among vocational high school students in Yogyakarta and reported improvements in interpersonal communication skills using a pretest–posttest control group design. These findings indicate that difficulties in interpersonal communication may be addressed through behavioral exercises that encourage students to express their preferences and respond appropriately to interpersonal demands. In addition, Omura et al. (2017) , through a systematic review involving healthcare professionals and students, identified assertiveness communication training as a potentially beneficial approach for strengthening communication. Although the populations and settings differ, this broader literature supports examining assertive communication as a trainable interpersonal skill.

Preliminary observations at SMK Farmatikom Pekanbaru indicated that several students experienced difficulties expressing personal opinions, communicating emotions, and responding assertively during interpersonal interactions. Some students appeared reluctant to communicate disagreement, particularly when their views differed from those of their peers, while others experienced difficulty declining requests or maintaining personal decisions under social pressure. These observations suggest challenges associated with openness, clarity of self-expression, and maintaining equality within interpersonal relationships, as conceptualized through DeVito (2016) framework. Similar communication-related concerns have been examined in previous Indonesian school counseling research. Akbar et al. (2020) investigated interpersonal communication and peer conformity among students, whereas Purita et al. (2015) specifically examined assertiveness training among vocational high school students. Liqa Fadhila et al. (2024) further highlighted the relevance of group guidance incorporating assertiveness training for interpersonal communication development. Nevertheless, findings from these studies cannot be assumed to represent the circumstances of students at SMK Farmatikom Pekanbaru. The preliminary observations in the present setting therefore provided a contextual basis for investigating interpersonal communication changes among selected students. These observations should not, however, be interpreted as population-level evidence regarding the prevalence of communication difficulties among vocational students.

Group guidance incorporating assertive training represents a potentially relevant intervention because it combines structured interpersonal interaction with opportunities for behavioral rehearsal and constructive feedback. Group guidance allows students to exchange perspectives, observe alternative communication responses, and reflect on how their interpersonal behavior affects others. Assertive training provides a behavioral focus by encouraging individuals to communicate opinions, emotional experiences, refusals, and disagreements clearly while maintaining respect for others. Speed et al. (2018) described assertiveness training as an established intervention approach addressing interpersonal self-expression, while Omura et al. (2017) reviewed the effectiveness of assertiveness communication training programs across educational and professional contexts. From a broader skills-development perspective, de Mooij et al. (2020) examined effective components of social skills training programs for children and adolescents, supporting the

importance of carefully designed skill-building interventions. Within Indonesian educational settings, Nuha et al. (2024) systematically reviewed behavioral approaches involving assertive training and their relevance to interpersonal communication skills. Furthermore, Liqa Fadhila et al. (2024) reported findings supporting group guidance with assertiveness training for improving students' interpersonal communication. These studies provide a rationale for examining whether guided behavioral practice, modeling, role-playing, and feedback are associated with changes in students' communication scores following structured counseling activities.

Previous empirical studies provide a foundation for applying assertive training within school guidance and counseling programs. Purita et al. (2015) examined assertiveness training among vocational high school students and reported improvements in interpersonal communication compared with a control condition. Akbar et al. (2020) demonstrated the relevance of assertive training for addressing interpersonal communication and peer conformity among students. Liqa Fadhila et al. (2024) investigated group guidance using assertiveness training through a nonequivalent control group design and reported positive outcomes for students' interpersonal communication. Nuha et al. (2024) further synthesized studies addressing assertive training and communication development, demonstrating continuing research interest in this intervention approach. The broader review by Speed et al. (2018) also indicated that assertiveness training has an established theoretical and empirical foundation, although its application varies across populations and contexts. Meanwhile, Omura et al. (2017) emphasized the importance of systematically examining the effectiveness of communication training programs. Taken together, these studies suggest that assertiveness training is a potentially relevant approach for strengthening interpersonal communication. However, the findings should be interpreted according to differences in participant characteristics, intervention procedures, measurement instruments, and research designs. Consequently, evidence from previous studies provides a rationale for the present intervention but does not establish its effectiveness within the specific school setting investigated.

Despite previous research on assertiveness training and interpersonal communication, further investigation is warranted regarding changes across specific dimensions of communication following structured group guidance. Earlier studies have provided evidence concerning overall interpersonal communication, assertive behavior, and related social characteristics (Akbar et al., 2020; Liqa Fadhila et al., 2024; Purita et al., 2015). Furthermore, Nuha et al. (2024) identified the relevance of behavioral assertiveness approaches for interpersonal communication development, while de Mooij et al. (2020) highlighted the importance of examining components of social skills interventions. Nevertheless, the extent to which changes in composite interpersonal communication scores are accompanied by different patterns across openness, empathy, supportiveness, positiveness, and equality requires closer examination in the present setting. The current study addresses this question by describing changes across the five communication dimensions operationalized from DeVito (2016) framework following eight assertive training sessions. Its contribution lies primarily in providing dimension-specific and contextually situated evidence among vocational high school students at SMK Farmatikom Pekanbaru. This contribution should not be interpreted as establishing a previously unexplored intervention, given the existing studies on assertive training in vocational and other school settings (Liqa Fadhila et al., 2024; Purita et al., 2015) . Instead, the study extends the discussion by presenting patterns of change across

multiple communication dimensions within a particular school counseling context.

Based on the theoretical framework, preliminary observations, and previous empirical evidence, this study aims to examine changes in interpersonal communication among Grade XI students at SMK Farmatikom Pekanbaru following group guidance incorporating assertive training. The research is informed by DeVito (2016) multidimensional conceptualization of interpersonal communication and by the behavioral rationale for assertiveness training discussed by Speed et al. (2018). Evidence from school-based communication interventions (Akbar et al., 2020; Liqa Fadhila et al., 2024; Purita et al., 2015) and research syntheses on assertiveness and social skills development (de Mooij et al., 2020; Nuha et al., 2024; Omura et al., 2017) provides additional support for investigating this approach. Specifically, the study compares students' pretest and posttest interpersonal communication scores and describes changes across openness, empathy, supportiveness, positiveness, and equality. Using a quantitative one-group pretest–posttest design, ten purposively selected students participated in eight group guidance sessions incorporating assertive training techniques. The study hypothesizes that interpersonal communication scores will be higher following participation in the intervention. Nevertheless, because the research design does not include a comparison group or random assignment, the findings are intended to provide preliminary evidence of within-group changes rather than definitive proof of a causal intervention effect.

## METHODS

### Research Design

This study employed a quantitative approach using a pre-experimental one-group pretest–posttest design to examine changes in interpersonal communication among vocational high school students following group guidance incorporating assertive training techniques. The research involved two measurements administered to the same group of participants, with a pretest conducted before the intervention and a posttest administered after the completion of the counseling activities (Suardi et al., 2026; Zikie et al., 2026). The absence of random assignment and a comparison group meant that the study primarily assessed within-group changes rather than establishing a causal effect of the intervention. Accordingly, the findings were interpreted as preliminary evidence of changes in students' interpersonal communication following the group guidance program.

### Research Setting and Participants

The study was conducted at SMK Farmatikom Pekanbaru, Indonesia, between May and July 2026. The participants consisted of ten Grade XI students selected using purposive sampling based on their identified interpersonal communication difficulties and initial assessment scores. The pretest classification showed that six students (60%) were in the low interpersonal communication category, while four students (40%) were in the moderate category. Therefore, the intervention group comprised students with low to moderate interpersonal communication scores. The use of purposive sampling enabled the researchers to focus on students who demonstrated communication difficulties relevant to the intervention objectives. Nevertheless, the small sample size and nonprobability sampling procedure restricted the representativeness of the participants and limited the generalizability of the findings to broader vocational student populations.

**Research Instrument**

Interpersonal communication was assessed using a Likert-type scale developed with reference to five dimensions of effective interpersonal communication: openness, empathy, supportiveness, positiveness, and equality, as discussed in DeVito's (2016) interpersonal communication framework. Openness refers to an individual's willingness to express thoughts, feelings, and personal perspectives appropriately. Empathy involves understanding and considering another person's emotional experiences. Supportiveness reflects communication that promotes constructive interpersonal interaction, whereas positiveness concerns maintaining respectful and constructive attitudes toward oneself and others. Equality emphasizes recognizing the dignity and interpersonal rights of all individuals involved in communication.

Before the main study, the instrument was tested with 30 respondents. The instrument scores were subsequently used to classify participants into low, moderate, and high interpersonal communication categories. The reported score ranges were 24–56 for the low category, 57–88 for the moderate category, and 89–120 for the high category. However, the available study documentation does not provide sufficient information concerning the precise number of retained items, item distribution across the five dimensions, response options, scoring of negatively worded items, item validity coefficients, or reliability estimates. These measurement properties require confirmation to establish the transparency and reproducibility of the instrument.

**Intervention Procedures**

The intervention was implemented through ten meetings, comprising one pretest meeting, eight group guidance sessions incorporating assertive training, and one posttest meeting. The eight intervention sessions focused on practical communication situations relevant to students' everyday interpersonal experiences. The activities included expressing personal opinions, communicating feelings, refusing requests, expressing disagreement, managing interpersonal conflict, and responding to peer pressure. Assertive training was incorporated through instructional activities, modeling, role-playing, behavioral rehearsal, and feedback. These techniques provided opportunities for students to practice expressing their needs and perspectives clearly while maintaining respect for others. The group format also allowed participants to observe alternative communication responses, receive feedback from peers, and reflect on the consequences of their interpersonal behavior. Through repeated communication exercises, students were encouraged to recognize passive or ineffective communication patterns and practice more assertive alternatives. The activities were conceptually consistent with the behavioral orientation of assertiveness training described by Speed et al. (2018), particularly the use of structured practice to strengthen self-expression and interpersonal functioning. Nevertheless, the available documentation does not specify the detailed objectives, duration, or implementation fidelity of each intervention session.

**Data Collection**

Data were collected through pretest and posttest administration of the interpersonal communication scale. The pretest was administered before the group guidance program to establish participants' initial interpersonal communication scores. Following completion of the eight assertive training sessions, the same instrument was administered as a posttest. The collected data consisted of overall interpersonal communication scores, categorical

classifications, and percentage scores for each of the five measured dimensions. Individual pretest and posttest measurements formed the basis for evaluating changes following participation in the intervention.

### Data Analysis

Data were analyzed using descriptive statistics, the Wilcoxon signed-rank test, and normalized gain (N-Gain) analysis. Descriptive analysis was conducted to examine the distribution of students across interpersonal communication categories and changes in the five measured dimensions. The Wilcoxon signed-rank test was used to evaluate differences between paired pretest and posttest scores. The original analysis reported a significance value of $p = .005$. The normalized gain analysis was used to describe the improvement relative to the maximum attainable score, with a reported mean N-Gain of 0.40, classified as moderate. Because the study involved only ten paired observations, exact statistical inference would be preferable where supported by the data and analysis software. The individual paired scores and detailed calculation outputs were not available in the supplied manuscript. Consequently, the reported significance value and average normalized gain should be regarded as provisional until verified against the original dataset.

### Ethical Considerations

The study involved vocational high school students participating in group-based communication activities. Appropriate ethical safeguards include voluntary participation, confidentiality of participant responses, permission from relevant school authorities, and parental or guardian consent and student assent where required. The provided research documentation does not specify the ethical approval procedures or consent arrangements that were implemented. Therefore, the authors should confirm and accurately report the applicable ethical safeguards before submitting the manuscript for publication.

## RESULTS

### Changes in Interpersonal Communication Categories

The results indicated changes in the distribution of students' interpersonal communication levels following eight group guidance sessions incorporating assertive training. Before the intervention, six of the ten participants (60%) were classified in the low interpersonal communication category, while four participants (40%) were in the moderate category. No participant was classified in the high category. Following the intervention, none of the participants remained in the low category. Four students (40%) were classified as having moderate interpersonal communication, while six students (60%) were classified in the high category. These findings indicate a positive shift in the overall distribution of interpersonal communication scores following participation in the program.

**Table 1. Distribution of Students' Interpersonal Communication Levels Before and After the Intervention**

| Category | Score range | Pretest, n (%) | Posttest, n (%) |
|---|---|---|---|
| Low | 24–56 | 6 (60%) | 0 (0%) |
| Moderate | 57–88 | 4 (40%) | 4 (40%) |
| High | 89–120 | 0 (0%) | 6 (60%) |
| Total | — | 10 (100%) | 10 (100%) |

**Note. Data were obtained from the original research records (2026).**

As shown in Table 1, the absence of participants in the low category after the intervention suggests an improvement in the distribution of interpersonal communication levels within the study group. The increase in the number of students classified in the high category further indicates higher overall communication scores at the second measurement. However, the category distributions alone do not establish how individual participants moved between categories. Individual paired scores would be required to describe the precise transitions. Furthermore, the observed improvement cannot be attributed exclusively to assertive training because the study did not include a comparison group.

**Changes in the Five Dimensions of Interpersonal Communication**

The five dimensions of interpersonal communication were analyzed separately to describe changes in openness, empathy, supportiveness, positiveness, and equality. The results showed higher posttest percentages across all five dimensions.

**Table 2. Changes in the Five Dimensions of Interpersonal Communication**

| Dimension | Pretest (%) | Posttest (%) | Change (percentage points) |
|---|---|---|---|
| Openness | 47.50 | 70.00 | +22.50 |
| Empathy | 53.00 | 75.33 | +22.33 |
| Supportiveness | 38.40 | 67.20 | +28.80 |
| Positiveness | 44.50 | 69.00 | +24.50 |
| Equality | 45.20 | 73.20 | +28.00 |

Note. Values represent dimension-specific percentages reported in the original research (2026). The calculation method and denominator require confirmation.

Table 2 demonstrates that all five dimensions showed positive differences between pretest and posttest measurements. Supportiveness recorded the largest increase, rising from 38.40% to 67.20%, representing a difference of 28.80 percentage points. Equality demonstrated the second-largest improvement, increasing from 45.20% to 73.20%, equivalent to 28.00 percentage points. Positiveness increased by 24.50 percentage points, from 44.50% to 69.00%. Meanwhile, openness increased from 47.50% to 70.00%, representing a difference of 22.50 percentage points, and empathy increased from 53.00% to 75.33%, representing a difference of 22.33 percentage points. These findings indicate that the observed changes were not identical across the five dimensions. The comparatively larger increases in supportiveness and equality may be relevant to the intervention's emphasis on providing constructive responses, maintaining interpersonal respect, and expressing opinions without disregarding others. Nevertheless, the dimension-specific results are descriptive. Without paired dimension-level scores and corresponding statistical analyses, it cannot be concluded that the differences between dimensions are statistically significant or that particular dimensions were more responsive to the intervention.

**Changes in Overall Interpersonal Communication Scores**

In addition to the categorical and dimension-specific results, the analysis indicated an increase in overall interpersonal communication scores following the intervention.

The mean pretest score was 65.00, whereas the mean posttest score was 87.40. This represented an average difference of 22.40 points.

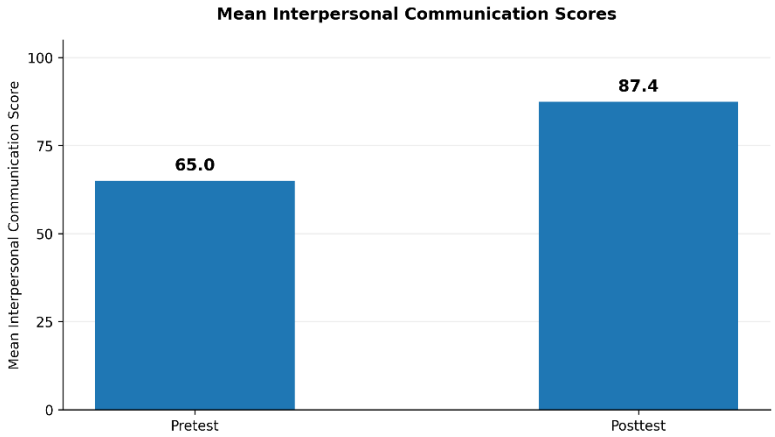



**Figure 1. Mean interpersonal communication scores before and after the intervention. Source: Researcher's data (2026).**

The reported Wilcoxon signed-rank test yielded a significance value of p = .005, while the mean normalized gain was 0.40, categorized as moderate. According to the original report, all ten participants obtained higher posttest than pretest scores. These findings indicate an overall positive pattern of interpersonal communication scores following the intervention. However, the limited availability of individual-level data restricts independent verification of the statistical findings.

**Wilcoxon Signed-Rank Test and Normalized Gain Analysis**

The Wilcoxon signed-rank test was employed to examine whether the differences between pretest and posttest interpersonal communication scores were statistically significant. Based on the original statistical output, the test yielded a significance value of p = .005, indicating a statistically significant difference at the .05 significance level. The normalized gain analysis produced a reported mean value of 0.40, indicating moderate improvement according to the classification adopted in the original study. The findings are summarized in Table 3.

**Table 3. Summary of Overall Interpersonal Communication Outcomes**

| Statistical indicator | Result |
|---|---|
| Number of participants | 10 |
| Mean pretest score | 65.00 |
| Mean posttest score | 87.40 |
| Mean score difference | 22.40 |
| Reported Wilcoxon significance | .005 |
| Reported mean N-Gain | 0.40 |
| N-Gain classification | Moderate |
| Participants showing score increases | 10 |

**Note. Wilcoxon significance and mean N-Gain are reproduced from the original study report and require confirmation using the participant-level dataset.**

The findings demonstrate a statistically significant increase in reported interpersonal communication scores after participation in group guidance incorporating assertive training. Nevertheless, statistical significance should be distinguished from causal effectiveness. As the

research employed a one-group pretest–posttest design, the observed differences may also reflect testing effects, maturation, or experiences outside the intervention.

## Discussion

### Changes in Interpersonal Communication Following Assertive Training

The present study examined changes in interpersonal communication among vocational high school students following eight sessions of group guidance incorporating assertive training. The findings revealed a positive shift in students' interpersonal communication scores, with the mean increasing from 65.00 at pretest to 87.40 at posttest. The categorical distribution also changed, as the proportion of students classified as having low interpersonal communication decreased from 60% to 0%, while 60% of participants reached the high category after the intervention. These findings suggest that the intervention period was associated with improvements in students' self-reported interpersonal communication. From a theoretical perspective, the observed changes are consistent with the behavioral principles underlying assertiveness training, which emphasizes the development of direct, respectful, and adaptive interpersonal responses through structured practice (Speed et al., 2018). Previous investigations have also identified positive outcomes associated with assertive training in educational contexts (Akbar et al., 2020; Fadhila et al., 2024; Nuha et al., 2024). Nevertheless, because the present study employed a one-group pretest–posttest design, the observed differences cannot be interpreted as definitive evidence that assertive training independently caused the improvement.

The findings are also relevant to the broader literature on social and emotional competence development during adolescence. Interpersonal communication involves more than the ability to speak fluently; it requires individuals to express personal perspectives, interpret others' responses, regulate emotional expression, and maintain constructive relationships. DeVito (2016) emphasizes the relational nature of interpersonal communication, while Durlak et al. (2011) demonstrated that structured school-based social and emotional learning programs can improve social and emotional competencies and behavioral outcomes. Similarly, de Mooij et al. (2020) examined social skills training programs for children and adolescents and highlighted the importance of evaluating program components when interpreting intervention outcomes. In the present study, the combination of instruction, behavioral modeling, role-playing, repeated practice, and feedback may have provided opportunities for students to develop greater familiarity with constructive communication strategies. However, because these components were delivered together, their individual contributions to the observed changes cannot be determined.

### Improvement in Openness

Openness increased from 47.50% before the intervention to 70.00% afterward, representing an improvement of 22.50 percentage points. This finding suggests that participants reported greater willingness to communicate personal opinions, thoughts, and feelings following group guidance. Within DeVito's (2016) interpersonal communication framework, openness is associated with appropriate self-disclosure, receptiveness to communication, and willingness to engage in meaningful interpersonal exchanges. Students who experience difficulties expressing their thoughts may withdraw from conversations, avoid disagreements, or rely on passive communication patterns. Assertiveness training addresses these difficulties

by helping individuals communicate personal positions more clearly while respecting the perspectives of others (Speed et al., 2018). In the present intervention, exercises involving expressing opinions, discussing emotional experiences, and responding to disagreement may have created opportunities for students to practice communication behaviors they had previously avoided.

This interpretation is consistent with previous empirical studies examining assertiveness training and interpersonal communication. Akbar et al. (2020) reported positive outcomes for interpersonal communication among students who participated in assertive training, while Fadhila et al. (2024) demonstrated the relevance of group guidance incorporating assertiveness exercises for students' communication development. Moreover, Omura et al. (2017), in a systematic review involving healthcare professionals and students, identified evidence supporting structured assertiveness communication training, although the educational and professional contexts differed from those of the present study. Taken together, these findings suggest that structured behavioral practice is a plausible strategy for supporting self-expression. Nevertheless, the current study did not directly observe students' communication outside the counseling setting, and the reported increase should therefore be interpreted as a change in the measured openness dimension rather than confirmed improvement in everyday communication behavior.

**Improvement in Empathy**

The empathy dimension increased from 53.00% at pretest to 75.33% at posttest, corresponding to a difference of 22.33 percentage points. This improvement is particularly relevant because assertiveness is sometimes incorrectly understood as merely expressing one's own wishes or defending personal interests. In contrast, adaptive assertive communication requires individuals to balance self-expression with sensitivity toward communication partners. DeVito (2016) conceptualizes empathy as a fundamental aspect of interpersonal communication, emphasizing the importance of understanding others' feelings and perspectives. Speed et al. (2018) similarly describe assertiveness as an interpersonal capacity that involves appropriately communicating personal needs rather than responding aggressively or disregarding others.

During the group guidance sessions, participants were encouraged to exchange perspectives, listen to other group members, and practice responding to interpersonal situations involving disagreement, emotional expression, and peer pressure. These experiences may have supported greater awareness of other people's feelings while allowing students to maintain their own opinions. This interpretation is broadly compatible with research on social and emotional learning, which identifies relationship skills and social awareness as important developmental competencies (Durlak et al., 2011). Furthermore, de Mooij et al. (2020) provide a broader evidence base for examining social skills training as a structured approach to developing interpersonal functioning. However, the present study did not assess empathy as an independent psychological construct using a dedicated validated empathy measure. Therefore, the observed increase should be interpreted specifically as improvement in the empathy dimension of the interpersonal communication instrument rather than evidence of generalized empathic development.

**Improvement in Supportiveness**

Supportiveness demonstrated the largest numerical improvement among the five dimensions, increasing from 38.40% to 67.20%, or 28.80 percentage points. This finding is noteworthy because supportive communication helps establish interpersonal conditions in which individuals feel acknowledged, respected, and able to express themselves without excessive defensiveness. Within DeVito's (2016) interpersonal communication framework, supportiveness concerns communication behaviors that encourage mutual understanding and constructive interaction. In the present study, group guidance activities provided opportunities for students to listen to others, respond to different viewpoints, and receive interpersonal feedback. Such activities may have encouraged participants to recognize the consequences of their communication responses and to consider more supportive alternatives.

The improvement in supportiveness may also be understood in relation to behavioral rehearsal and reciprocal feedback. Assertiveness training commonly incorporates modeling, practice, and feedback to help individuals develop alternative interpersonal responses (Speed et al., 2018). Omura et al. (2017) emphasized the relevance of structured assertiveness communication training across professional and educational contexts, while Fadhila et al. (2024) demonstrated the potential contribution of group guidance using assertiveness training to interpersonal communication outcomes. Similarly, de Mooij et al. (2020) highlighted the importance of examining intervention components when evaluating social skills training. Although these studies provide a rationale for interpreting the role of structured practice, the present data do not identify feedback as the specific mechanism responsible for the larger increase in supportiveness. The result should therefore be interpreted as a descriptive pattern suggesting that supportive communication warrants particular attention in subsequent intervention research.

**Improvement in Positiveness**

Positiveness increased from 44.50% before the intervention to 69.00% afterward, reflecting an improvement of 24.50 percentage points. This dimension concerns the constructive attitudes individuals communicate toward themselves and others during interpersonal exchanges. Positive interpersonal communication does not necessarily involve agreeing with others or avoiding conflict. Rather, it involves maintaining respect, responding constructively, and expressing disagreement without demeaning communication partners (DeVito, 2016). Assertive communication is particularly relevant to this dimension because it encourages individuals to express their needs and preferences without relying on passive, hostile, or excessively confrontational responses.

The activities undertaken during the intervention included stating personal opinions, communicating disagreement, managing conflict, and responding to peer pressure. These exercises may have provided opportunities for participants to distinguish between expressing a personal position and attacking another person's perspective. Speed et al. (2018) emphasized the importance of assertiveness training for improving interpersonal functioning, whereas Akbar et al. (2020) demonstrated its relevance to communication and peer conformity in adolescent educational settings. The broader findings of Durlak et al. (2011) also suggest that structured social and emotional learning experiences can improve students' social attitudes and interpersonal functioning. Nevertheless, the present study did not independently assess whether students demonstrated more positive communication during classroom interactions or peer

relationships. The findings therefore indicate increased scores on the positiveness dimension rather than directly observed changes in interpersonal attitudes.

**Improvement in Equality**

Equality recorded the second-largest increase, rising from 45.20% at pretest to 73.20% at posttest, equivalent to 28.00 percentage points. In DeVito's (2016) framework, equality emphasizes recognizing the dignity, value, and interpersonal rights of communication partners. This aspect is particularly relevant to assertive communication because individuals need to express personal needs and decisions without assuming a superior or inferior position in relation to others. Students who struggle with assertiveness may find it difficult to refuse unreasonable requests or maintain personal decisions when faced with peer pressure. Conversely, overly aggressive responses may undermine mutual respect and reinforce conflict.

The intervention addressed these communication situations through exercises involving refusal, disagreement, and responding to peer pressure. Such activities may have encouraged participants to recognize that maintaining personal boundaries does not require disregarding another person's rights. Akbar et al. (2020) demonstrated that assertive training is relevant to both interpersonal communication and peer conformity among adolescents, supporting the importance of examining students' capacity to communicate independent decisions. Speed et al. (2018) further highlighted assertiveness as an important component of adaptive interpersonal functioning. The relatively large increase in equality may therefore reflect greater recognition of mutual interpersonal rights within the situations practiced during the intervention. However, the study did not directly measure changes in peer conformity or independent decision-making, so this explanation remains theoretical rather than empirically established.

**The Role of Behavioral Rehearsal, Modeling, and Group Interaction**

The intervention consisted of eight group guidance sessions incorporating instruction, modeling, role-playing, behavioral rehearsal, and feedback. These activities provided repeated opportunities for participants to practice communication responses in situations similar to those encountered in everyday school interactions. Behavioral rehearsal is relevant because communication competence involves not only understanding appropriate responses but also developing the ability to perform them in interpersonal situations. Speed et al. (2018) identified assertiveness training as a behavioral intervention with applications across different interpersonal difficulties. Likewise, Omura et al. (2017) reviewed structured assertiveness communication training programs and identified evidence of benefits for communication-related outcomes in healthcare training contexts. Although these findings originate from different populations, they help explain why active communication practice may be relevant to the present intervention.

The group format may have provided additional opportunities for interpersonal learning by exposing participants to different communication styles and responses. Students were able to practice expressing opinions, observe how other members responded, and consider alternative ways of communicating. Such processes are consistent with the broader literature on structured social skills training and social and emotional learning (de Mooij et al., 2020; Durlak et al., 2011). In Indonesian school counseling research, Fadhila et al. (2024) demonstrated the relevance of group guidance combined with assertiveness training, while Nuha et al. (2024) identified assertive training as a relevant behavioral approach for

interpersonal communication development. Nevertheless, because the present intervention combined multiple techniques, the study cannot determine whether modeling, role-playing, feedback, or group interaction made the greatest contribution to the observed changes.

**Comparison With Previous Research**

The findings of this study show similarities with previous research investigating assertive training in educational settings. Akbar et al. (2020) reported that assertive training improved interpersonal communication and reduced peer conformity among junior high school students. Fadhila et al. (2024) also reported positive outcomes from group guidance incorporating assertiveness training, using a nonequivalent control group design. These studies provide empirical support for considering assertiveness training as a relevant approach to interpersonal communication difficulties among students. Furthermore, Nuha et al. (2024) synthesized research concerning behavioral assertiveness approaches and interpersonal communication, reinforcing the relevance of this intervention focus within counseling research.

The present study differs from these investigations by examining interpersonal communication among students at SMK Farmatikom Pekanbaru and describing changes across five communication dimensions. The findings indicated that supportiveness and equality had the largest descriptive increases, followed by positiveness, openness, and empathy. However, previous investigations employed different research designs, participants, and measurement instruments. Therefore, the numerical results should not be interpreted as directly comparable estimates of intervention effectiveness. More broadly, the reviews conducted by Speed et al. (2018), Omura et al. (2017), and de Mooij et al. (2020) suggest that structured communication and social skills interventions warrant empirical examination, while emphasizing the importance of research design and intervention characteristics when interpreting outcomes.

**Interpretation of Statistical Findings**

The overall mean interpersonal communication score increased from 65.00 to 87.40, representing a difference of 22.40 points. The original analysis reported a Wilcoxon signed-rank significance value of $p = .005$ and a mean normalized gain (N-Gain) of 0.40, categorized as moderate. These results suggest positive changes in communication scores following participation in group guidance incorporating assertive training. The improvement is compatible with previous empirical findings in educational settings (Kefalis et al., 2025). However, statistical significance should not be interpreted as evidence that the observed changes were exclusively caused by the intervention.

An important statistical consideration concerns the reported Wilcoxon probability. The original manuscript stated that all ten participants obtained higher posttest than pretest scores. If all ten paired differences were positive and nonzero, the exact two-sided probability for the most extreme signed-rank configuration would be approximately .00195. This value differs from the reported significance value of .005, which may reflect a different testing convention or calculation procedure. Consequently, the original statistical output and participant-level paired scores should be examined before the final manuscript is submitted. The normalized gain also requires clarification regarding whether it was calculated from group means or averaged across individual participants. These checks are necessary to ensure accurate reporting and reproducibility of the quantitative findings.

**Limitations and Directions for Future Research**

Several limitations should be acknowledged. First, the study involved ten participants selected through purposive sampling, limiting the representativeness of the sample and the generalizability of the findings to broader vocational student populations. Second, the one-group pretest–posttest design did not include random assignment or a comparison group. Consequently, alternative explanations such as maturation, testing effects, participants' expectations, or experiences outside the intervention could not be ruled out. Third, interpersonal communication was assessed using a self-report scale, and the manuscript does not provide complete information regarding item-level validity, reliability, dimensional structure, or the construction of classification thresholds. Although scores increased across all five dimensions, the lack of detailed psychometric information limits confidence in interpreting the distinctiveness and magnitude of these changes. Fourth, the available results do not provide statistical tests for individual communication dimensions. Therefore, the larger descriptive increases in supportiveness and equality cannot be interpreted as evidence that these dimensions were statistically more responsive to the intervention than openness, empathy, or positiveness.

Fifth, the study did not include follow-up assessments or direct observations of students' communication behavior in real-life settings. As a result, the durability of the observed improvements and their transfer beyond the group guidance sessions remain unknown. Research on social skills training and social and emotional learning highlights the value of evaluating outcomes systematically across programs and contexts (Ha et al., 2026; Maity et al., 2025). Future studies should therefore employ larger samples, experimental or quasi-experimental comparison designs, validated multidimensional instruments, behavioral assessments, and follow-up measurements.

**Implications for School Guidance and Counseling Practice**

The findings provide preliminary implications for the development of group guidance services in vocational high schools. School counselors may consider incorporating structured assertiveness exercises into programs addressing difficulties in expressing opinions, communicating emotions, refusing requests, managing disagreements, and responding to peer pressure. Such activities can provide opportunities for students to practice balancing personal expression with respect for others. From a program development perspective, the five dimensions of interpersonal communication may also inform the selection of counseling objectives. For instance, students experiencing difficulty expressing their opinions may benefit from activities emphasizing openness, while those struggling to maintain constructive interpersonal responses may require additional exercises addressing supportiveness and equality. This approach is conceptually consistent with DeVito's (2016) interpersonal communication framework and with research examining structured assertive communication training (Al-hawaiti et al., 2025; Yoshinaga & Cooper, 2025). Nevertheless, these implications should be understood as recommendations for further development and evaluation rather than definitive evidence of intervention effectiveness. Future school counseling programs should incorporate systematic process evaluation, validated outcome measures, and procedures for assessing whether communication skills practiced in group sessions are demonstrated in authentic classroom and peer interactions.

## Conclusion

This study identified positive changes in interpersonal communication scores among ten Grade XI students at SMK Farmatikom Pekanbaru following eight sessions of group guidance incorporating assertive training. The mean score increased from 65.00 at pretest to 87.40 at posttest, with a reported Wilcoxon significance value of $p = .005$ and a normalized gain of 0.40, categorized as moderate. Improvements were observed across all five dimensions of interpersonal communication: openness, empathy, supportiveness, positiveness, and equality. Supportiveness demonstrated the largest descriptive increase (28.80 percentage points), followed by equality (28.00 percentage points). These findings provide preliminary support for further investigating assertive training within group guidance services as an approach to developing students' interpersonal communication. However, the small sample, absence of a comparison group, reliance on self-report measurements, and limited psychometric information prevent definitive conclusions regarding causal effectiveness. Future studies should employ more rigorous research designs, larger samples, validated instruments, behavioral assessments, and follow-up measurements to examine the effectiveness and sustainability of interpersonal communication development.

## CRediT Authorship Contribution Statement

Triona Salsabilah, Tri Umari, and Siska Mardes contributed to the conceptualization, methodology, investigation, data analysis, manuscript development, and critical revision of the study. All authors reviewed and approved the final manuscript and agreed to be accountable for its content.

## Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to applicable ethical and confidentiality requirements. Public access is restricted to protect the privacy of student participants.

## Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this manuscript, the authors used AI-assisted tools to support manuscript organization, language refinement, grammatical correction, and improvement of academic readability. The authors reviewed and revised the resulting content and take full responsibility for the accuracy, originality, interpretation, and integrity of the final manuscript.

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## Declaration of Competing Interests

The authors declare that they have no known financial or non-financial competing interests that could have influenced the research, interpretation of findings, or preparation of this manuscript.

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