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COMMUNICATION, COLLABORATION, AND ACADEMIC PERFORMANCE: A CORRELATIONAL STUDY OF LEARNERS WITH HEARING IMPAIRMENT

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ABSTRACT

Poor academic performance among learners with hearing impairment is a global problem. This study aims to determine the significance of communication and collaboration as predictors of academic performance of learners with hearing impairments. Using descriptive correlational design, including 131 respondents selected purposive sampling, the regression analysis of surveyed data revealed that the predictive variables have a significant combined degree of influence (7.8%) on the criterion variable; likewise, each has a significant influence as a predictor. This conclusion affirms the Social Constructivism theory. Further research may be pursued using other variables not covered in this study to trace the 92.2% variance in academic performance.

KEYWORDS: *Communication; Collaboration; Academic Performance; Learners With Hearing Impairments.*

INTRODUCTION

The poor academic performance of learners with hearing impairment is a pressing global issue. Studies indicate that these students consistently lag behind their hearing peers across various educational metrics, highlighting a significant gap in educational equity (Elbeltagy, 2020). In specific national contexts, such as Ghana, factors contributing to this underperformance include inadequate resources, lack of specialized training for educators, and insufficient policy support (Komashie, 2021). Similarly, in Zambia, challenges like language barriers and untrained teachers further exacerbate the educational disparities faced by hearing-impaired learners (Kaindu et al., 2021).

In the Philippines, hearing-impaired students encounter social interaction challenges that negatively impact their academic performance. Limited communication with hearing peers and minimal family support contribute to their school struggles (Tenerife et al., 2021). The consequences of poor academic performance among learners with hearing impairment are profound, leading to limited career opportunities and social integration difficulties. Addressing these educational challenges is crucial to ensure that hearing-impaired individuals achieve their full potential and actively participate in society (Khomera et al., 2020).

Statement of the Problem

The main objective of this study was to determine the significance of communication and collaboration as predictors of the academic performance of learners with hearing impairments.

1. To determine the levels of communication among learners with hearing impairments in terms of Frequency and clarity of verbal communication, Frequency, and clarity of signed communication, Active listening skills, Use of communication tools, and Collaboration among learners with hearing impairment in terms of Shared decision-making, Task completion and shared responsibilities, Providing and receiving help; and academic performance of learners with hearing impairments using Grade Point Average (GPA);
2. To determine the significance of the correlation between communication and collaboration and the academic performance of learners with hearing impairments.
3. To determine the significance of the individual and combined degree of influence of communication and collaboration on academic performance.

Hypotheses

H_{o1}: Communication, collaboration, and academic performance are not significantly correlated with the academic performance of learners with hearing impairments.

H_{o2}: Communication and collaboration, both individually and combined, do not have a significant influence on academic performance.

Theoretical and Conceptual Framework of the Study

This study is anchored on the theory of social constructivism (Lev Vygotsky, 1970-1980). It posits that the "constructivist stance maintains that learning is a process of constructing meaning; it is how people make sense of their experience" (Merriam & Caffarella, 1999, p. 260; as cited by Amineh & Asl, 2015).

In this study, the communication variable indicated by Frequency and Clarity of Verbal Communication, Frequency and Clarity of Signed Communication, Active Listening Skills, and Use of Communication Tools (Figure 1) stands for the idea of experience spoken in the theory. The collaboration variable indicated by Shared Decision Making, Task Completion and Shared Responsibilities, and Providing and Receiving Help (Figure 1) stands for the experience shared in the theory. Finally, the Academic Performance of Learners with Hearing Impairment indicated by Grade Point Average stands for learning as the main idea presented in the theory (figure 1).

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Conceptual Framework

Predictive Variables

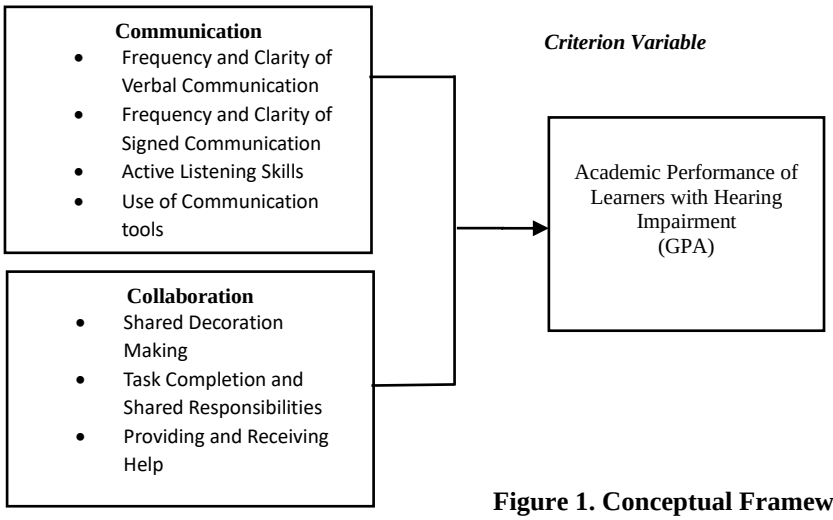

Figure 1. Conceptual Framework of the study

By applying social constructivism theory, this research investigated how creating a more interactive and collaborative learning environment could improve communication, collaboration skills, and academic achievement for learners with hearing impairments. The learners' academic performance used in the study was the GPA obtained for the school year. These variables aimed to determine whether communication and collaboration significantly influenced the academic performance of learners with hearing impairments in Region XII. The findings regarding the independent and dependent variables served as the basis for conceptualizing institutional assessment as an intervention to prepare hearing-impaired learners for higher education or the workforce, contributing to the realization of DepEd's mission and vision for quality education.

MATERIALS AND METHODS

A descriptive-correlational research design was utilized in this study because it was considered appropriate for investigating relationships between variables when no manipulation was required. Descriptive-correlational research sought to determine and describe how variables were related. Indeed, in most research, surveys and observational methods were used to collect the required data. The respondents were teachers managing pupils with hearing disabilities in Region XII or SOCCSKSARGEN in South Central Mindanao. The region's name is an acronym for its 4 provinces — South Cotabato, Cotabato, Sultan Kudarat, and Sarangani— and 1 highly urbanized city, General Santos City, Philippines. The main tool used for this study is a researcher-drafted survey questionnaire created to collect data regarding the academic performance (Grade Point Average) of the learner-respondents. Development of a rating scale to evaluate the assistance of assistive technology in the academic performance of deaf/hard-of-hearing (DHH) learners in classroom communication.

The other independent variable, Collaboration, explored its role in the academic performance of deaf learners in the classroom and their daily lives as individuals with hearing impairments. The collaboration indicators included Shared Decision-Making, Task Completion, Shared Responsibility, and Providing and Receiving Help. Similarly, respondents used the same Likert scale to evaluate these indicators. The dependent variable, the Academic Performance of Learners with Hearing Impairment, was measured through their General Percentile Average (GPA). Respondents provided their GPA directly in the space provided, showing how communication and collaboration contributed to their education and daily lives as individuals with hearing impairments. In order to increase reliability, the tool was piloted, and 30 individuals not involved in the study trailed the instrument. The results showed a very high reliability of the instrument, noting a Cronbach's Alpha coefficient of 0.964, which indicates a high internal consistency. Responses to the items in the questionnaire were highly reliable, as shown by this test, demonstrating its successful and consistent usage as a data collection tool. The survey questionnaire's reliability test shows that the internal consistency of the measured variables is excellent. The communication of learners with hearing impairment variable has 20 items with a Cronbach's Alpha of 0.922 (standardized items) and 0.921 (raw scores), both being interpreted as good. The Collaboration of Learners with Hearing Impairment variable, with 15 items, also shows an excellent classification for Cronbach's Alpha, 0.977 (standardized) and 0.976 (raw). The Cronbach's Alpha for the overall variable, which includes all 35 items, is 0.964, indicating excellent internal consistency across the full questionnaire. This indicates the reliability of the items within the survey and suggests that they are consistent. Data were analyzed using the subsequent statistical tools. From the data, the researcher performed a statistical analysis of the data; mean, frequency, and Pearson-r were calculated to determine their conclusions and insight.

This study maintained strict adherence to ethical considerations based on the guidelines of the Philippine Health Research Ethics Board (PHREB, 2017) to ensure the respondents' fairness, respect and justice. For females (hearing impaired, the events in Region XII, and their kids), there is an emphasis on ethical principles that mention social value, informed consent, and privacy aimed at protecting the rights

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of participants. The researcher pledged to treat respondents with dignity and respect, to be open and to communicate, to give respondents a digital copy of the final version of the study, and to ensure that resources were adequate and that experts collaborated in balancing the survey instruments and biases did not affect the study, and that community members were involved in enhancing the integrity of the study and its impact on society.

RESULTS AND DISCUSSION

Table 1 is the descriptive table. It contains the variables involved in the study, namely, communication and collaboration. Communication Variable is indicated by clarity of verbal communication, clarity of signed communication, active listening skills, and use of communication tools. Collaboration Variable is indicated by shared decision-making, task completion, shared responsibilities, and the provision and receipt of help. The last one is the General Point Average. Likewise, the table contains the total sample involved, the Standard Deviation, the Mean, and the corresponding Description.

Table 1. Descriptive Table

Variable	N	Mean	Descriptive Level
Self-Assessment	**131**	**0.642**	**Very High**
Clarity of Verbal Communication		0.642	Very High
Clarity of Signed Communication		0.713	Very High
Active Listening		0.850	Very High
Used of Communication		0.963	Very High
Collaboration	**131**	**0.690**	**Very High**
Shared Decision Making		0.785	Very High
Task Completion and Shared Responsibilities		0.800	Very High
Providing and Receiving Help		0.963	Very High
GPA	**131**	**2.225**	**Satisfactory**

The statistical analysis examines the relationship between GPA and two independent variables: communication and collaboration. The Pearson correlation coefficient (**r**) and **p-value** were used to assess the strength and significance of these relationships. The results indicate that communication skills have a very weak positive correlation with GPA (**r = 0.012**), and the **p-value = 0.446** is greater than the **0.05** significance level. This means we accept the null hypothesis (H_o) and conclude that communication skills do not have a significant relationship with GPA. In contrast, collaboration skills show a weak positive correlation with GPA (**r = 0.200**), but the **p-value = 0.011** is less than **0.05**, leading us to reject the null hypothesis. This suggests that collaboration skills have a statistically significant relationship with GPA, meaning students who demonstrate stronger collaboration skills tend to have slightly higher academic performance. While communication skills do not significantly impact GPA, collaboration skills show a weak but meaningful correlation with academic success. However, given the weak correlation, other factors may influence students' GPA more strongly.

Correlation Analysis

Table 2 is the correlation table. It contains the variables involved in communication and collaboration as predictive variables and the GPA as the criterion variable.

Table 2: Correlation table

	GPA			
Variables	**r**	**p-value**	**Decision on Ho @ 0.05 level of significance**	**Interpretation**
Communication	**0.012**	**0.446**	**Accept Ho**	**Not Significant**
Collaboration	**0.200**	**0.011**	**Reject Ho**	**Significant**

The analysis of the relationship between GPA and the variables of Communication and Collaboration reveals distinct findings. The correlation between Communication and GPA is extremely weak (r = 0.012), with a p-value of 0.446, much higher than the 0.05 significance level. This indicates no statistically significant relationship between communication and GPA, leading to the acceptance of the null hypothesis. On the other hand, Collaboration shows a weak but positive correlation with GPA (r = 0.200), and the p-value of 0.011 is below the 0.05 threshold. This suggests a statistically significant relationship, prompting rejecting the null hypothesis. These results imply that while Communication does not have a notable impact on academic performance, Collaboration plays a small yet meaningful role in influencing GPA. Encouraging student collaborative efforts may improve academic outcomes, even if the effect size is relatively modest.

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Table 3: Regression Table

	GPA						
	Unstandardized Coefficients		Standardized Coefficients				
Independent Variables	**B**	**Std. Error**	**Beta**	**t**	**Sig.**	**Decision on Ho**	**interpretation**
1. (Constant)	**82.340**	**1.151**		**71.522**	**.000**		
Communication	**-.989**	**.429**	**-.285**	**-2.303**	**.023**	**Reject Ho**	**Significant**
Collaboration	**1.314**	**.399**	**.408**	**3.291**	**.001**	**Reject Ho**	**Significant**

R = 0.280 R-Square=0.078 Adjusted R-Square=0.064

The multiple regression analysis examines the individual and combined influence of Communication and Collaboration on GPA. The results indicate these variables have statistically significant but contrasting effects on academic performance. Individually, Communication has a significant negative impact on GPA. The unstandardized coefficient (B = -0.989) suggests that for every one-unit increase in Communication, GPA decreases by 0.989 points, assuming other factors remain constant. The standardized coefficient (Beta = -0.285) indicates a moderate negative relationship, further supported by a t-value of -2.303 and a p-value of 0.023, below the 0.05 significance level. These findings confirm that higher levels of communication correlate with lower GPA scores, leading to the rejection of the null hypothesis.

In contrast, Collaboration has a significant positive effect on GPA. The unstandardized coefficient (B = 1.314) reveals that for each one-unit increase in Collaboration, GPA is expected to rise by 1.314 points. The standardized coefficient (Beta = 0.408) indicates a moderate positive relationship, while the t-value (3.291) and p-value (0.001) confirm its statistical significance. Given these results, the null hypothesis is rejected, affirming that Collaboration influences GPA. When analyzing their combined effect, the model explains only a small portion of GPA variability. The R-value of 0.280 suggests a weak overall correlation between the independent variables and GPA. At the same time, the R-Square value (0.078) indicates that Communication and Collaboration together account for just 7.8% of the variance in GPA. The Adjusted R-Square (0.064) further refines this estimate, suggesting that while these two factors play a role, other variables strongly influence GPA.

Communication and Academic Performance

The study found that communication skills exhibited a very weak positive correlation with GPA (r = 0.012) and were not statistically significant (p = 0.446). However, regression analysis revealed an unexpected negative effect, where an increase in communication was associated with a decrease in GPA (B = -0.989, p = 0.023). This suggests that while communication is regarded as an essential academic skill, its direct influence on academic success may be limited or even detrimental under certain conditions. As a possible explanation, those high communicators spend less time on solitary academic study and more time with others (Tang et al., 2022); thus, their study efficiency may be negatively related to communication focus.

Previous studies show that communication skills are crucial in educational settings, e.g., in increasing student participation and understanding (Kim & Kim, 2021). Of course, other studies warn that excessive communication without a sound grammar study may drag attention away from individual learning and cognitive processing (Zhao et al., 2023). These results reflect the idea that earlier literature supports, that being able to communicate does not automatically mean academic success unless it is paired with proper study habits and the ability to apply critical thought.

Collaboration and Academic Performance

On the other hand, collaboration showed a weak but statistically significant positive correlation with GPA (r = 0.200, p = 0.011), unlike communication. A regression analysis further confirmed this finding, with collaboration positively predicting GPA (B = 1.314, p = 0.001). Such a finding aligns with prior research establishing that collaborative learning promotes critical thinking, problem-solving, and deeper engagement with academic content (Johnson et al., 2021).

One explanation of this effect may be that they stimulate peer-assisted learning, accountability, and knowledge sharing, leading to improved academic outcomes. Activities with others, like group discussions, peer mentoring, and cooperative projects, have improved retention and understanding of complex subjects (Smith et al., 2022). In addition, collaboration helps foster a sense of accountability among the students, resulting in higher motivation and task allocation management (Brown et al., 2023).

Comparison Between Communication and Collaboration

One of the study's main findings is that even if communication and collaboration largely manifest in the same behaviors, their effect on GPA differs in magnitude and direction. The correlation and regression analyses suggest that GPA is predicted more by collaboration than by communication.

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Collaboration specifically explained 40.8% of the variance in the GPA, while communication explained 28.5%. Moreover, jointly, the two variables only predicted 7.8%, speaking to the fact that other factors greatly contribute to student academic performance.

These findings aligned with previous literature supporting the need for collaboration within educational settings (Johnson & Johnson, 2021). Collaborative learning, in which students work together to solve problems, has been shown to enhance performance and help students learn from each other (Vygotsky, 2021). In contrast, the unexpected negative correlation between communication and GPA requires further examination as it contradicts the assumption that strong communicative skills are always associated with academic success (Lee & Park, 2022).

The study's results have significant implications for educational institutions. Scripts: Since collaboration positively affects GPA, we should use more collaborative learning strategies as educators in our teaching practices. Encourage group activities, peer discussions, and cooperative assignments (Nguyen et al, 2021)

Also, while communication foot skills are important, there must be an appropriate balance between being able to communicate effectively and being able to focus on academic work. It is advised that students be taught how to incorporate their oral communication skills into structured learning frameworks (Martinez et al, 2023), such as active listening (Woods et al., 2021), the ability to hold critical discussions (Cohen et al., 2022), and ability to make written reflections (Teodoro et al., 2023).

Conclusion

Based on the study's findings, it is concluded that both the communication and collaboration variables significantly predict the academic performance of learners with hearing impairment. This conclusion affirms the Social Constructivism Theory, stating that learning is a process of constructing meaning; it is how people make sense of their experience.

Recommendation

Based on the conclusion, it is recommended that further research be undertaken using other variables not covered in this study in order to trace the remaining 92.2% of the variance in academic performance. It is further recommended that educational institutions initiate activities that may improve the communication and collaboration of learners with hearing impairment to enhance their academic performance.

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