Perceived Effectiveness of Virtual Classrooms in Enhancing Communication Skills of Grade 12 Students

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Abstract: **This study aimed to determine the significant difference in the perceived effectiveness of virtual classrooms in enhancing the communication skills of Grade 12 students when categorized according to their demographic profile. Total population sampling was used, and it included forty-seven students. Through non-experimental quantitative descriptive-comparative technique, validated questionnaire, frequency and percentage, Mean, and t-test for independent samples showed that the majority of the respondents were female and belonged to 18 years old and above. It was also found that the perceived effectiveness of virtual classrooms in enhancing communication skills was described as moderate or sometimes manifested. Results revealed no significant difference in the effectiveness of virtual classrooms in enhancing communication skills when categorized according to gender and age. These results suggest that the perceived impact of virtual classrooms on communication skills is relatively uniform among the student population studied. It was recommended that teachers should strive to balance virtual and face-to-face interaction. When facing challenges, students should not hesitate to seek assistance from teachers or peers. Examining the influence of various contextual factors, such as subject matter and teaching methods, is essential for providing a comprehensive view.**

Keywords: **perceived effectiveness, virtual classrooms, communication skills, Grade 12 students.**

I. INTRODUCTION

Being able to communicate well is extremely important when interacting with other people. Improving your English communication skills can result in more chances personally and professionally. Effective communication in the classroom can benefit the learning process. Oral (conversation, negotiation, and discussion) and non-verbal (writing, facial expressions, and body language) communication abilities were both important (Alshumaimeri, 2019).

However, communication skills involve more than simply knowing grammar and vocabulary in theory. It also means having the ability to effectively express oneself and convey messages so you can express yourself clearly and appropriately (Al-Mahrooqi, 2012). In the international study of Appel and Borges (2012), several things, like how teachers teach, what is taught, limited time, and how many students are in a class, all impact how well you develop communication skills in school. Because of this, students need more chances to practice improving their communication skills. Using the internet to learn languages can help students improve their speaking and communication. In a virtual classroom, effective communication is crucial to learning. As stated by Zhang and Nunan (2017), concise and clear communication can aid students in understanding the subject covered in class, asking questions, and participating in discussions. Additionally, clear communication can help the students better understand the course material, which enhances knowledge retention and application.

This study wanted to find out if virtual classrooms can help people communicate better. Virtual classrooms are synchronous classrooms that allow real-time interaction between teachers and students. Students may learn new skills by taking online English classes. However, strong communication skills are crucial due to the need for face-to-face interaction. This research investigated whether virtual classrooms can make people better at communicating to understand how virtual classrooms might help improve communication skills. The study of English communication skills defines how students talk to their teachers and classmates in virtual classrooms. Thus, this study aimed to determine the significant difference in the perceived effectiveness of virtual classrooms in enhancing the communication skills of Grade 12 students. It attempted to address the following objectives: (1) to determine the demographic profile in terms of gender and age, (2) to determine the level of perceived effectiveness of virtual classrooms in enhancing communication skills, (3) to determine the significant difference in the perceived effectiveness of virtual classrooms in terms of gender and age.

II. METHOD

The researchers used descriptive-comparative as a research design for this study. The researchers used it because it is the appropriate design for the study. The researchers consider two variables in this study: the demographic profile as the independent variable and the perceived effectiveness of virtual classrooms as the dependent variable. A descriptive-comparative research design aims to observe and describe the variations between different groups in a population without intentionally changing any factors (Cantrell, 2011, cited in Camino et al., 2023; Maranga et al., 2023). In this study, the researchers examined the students' background information to see if there were any notable distinctions that could be considered statistically significant in the effectiveness of virtual classrooms in enhancing communication skills when grouped according to their demographic profile.

The respondents of this study were the forty-seven (47) Grade 12 students of the Humanities and Social Sciences (HUMSS) and Accountancy, Business and Management (ABM) strands. Moreover, the researchers employed total population sampling to select the study's respondents. Total population sampling involves examining the entire population that has a particular set of characteristics (Camino et al., 2023; Canonizado, 2021). This technique allows for generalizations from the data gathered and can eliminate any potential bias through sampling (Canonizado, 2021).

The source of data for this study was taken through questionnaires. The research questionnaire was adapted by the researchers from the study of Alshumaimeri and Alhumud (2021) entitled "EFL Students' Perceptions of the Effectiveness of Virtual Classrooms in Enhancing Communication Skills." The researchers used these research questions to obtain the desired data on virtual classrooms' perceived effectiveness in enhancing the students' communication skills. The researchers utilized a five-point Likert-type scale from Very Low (1) to Very High (5). The instrument was validated by a panel of experts.

The researcher sought approval from the Dean of the College, and after the approval, the letter was sent to the School Principal before the administration of the research instruments. Consent was also sought from the respondents for voluntary participation. Respondents were given ample time to complete the tool. The instrument was retrieved immediately after the respondents had answered the tool entirely. After gathering the necessary data, these were tabulated, subjected to statistical treatment, and interpreted accordingly.

All questionnaire responses were collected, examined, and interpreted in light of the research's objective. Following the necessary statistical analysis, the acquired data was then examined**.** The statistical tools used in this study are: (1) Frequency and percentage were used to determine the data distribution utilizing their demographic profile. (2) T-test for Independent Samples was used to determine the significant difference in the perceived effectiveness of virtual classrooms in enhancing communication skills when categorized according to gender and age.

III. RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Table 1 shows the distribution of respondents by gender and age. Based on the data, most respondents are female (N=32 or 68.1%) than male (f=15 or 31.9%). Conversely, most respondents are 18 years old and above (f=30 or 63.8%), and a few are 16-17 years old (f=17 or 36.2%). The total number of respondents is 47.

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Table 1. Characteristics of 47 students included in the survey

Profile Variables	f	%
Gender		
Male	15	31.9
Female	32	68.1
Age		
16-17	17	36.2
18 and above	30	63.8

Perceived Effectiveness Level of Virtual Classroom in Enhancing Communication Skills

Displayed in Table 2 is the perceived level of virtual classrooms in enhancing communication skills. It was also shown that the statement "Virtual classrooms make me feel more comfortable participating in classroom discussions" got the highest mean score, which is described as high (M=3.70, SD=.91). This means that several students felt most comfortable participating in discussions when the classroom is virtual. This suggests that online learning environments may be particularly effective at creating conditions that encouraging student engagement in classroom discussions and idea-sharing. This result was similar to what was found in the study of Alshumaimeri and Alhumud (2021). It shows that students become more comfortable with virtual discussions over time, supporting the idea that virtual environments can foster participation as familiarity increases (McMillan et al., 2022). Additionally, student-led virtual discussions enhanced peer connectedness and engagement, contributing to a positive academic experience (Chacon et al., 2023). The result also supported the proposed extended technology acceptance model, highlighting the importance of comfort and well-being in virtual learning environments (Kemp et al., 2024).

On the other hand, the statement "The absence of face-to-face does not hinder participation in discussions" got the lowest mean, which is described as low (M=1.96, SD=.96). This indicates that the students disagree with the statement. It can be deduced that the lack of face-to-face communication makes it challenging to participate in discussions. This indicates that students perceived face-to-face interactions as crucial for effective communication and engagement. Studies support this view, highlighting several challenges and limitations associated with virtual discussions. For instance, a study on student silence in virtual classrooms found that the lack of verbal participation and reluctance to turn on videos negatively impacted the flow of communication and meaningful learning (Ho et al., 2023). Additionally, a systematic review of the impacts of virtual learning revealed that the absence of face-to-face interactions could stunt the development of communication and social skills, further hindering participation (Weston & Price, 2023). Furthermore, another study comparing interactions in online versus face-to-face classes noted that the students preferred face-to-face interactions due to higher levels of motivation and engagement, often lacking in virtual settings (Gao & Shi, 2023).

Table 2. Perceived Effectiveness Level of Virtual Classroom in Enhancing Communication Skills

Statements	SD	Mean	Descriptive Level
1. Virtual classrooms make me feel more comfortable participating in classroom discussions.	.91	3.70	High
2. Virtual classrooms make me feel more motivated to participate in discussions.	1.08	3.45	High
3. Virtual classrooms play a significant role in improving my oral communication skills.	1.04	3.40	High
4. The absence of face-to-face does not hinder participation in discussions.	.93	1.96	Low
5. I think virtual classrooms can help me overcome my communication skills issues.	1.04	3.30	Moderate
6. In virtual lessons, it is easier to interact with my instructors and peers.	1.01	3.26	Moderate
7. I feel more confident when I speak in virtual classrooms.	1.12	3.40	High
8. Commenting on what my instructors and peers say is more comfortable in virtual classes than in the classroom.	.84	3.34	Moderate

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9. Virtual is better than traditional classroom in improving my communication skills.	1.21	3.19	Moderate
10. I prefer attending virtual rather than traditional classes.	1.02	2.09	Low
11. In virtual classrooms, there are more opportunities for me to speak than in traditional classrooms.	1.10	3.04	Moderate
12. Using virtual classrooms helps me discover my communication problems.	1.16	3.23	Moderate
Overall	.55	3.11	Moderate

The overall perceived effectiveness level of virtual classrooms in enhancing communication skills was described as moderate. The result suggests that while virtual classrooms may offer certain benefits for communication, there are also notable limitations. For instance, EFL students in Saudi Arabia reported positive attitudes towards virtual classrooms for enhancing oral communication skills but identified significant challenges, such as a lack of confidence and anxiety when communicating online (Alshumaimeri & Alhumud, 2021). Another study highlighted the potential of virtual exchanges to boost intercultural communication skills but also pointed out the necessity for well-structured and engaging virtual environments to achieve effective communication (Colomar & Menn, 2024). Additionally, research on enhanced virtual classrooms suggested that while these settings promote real-time collaboration and interaction, they still face challenges in fostering deep communication due to varying learning styles and technological constraints (Shinde et al., 2024). Moreover, practices to increase online interaction quality show that effective communication in virtual classrooms requires proactive engagement strategies and tailored content to meet diverse student needs (Razak et al., 2022). Thus, while virtual classrooms have the potential to enhance communication skills, their effectiveness is contingent on various factors, including student engagement, technological infrastructure, and instructional design.

Significance of the Difference on the Perceived Effectiveness of Virtual Classroom when Categorized According to Gender

Table 3 presents the significance of the difference in the perceived effectiveness of virtual classrooms in enhancing communication skills when categorized according to gender. Data shows that all statements describing the perceived effectiveness of virtual classrooms in enhancing the communication skills of the students showed no significant difference when grouped according to gender. It can be seen also that the overall result displayed no significant difference, t (45) = .074, p=.941. This implies that both male and female students perceive virtual classrooms as equally but moderately enhancing their communication skills.

Table 3. Significance of the Difference on the Perceived Effectiveness of Virtual Classroom when Categorized According to Gender

Statements	Male		Female		t(45)	p-value
	M	SD	M	SD		
1. Virtual classrooms make me feel more comfortable participating in classroom discussions.	3.67	.62	3.72	1.02	.182	.857
2. Virtual classrooms make me feel more motivated to participate in discussions.	3.40	.99	3.47	3.47	.201	.841
3. Virtual classrooms play a significant role in improving my oral communication skills.	3.47	.99	3.38	1.07	.280	.781
4. The absence of face-to-face does not hinder participation in discussions.	1.67	.90	2.09	.93	1.484	.145
5. I think virtual classrooms can help me overcome my communication skills issues.	3.13	.92	3.38	1.10	.738	.464
6. In virtual lessons, it is easier to interact with my instructors and peers.	3.33	.82	3.22	1.10	.359	.721
7. I feel more confident when I speak in virtual classrooms.	3.73	1.03	3.25	1.14	1.398	.169
8. Commenting on what my instructors and peers say is more comfortable in virtual classes than in the classroom.	3.33	.62	3.34	.94	.039	.969

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9. Virtual is better than traditional classroom in improving my communication skills.	2.73	1.16	3.41	1.19	1.823	.075
10. I prefer attending virtual rather than traditional classes.	2.20	1.08	2.03	1.00	.526	.602
11. In virtual classrooms, there are more opportunities for me to speak than in traditional classrooms.	3.40	.99	2.88	1.13	1.545	.129
12. Using virtual classrooms helps me discover my communication problems.	3.40	1.06	3.16	1.22	.665	.510
Overall	3.12	.38	3.11	.62	.074	.941

*p<0.05

Studies such as those by Yukselturk and Bulut (2009) have shown that gender does not significantly impact academic performance or perceptions of learning effectiveness in online environments. Similarly, Arbaugh (2000) indicates that gender does not significantly affect students' satisfaction and learning outcomes in virtual classrooms. These studies suggest that the design and delivery of virtual classroom experiences may be effective in creating a neutral learning environment where gender biases are minimized, allowing both male and female students to benefit equally.

Moreover, the findings of González-Gómez et al. (2012) highlighted that virtual learning environments can provide a level playing field by offering flexible, self-paced learning opportunities that cater to diverse learning styles and preferences, which might contribute to the minimal perceived difference in communication skills enhancement between genders.

Significance of the Difference on the Perceived Effectiveness of Virtual Classroom in Enhancing Communication Skills when Categorized According to Age

Table 4 shows the significance of the difference in the perceived effectiveness of virtual classrooms in enhancing communication skills when categorized according to age. Looking at each result, perceptions of students 18 years and above (M=3.53, SD=1.01) and students 16-17 years old (M=2.88, SD=.99) vary significantly on the statement "I think virtual classrooms can help me overcome my communication skills issues," t (45) =2.139, p=.038. This means that older students might have developed better cognitive and social skills and has more exposure to various educational technologies, which can lead to a more positive perception of virtual classrooms. This indicates that increased exposure to educational technologies may lead to better acceptance (Castillo, 2021; Parker & Martin, 2010).

Research indicates that students generally hold positive perceptions of virtual classrooms for enhancing communication skills in EFL contexts (Alshumaimeri & Alhumud, 2021; Hussain Al-Qahtani, 2019; Abdullah Alkathiri et al., 2021). Virtual classrooms can help overcome communication challenges such as lack of confidence and anxiety (Alshumaimeri & Alhumud, 2021). Students believe that these online environments can improve their oral communication, technical, and self-learning skills (Abdullah Alkathiri et al., 2021). However, the lack of face-to-face interaction is noted as a significant obstacle in online learning (Alshumaimeri & Alhumud, 2021).

Additionally, students aged 18 years old and above feel more confident when they speak in virtual classrooms compared to students aged 16-17 years old, t (45) = 2.554, p=.014. This implies that older students' increased confidence may stem from their maturity, experience, or comfort with technology. Older students tend to have more confidence in using technology for learning compared to younger students (Yau & Cheng, 2012). Virtual classrooms, particularly those using avatars, can help alleviate speaking anxiety and improve confidence among students (Hirata, 2023). This is especially beneficial for shy students who may struggle with public speaking anxiety in physical classrooms (Rencewigg & Joseph, 2024). However, the impact of online learning on speaking self-efficacy may vary. One study found that offline learning had a more positive effect on high school students' self-efficacy in public speaking compared to online learning (Zaki & Lintangsari, 2023). These findings highlight the complex relationship between age, learning environment, and speaking confidence, suggesting that different approaches may be needed to support students of various ages and backgrounds.

Furthermore, perceptions of students aged 18 years and above (M=3.30, SD=1.01) and students aged 16-17 years old vary significantly on the statement "In virtual classrooms, there are more opportunities for me to speak than in traditional classrooms" t (45) = 2.215, p=.032. This means that older people might be more comfortable using technology for communication, leading them to perceive more opportunities for interaction in virtual classrooms. Research suggests that older students may indeed be more comfortable with technology-mediated communication in virtual classrooms. Decker and Beltran (2016) found that older students reported feeling more at ease interacting with classmates online compared to

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younger students. Similarly, DiBiase and Kidwai (2010) observed that older students tend to perform better in online classes, attributing this to their readiness for self-directed learning. Martin et al. (2012) highlighted the importance of synchronous components in facilitating interaction, with students valuing immediate feedback and presentation experiences.

Moreover, the result implies that the dynamics of virtual classrooms, such as chat features, breakout rooms, or online discussion boards, might align better with older students' communication preferences. Research suggests that virtual classrooms can align well with older students' communication preferences. Virtual breakout rooms enhance student participation, communication, and cognitive engagement in online environments (Tsihouridis et al., 2021). Video and text chat features in virtual classrooms increase student engagement and a sense of community, which is particularly beneficial for older students in online programs (Berry, 2019). However, students prefer step-by-step instructions and brief descriptions in virtual settings, focusing on practical tasks rather than theoretical content (Mavrodieva, 2020). While virtual classrooms offer opportunities for online learning, there are technical and organizational challenges in managing dialogue effectively (Mavrodieva, 2020).

Lastly, the overall result showed that there was no significant difference in the perceived effectiveness of virtual classrooms in enhancing communication skills when categorized according to age, t(45)=.500, p=.625. This means that older and younger students perceive virtual classrooms as equally effective but moderate in enhancing their communication skills. Alshumaimeri and Alhumud (2021) found that students held positive attitudes toward virtual classrooms for improving oral communication skills despite challenges like lack of face-to-face interaction. Hussain Al-Qahtani (2019) reported similar positive perceptions among teachers and students, highlighting the significant role of virtual courses in enhancing communication skills.

Table 4. Significance of the Difference on the Perceived Effectiveness of Virtual Classroom in Enhancing Communication Skills when Categorized According to Age

Statements	16-17 y.o.		18 y.o. & above		t(45)	p-value
	M	SD	M	SD		
1. Virtual classrooms make me feel more comfortable participating in classroom discussions.	3.41	.94	3.87	.86	1.685	.099
2. Virtual classrooms make me feel more motivated to participate in discussions.	3.18	1.07	3.60	1.07	1.302	.200
3. Virtual classrooms play a significant role in improving my oral communication skills.	3.06	.83	3.60	1.10	1.761	.085
4. The absence of face-to-face does not hinder participation in discussions.	1.88	.93	2.00	.95	.412	.682
5. I think virtual classrooms can help me overcome my communication skills issues.	2.88	.99	3.53	1.01	2.139	.038*
6. In virtual lessons, it is easier to interact with my instructors and peers.	3.06	1.03	3.37	1.00	1.004	.321
7. I feel more confident when I speak in virtual classrooms.	2.88	1.05	3.70	1.06	2.554	.014*
8. Commenting on what my instructors and peers say is more comfortable in virtual classes than in the classroom.	3.35	1.00	3.33	.76	.076	.940
9. Virtual is better than traditional classroom in improving my communication skills.	3.41	1.37	3.07	1.11	.939	.353
10. I prefer attending virtual rather than traditional classes.	2.18	1.07	2.03	1.00	.459	.648
11. In virtual classrooms, there are more opportunities for me to speak than in traditional classrooms.	2.59	1.12	3.30	1.02	2.215	.032*
12. Using virtual classrooms helps me discover my communication problems.	3.12	1.11	3.30	1.21	.511	.612
Overall	2.92	.75	3.23	.87	.500	.620

*p<0.05

IV. CONCLUSION

The perceived moderate effectiveness of virtual classrooms in enhancing communication skills suggests that while these platforms offer advantages in certain areas, such as asynchronous discussion and access to diverse perspectives, they may fall short in fostering real-time interaction and nonverbal communication. These limitations are particularly evident among students with limited technological access or those enrolled in courses requiring high levels of synchronous collaboration.

The findings indicate that students' perceptions of virtual classrooms as a tool for enhancing communication skills are remarkably consistent across gender and age demographics. Both male and female students, as well as younger and older students, reported a moderate level of effectiveness for virtual classrooms in developing their communication abilities. These results suggest that the perceived impact of virtual classrooms on communication skills is relatively uniform among the student population studied.

To maximize the benefits of virtual classrooms while addressing their limitations, teachers should strive to balance virtual and face-to-face interaction. Explicitly teaching communication skills, such as active listening and clear articulation, is crucial in both environments. Effective utilization of technology is essential, but it should be accompanied by a focus on accessibility for all students. Providing ample opportunities for students to practice their communication skills within the virtual platform can significantly enhance their development.

Supporting students' virtual learning experience involves ensuring reliable access to technology and creating a conducive home environment for online education. Encouraging open communication within the family can complement the virtual classroom experience. It is also important to maintain a balance between screen time and other activities to promote overall well-being.

Active engagement in virtual classrooms is key to improving communication skills. Developing digital literacy can enhance participation and collaboration in online learning environments. When facing challenges, students should not hesitate to seek assistance from teachers or peers.

To deepen the understanding of virtual classrooms' impact on communication skills, future research should focus on specific communication skills rather than general effectiveness. Examining the influence of various contextual factors, such as subject matter and teaching methods, is essential for providing a comprehensive view. Additionally, addressing equity issues related to technology access and student demographics is crucial for informing educational practices.

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