

Classroomscreen's Timer and Work Symbols Widgets: Encouraging Students' Communication During Group Works in English Classes

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Abstract:

This action research uses Classroomscreen, an interactive tool that has a variety of features and options for facilitating learning like widgets such as timer and work symbols, to encourage communication during group works. The research used a practical action research design that utilized mixed methods to address the study's problem and was conducted at a private Junior High School in the Philippines. The data was collected in a span of two weeks in a Junior High School classroom which consisted of 45 students aged 14-16. The researchers introduced the said application and conducted an observation before and during its use. After the proposed intervention, the researchers conducted a focus group discussion and computed the data using Wilcoxon Signed Rank Test. The results showed that students can better concentrate and pay attention, ask and answer questions, and communicate better over-all during groupworks when they were using Classroomscreen. Thus, the researchers recommend that teachers maximize the use of Classroomscreen in both face to face and online learning.

Keywords: *virtual board; classroom tools; classroom interaction; face to face learning; classroomscreen*

1. INTRODUCTION

Face-to-face classes gradually returned in the Philippines at the beginning of 2022 as the COVID virus and cases become more manageable. The resumption of face-to-face classes has made apparent the very real impact of online learning to students. This is supported by study by Dreifuss and Serrano (2021) which stated that most instructors agree that students' performance has worsened after going back to face-to-face in classrooms when compared to before the pandemic. The problems they encountered when communicating online, including their limited vocabulary, and understanding of the English language's structure, difficulty in understanding concepts, speaking anxiety, and the lack of confidence in their abilities to communicate in English (Parcon & Reyes, 2017; Domogen, 2021) have carried on to onsite classes. The problems in communication also relate to problems in group works, which heavily rely on communication skills to be successful. There have been challenges which were related to lack of concentration, lack of interaction, time management, gaining knowledge, motivation, and collaboration (Ly et al., 2021).

In several classroom observations, validated by interviews with teachers, the researchers observed how most junior high school learners were unable to interact or collaborate well with their classmates during their English class. This is supported by Rojabi (2020) who mentions how the effective classroom experiences of the students were compromised due to these constraints in online learning. In addition, teachers have also noticed that students are having difficulty managing group tasks, are easily distracted by side chats, are going overtime with tasks, and are not accustomed to interacting with others. The teacher particularly noticed how students struggle when it comes to group work because students are no longer used to working with peers and communicating with them. With these observations, it is evident that effective classroom experiences of the students were compromised due to constraints and limitations of online learning. Diaz-Agea, et. al, (2022) further note the lack of training in communication skills and how communication in general has deteriorated during the pandemic, especially during the initial waves. Thus, an intervention that could address these issues of students in their communication ability is highly needed.

It is in this premise that this action research aims to encourage communication during group work using Classroomscreen widgets such as the timer and work symbols. Classroomscreen is an interactive tool that has a variety of features and options for facilitating learning. Teachers can project a variety of digital widgets onto a screen for the entire class to see. Tools such as the clock, timer, traffic light, and sound level can be used to direct individual work or improve group productivity. Teachers may also use text and art tools to give instructions more context. There are also work symbols such as whisper, silence, ask neighbor, and work together which reminds the students to be more mindful of their interactions during group works. These visual reminders can help students remember under what conditions they must complete their tasks (Bureau, 2023).

There has not been much research done on Classroomscreen, and only a handful have explored its use in the classroom (Alia et al., n.d.), thus, this research aims to assist teachers and students in various institutions by providing information on students' classroom experiences in terms of collaboration using this interactive tool. This contribution is thought to be a great suggestion for future researchers and a significant steppingstone to a new era of learning.

2. METHOD

The respondents chosen were Grade 9 level students from a private Junior High School in Cagayan de Oro City, Philippines. These students were between the ages of 14-16, and there was a healthy mix of male and female students. The class observed had a total of 45 students, but only 17 agreed to participate in the study. The gathering of data was carried out face to face, thus the distribution of consent and assent forms were done physically. In addition, the process was done during the students' vacant time to make sure that class hours of the students were not compromised. The partner teacher was provided a teacher's manual, and training on the Classroomscreen widgets which were the timer and work symbols.

The students and parents were given 1-3 days to decide whether they will or not participate in the study. Only the respondents who accomplished the consent and assent forms were to fully participate in the study, however, those who were not permitted to join by their parents or who have decided to withhold inclusion can still participate in the implementation, however the data that was gathered from them was not included in the study- they also did not participate in the FGD.

The researchers then observed two sessions, the first session observed was without the use of Classroomscreen and second session was the continuation of a topic that students discussed, but this time with the use of Classroomscreen. The researchers and the partner English teacher made sure students knew when they were going to have group work and mentioned that they were to be observed. The researchers observed two sessions with the same set of checklists. The researchers observed the behaviors of individual students while working within their groups and took notes based on the indicators in the checklist. After the observations, the researchers performed a frequency count from the two sessions and compared the frequency count per item in the presence and absence of the Classroomscreen using the Wilcoxon Signed-Rank test.

Furthermore, precautionary measures were considered. The tool did not require a strong internet connection; thus, the partner teacher was able to carry out the intervention tool all throughout the implementation. However, if the teacher was not able to access the tool due to internet connection, the researchers will provide means of data and/ or Wi-Fi.

For the following week of the implementation, the researchers conducted a Focus Group Discussion (FGD) to strengthen respondents' experiences with the interactive application and its features as an intervention. The Focus Group Discussion (FGD) took place in-person. Overall, the data collection procedure took two weeks to complete. The researchers ensured that the respondents' identities were kept strictly confidential. Thus, when interpreting the students' responses in the paper, the researchers referred to the students as A, B, C, and so on.

There were three treatments of the data employed in the study. The first (1) section comprised the researchers' made checklist comprising items indicating expected communication behaviors of students during groupworks before and after the use of Classroomscreen. Afterwards, the researchers did a frequency count per item after their individual observation from the two sessions: before and after the use of classroom screen which differences were compared and computed using Wilcoxon Signed-Rank.

The Second (2) section used the Wilcoxon Signed-Rank test in computing the data gathered from the checklist. The Wilcoxon Signed-Rank test was used to evaluate the difference between two treatments or conditions where the samples are correlated. It also helps the researchers determine those differences that have occurred in students' ability to communicate better during group work with the utilization of Classroomscreen's two widgets which were the work symbols and timer.

The Third (3) section was a FGD (Focus Group Discussions) to gather in depth information from the students' collaboration. The researchers set up a face-to-face meeting with the students and asked the following questions: (1). What were your experiences when your teacher was using the classroom screen during group work? (2). In what ways has the use of Classroomscreen helped you work better with your groupmates? (3). Do you want your teacher to keep using the Classroom Screen in group work? Why or why not?

The tools mentioned above have been validated by experts. The researchers requested the assistance of research professionals in the implementation of the study. Participants of the

research also provided and were required to return signed copies of consent and assent forms prior to its implementation, and all risks to the participants were mitigated.

3. FINDINGS AND DISCUSSION

The researcher conducted an observation with the students in the Grade 9 level. Each of the four researchers has its own checklist using identical statements as indicators the researchers made two observations before and during using Classroomscreen.

Table 1. *Comparison of Observed Behaviors Before and During the Use of Classroomscreen*

Checklist	Session 1: Before the Use of Classroomscreen		Session 2: During the Use of Classroomscreen	
	Observers	Interpretation	Observers	Interpretation
1. Students explain the topic with their peer groups.	3	Mostly Observed	2	Somewhat Observed
2. Students listen to the ideas of their group mates.	1	Rarely Observed	3	Mostly Observed
3. Students can follow instructions.	2	Somewhat Observed	4	Always Observed
4. Students can speak out their ideas in the group.	2	Somewhat Observed	3	Mostly Observed
5. Students speak in a clear manner.	0	Not Observed	2	Somewhat Observed
6. Students can finish assigned tasks on time.	1	Rarely Observed	3	Mostly Observed
7. Students can acknowledge other ideas from their peers.	0	Not Observed	2	Somewhat Observed
8. Students are responsive whenever their teacher, group mates, and peer groups ask questions.	4	Always Observed	4	Always Observed
9. Students are able to ask for clarification from their peers.	1	Rarely Observed	4	Always Observed
10. Students give a sign of confirmation about their progress on the planned task.	0	Not Observed	4	Always Observed

The indicator: “Students explain the topic with their peer groups,” can be interpreted as “Mostly Observed”, with 3 out of 4 of the researchers observing that all students were able to explain the topic to their peer groups without the use of Classroomscreen. The researchers have observed that students can share their ideas on the task they were doing with their peer groups as their teacher allowed them to interact. On the other hand, one researcher observed that some groups were discussing with other students in the groups, but the topics were unrelated to the group task. Whereas, during the use of Classroomscreen, 2 of the researchers observed that some students were able to explain the topic to their peer groups using the work symbol widget on Classroomscreen, which can be interpreted as “Somewhat Observed”. However, two researchers observed that there are other groups who were not able to explain the topic well to their peer groups. This echoes the findings of Parcon & Reyes (2017) which mention how students have limited vocabulary and understanding of the English language's structure, difficulty in understanding concepts, speaking anxiety, and the lack of confidence in their abilities to communicate in English. While Classroomscreen provided the visual reminders, many other factors, such as the ones mentioned above, could have affected students' interactions.

The indicator: “Students listen to the ideas of their group mates” can be interpreted as “Somewhat Observed” without the presence of Classroomscreen, as only 2 out of the four researchers observed that the students cannot listen to the ideas of their group mates because of the noise. However, one of the researchers observed that the students were able to listen to each others' ideas because these particular students have loud voices when discussing, causing interruptions to the other students or groups. Nevertheless, during the use of Classroomscreen, 3 researchers have observed that the majority of the students pay attention to what their group members have to share which can be interpreted as “Mostly Observed”. The work symbol widgets affect how the students interact with one another and encourage them to pay attention while someone is speaking. This is supported by the same study by Cohen & Demchak, (2018) which mentions how visual support helps in task-completion.

The indicator: “Students can follow instructions” can be interpreted as “Somewhat Observed” as 2 out of 4 researchers observed that students were able to follow instructions after the teacher relayed them to the class without the use of Classroomscreen. On the other hand, 2 researchers indicated no, students cannot follow instructions since they kept asking for clarifications even after the teacher repeated the instructions. However, all 4 researchers observed that when utilizing Classroomscreen, students could adequately follow instructions which can be interpreted as “Always Observed”. Even though the teacher did not provide instructions verbally, rather only placed them on the Classroomscreen virtual blackboard, the students were nevertheless able to remain composed and pay attention to instructions. This confirms a study by Moneva et al., (2020) which mentioned how most students are visual learners, that they remember and absorb the information better when they see it and read it.

The indicator: “Students can speak out their ideas in the group.” can be interpreted as “Somewhat Observed” as 2 researchers observed that there were students who were able to speak out their ideas within the group especially when their groupmates were silent even without the presence of Classroomscreen. While, the 2 other researchers observed that they cannot speak out their ideas due to the distractions caused by other students such as those who cannot stay still within their group. On the other hand, 3 researchers observed that when using Classroomscreen, the majority of students were able to communicate their ideas to the group which can be interpreted as “Mostly Observed”. With the help of work symbol widgets, students had the opportunity to ask questions, and exchange ideas among their group members. The widgets can be classified as a ‘visual support’ as identified by Cohen & Demchak (2018), which increases independent task completion for each student. While

Cohen & Demchack focused on students with disabilities, visual supports are still very much applicable for regular students as well.

The indicator: “Students can speak in a clear manner,” can be interpreted as “Always Observed” without Classroomscreen, as all 4 of the researchers observed that the students cannot speak in a clear manner because of the noise coming from students, as some of the students are talking out of context and had loud voices. However, during the use of Classroomscreen, 2 researchers observed that throughout the Classroomscreen's intervention, some students were able to speak clearly because of the lack of noise. Yet, the two researchers observed that some students within the group were still unable to speak in a clear manner even with the use of Classroomscreen which can be interpreted as “Somewhat Observed”. It is because some students within their group were silent and not attentive during the intervention. This shows that noise is not the only barrier for students to speak clearly- rather, it could also be coming from inattentiveness. Attentiveness is an important variable associated with students’ behavior at school, as their learning experiences influence their learning outcomes (Ajiboye et al., 2020) Some ways to improve classroom focus include varying tasks, and breaking tasks into smaller parts, even taking out distractions from the classroom (Reeves, 2015). Visual aids, like those than can be used with Classroomscreen, could also stimulate thinking, focus, and and cognition (Rahman et al., 2023;Kishore, 2003).

The indicator: “Students can finish assigned tasks on time.” can be interpreted as “Mostly Observed” before the use of Classroomscreen, as 3 out of 4 researchers observed that the students cannot finish assigned tasks because they cannot keep track of time and they are doing unnecessary activities such as side chatting and roaming around the classroom. One researcher observed that one group finished the task on time however it is not yet final. Alternatively,with the use of Classroomscreen the indicator can be interpreted as “Mostly Observed”, as 3 researchers observed that with the Classroomscreen Timer widget, the majority of students and groups were able to complete the activities on time. The students were time-conscious, stayed on topic, and completed everything within the allotted time. This is supported by a study by Sahito et al., (2016) which mentions how reminders based on clocks and watches can be used to alert of the time when a task is to be done. This allows students to self-regulate their speed in the accomplishment of tasks.

The indicator: “Students can acknowledge other ideas from their peers.” can be interpreted as “Not Observed” without Classroomscreen, as all 4 researchers were not able to observe students acknowledging ideas from their peers, as they observed that students only listened and acknowledged one idea from one student. On the other hand, during the use of Classroomscreen, 2 researchers have observed that some of the students in the groups have acknowledged the contributions of their peers' ideas which can be interpreted as “Somewhat Observed”. However, during the use of Classroomscreen, 2 researchers still observed that some students did not acknowledge other ideas from their peers because there’s a group that did not decide right away on what to do because some refused to consider alternate viewpoints from their peers. This situation reflects the findings of Jonassen & Kwon, (2001) which mention that face to face group communications’ flow and productivity are affected by dominant members, disinterest, and even conflicts of ideas. The research mentioned that face to face conversations usually include topics not related to the task at hand. Thus, Classroomscreen and similar applications, while helpful, still depend on how students use them for communication (Rahmasari & Chasanatun, 2024)

The indicator: “Students are responsive whenever their teacher, peer groups, and groupmates ask questions,” can be interpreted as “Always Observed” before the use of Classroomscreen, as all 4 researchers observed that the students are responsive with each other; peer groups and within their group, as well when the teacher asked the progress of their task. However, the teacher kept on repeating her instructions, and students repeatedly asked clarifications from other groups or their group members about the given instruction. While

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using Classroomscreen, the indicator is also marked as “Always Observed” but this time, all 4 researchers observed that students were attentive to questions posed by their peers, teachers, and group members. The partner teacher made use of Classroomscreen widgets, which enabled students to pay attention when their group members or teachers ask questions. Like earlier stated, this is also an indication that Classroomscreen helps with focusing on tasks as it serves as a visual aid that directs attention (Kishore, 2003).

The indicator: “Students are able to ask for clarification from their peers.” can be interpreted as “Rarely Observed”, as only 1 out of 4 researchers observed before the use of Classroomscreen that there are students who were able to ask clarification from their peers, especially those in a group who are finalizing their group output. On the other hand, the other 3 researchers observed that some students did not bother to ask questions or clarifications from their peers because the researchers observed that students were not able to hear each other due to the noise of the surroundings. But with the use of Classroomscreen, all of the 4 researchers have observed that students were able to ask for clarification from their peers throughout the intervention, which can be interpreted as “Always Observed”. Students were able to ask and answer questions among their group members because of the Classroomscreen's work symbol widgets and because there was less noise.

Lastly, the indicator: “Students give a sign of confirmation about their progress on the planned task,” can be interpreted as “Not Observed” without Classroomscreen, as none of the researchers have observed that students were not able to clearly show which part of the planned task they are already at. Researchers observed that some students while in their respective groups are disordered such as; their voices being loud, doing unnecessary tasks, and sometimes being unresponsive to what the teacher was asking. Meanwhile, during the use of Classroomscreen, the 4 researchers observed that students were able to confirm the planned task since during the intervention, all groups were able to understand the instructions clearly and confirmed that they would be continuing or finishing their group task, which can be interpreted as “Always Observed”. This finding is supported by Klein et al., (2019) which mentions how visual cues can help students perform better, respond with higher confidence, and experience less mental effort.

2. Is there a significant difference in the students' communication in group work before and after the use of ClassroomScreen?

Table 2. *Results of the Wilcoxon signed-rank test on the Observed Behaviors During the Use of Classroomscreen*

During the Intervention
W value = 1.5
Mean difference = -1.78
p<.05
significant

Using the Wilcoxon signed-rank test, the calculation during the use of Classroomscreen and the same calculation of Wilcoxon signed rank has the result value of significant at $p < .05$. This indicates that students were able to have better communication in group works while the teacher was using the Classroomscreen. In particular, the students were able to follow the instructions by the teacher, acknowledge other ideas from their peers, be able to ask clarification from their peers and be responsive to the assigned task given to them. Furthermore, this shows that the use of Classroomscreen does improve the students' communication to the group work where it helps them collaborate well and focus on their

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group work activities. The focus of visual cues is not just the clear expression of meaning and emotion, but moreso the formation of relationships, increasing the level of social presence and feeling of community (Bolliger, 2009). Classroomscreen does this through providing a clear point of instruction without being disruptive. This finding is further supported by Sixl-Daniell & Williams (2005) who mention that the use of symbols and expressions in the academic environment could enhance the quality of interaction and communication and lessen the potential for misinterpretation and, eventually, conflict.

3. What are the experiences of the students in terms of improving their communication while using the two widgets of Classroomscreen?

For the first question which is “What were your experiences when your teacher was using the classroom screen during group works?”

The majority of the students said that the experience while using the tool enables them to have focus while doing their group work like Student A said that it was very effective and it helps them to be aware with the instruction, time and activities given on hand. Student B also added that the work symbols constantly reminded them about noise control with this we are able to communicate with one another. Student C said that it was confusing at first since it was just introduced to them. However, the student added that the time is pressuring because they had to stop making progress to follow instructions.

The second question which is “In what ways has the use of Classroomscreen helped you communicate better with your groupmates?”

The majority of the students said that Classroom Screen helped them to communicate better with their group mates like Student D said that it helped them to track the remaining time to work together and it made them calm knowing enough time, and it enabled them to work organized, cooperative and more focused. Student E also added that it helped them to work better with their group mates, especially sharing ideas by also acknowledging each other's ideas.

The third question which is “Do you want your teacher to keep using the Classroom Screen in group work? Why or why not?”

15 out of 17 students would like to keep using the Classroomscreen with the following reasons: because it helps them manage the noise, time, maintain class order, improve attention, and keep instruction from the teacher. However, the two students who did not agree to keep using the Classroomscreen with the following reasons: they felt pressured because of the timer and they also prefer to have a physical interaction with the teacher.

4. CONCLUSION

This study demonstrated that Classroomscreen, with its widgets like timer and work symbols, is a useful interactive tool that educators may use to encourage communication among students during group work. The Wilcoxon signed rank test, the statistical instrument used, demonstrates a significant beneficial improvement in student communication when using classroom displays during group work. The timer widget allows students to monitor their time while working on their assignments. The result of the second observation—during the use of the Classroomscreen—showed that students are aware of the passing of time and are able to finish the work on schedule. As a result, they are aware of the window of time during which they can do their work, and each member of each group is able to monitor it

on the screen and inform their group mates about it. Furthermore, the use of the work-symbol widgets allows students to collaborate peacefully with their group members and peer groups while still adhering to the signs displayed on the projector in front.

The work symbols such as silence, whispering, and work together are always reminded of when to keep silent, discuss with one another the output, and lower down their voices to avoid disruption to the other groups working. Classroomscreen is also observed to be effective in helping the teacher communicate with the class without disrupting the focus of the students. However, students' engagement in Classroomscreen would not be possible without the supervision of teachers. The teacher also plays a vital role in activating students' communication in face-to-face learning, most especially during groupworks. Thus, the researchers conclude that Classroom Screen is a useful tool that teachers can use to enhance their students' communication in face-to-face settings, even though the study is only limited to the use of the timer and work symbols widgets. These widgets were proven to be effective based on the results and feedback from the class observations.

Based on the focus group discussion, the student responses revealed that Classroomscreen can be a useful tool for classroom management, student focus, and attention in addition to enhancing communication during group work. The teacher can use the other widgets of Classroomscreen as it helps to reinforce expectations for appropriate noise levels during different classroom activities. The traffic light, drawing, random name, and other widgets are a few of the features the teacher can use while students are working on their group task. Using all the features of the Classroomscreen, students have clear guidelines for the instructions and the next steps they will do while in both individual and group activities. In this way, the students are more organized in their respective groups. Thus, it assists the teacher in classroom management.

Moreover, it works well to help students concentrate and pay attention during group tasks. One of the students claimed that because the classroom is orderly and organized, that they can concentrate well and become mindful of their actions and voice volume, which helps them to stay focused when working on group work. Students also highlighted that Classroomscreen is user friendly, very flexible, convenient, and easy to use by teachers in facilitating class activities.

While Classroomscreen is helpful in enhancing students' communication and assists the teacher in classroom management, it is important to note that the teacher's presence cannot be discounted. The study has positive results, however, had the time spent using Classroomscreen as an intervention been longer, and had there been more participants in the study, this research could have yielded more insights and significant findings. Future researchers can use this information as a baseline for studying other applications which use visual cues to aid in communication.

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