

## Fostering a Humane and Green Future: Pathways to Inclusive Societies and Sustainable Development



### Decreasing Online Inattentiveness Through An Animated Class Assistant

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**Abstract:** Inattentive behaviors of students in the online learning set-up is a common occurrence. For early childhood students, inattentive behaviors become rampant as there are multiple factors of inattention, such as the home environment and the online environment itself. Researchers have also observed students not being participative during activities or shifting their attention away from the lesson happening during class hours. With technology being utilized more often in the online synchronous classroom, a popular media with children are animations. Using animations as a learning tool and model in the online classroom, the research aimed to provide insight on how the use of an animated class assistant would help decrease children's inattentive behaviors in the online learning environment. Conceptualized by the kindergarten participants, "Little Bunny" served as the main intervention with prompts such as "Sit Down", "Pay Attention", and "Be Quiet". Using a researcher made inattentive behavior frequency chart, different cognitive, social, and physical inattentive behaviors were tallied. Results showed improvement in the inattentive behaviors of non-participation in activities, asking teacher to repeat instructions, talking about things that are not related to the lesson, looking away from the screen, and asking questions that are not part of their lesson. Furthermore, "Pay Attention" was the most used and effective prompt. The researchers recommend exploring alternative interventions that can be used for physical inattentive behaviors and ways to implement the class assistant in face-to-face classes.

**Key Words:** Online environment; Inattention; Animation; Class assistant

#### 1. INTRODUCTION

Almost two years into the COVID-19 pandemic, there had been changes with the way education is being serviced to the public. Online learning modalities were utilized to teach; and although e-learning was considered a form of non-formal education, it was deemed that it would be only applicable as formal education when the circumstances allow to do so (Aristovnik et al. 2020 as cited by Danchikov et al. 2021). The shift to the online learning classroom brought numerous challenges and opportunities for the innovation and utilization of technological tools that provided new learning experiences for students that would aid them in the online learning classroom. Along with this however, were the prolonging challenges that students, especially in early childhood, were facing despite learning from home; one of them is inattentiveness during online synchronous classes. Due to the online environment that people had no choice to spend their time in, the shrinking or shortening of attention span gradually

happened along with the hours of investment in social media and other technologies in this digital age (Subramanian, 2017). Specifically with early childhood students, existed a challenge in maintaining students' attention during online classes as children do have short attention spans, along with it is the fact that they are very active at their age (Tatminingsih et al. 2021). There were tendencies to be distracted as there were only urges to get up and move around, which are contradictory to an online learning setting, wherein they are required to sit still and be in front of the learning gadget while a teacher facilitates a class. Furthermore, with the drastic change of the physical environment to the online environment, children are limited by the activities they are asked to do by their teachers, added by the fact that most parents are also still clueless as to how they can support their child's learning in the online setting; which increased the chance of inattentiveness during class sessions as well (Fitriani, 2021). With the various digital media that can be integrated into the classroom, a popular media that is used are

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animations. Animations and as well as cartoons are in demand with children, it can serve as a learning tool for children, as well as an instructional tool that teachers can use in their classrooms (Prilosadoso et al. 2021). Derived from Bandura's Social Learning Theory (Bandura, 1977), explaining how it is believed that different behaviors can be observed and learned through the use of models. Under this, includes different processes that influence how different behaviors can be learned more effectively, starting with attention. In this phase, the model should be able to catch the person's attention, making them fully focus on the model. Bandura elaborates that the more unique or interesting the model is, the more chances of being able to retain the attention for a more prolonged period of time, and this is best exhibited in television or in digital media., This study explored integrating an animated class assistant into the online classroom for early childhood to address the current problem of inattentiveness of Kindergarten students.

## 2. METHODOLOGY

This action research followed a single-group quasi-experimental research design in which the single case or group of participants also serves as the own control group. This study included a pre-test, an intervention stage, and a post-test that determined how the use of an animated class assistant may help decrease inattentive behaviors in the online synchronous classroom of a Kindergarten class. Qualitative and quantitative data was gathered and analyzed to present multiple perspectives on the outcomes of the proposed intervention.

Through a convenience sampling method, the researchers gathered participants for the intervention of the study which included one class of kindergarten students who studied at a private preschool from 9:30-10:30am. There were 6 students ranging from ages 5 to 6 years old; specifically 3 girls and 3 boys.

The statistical tool used in this action research was a frequency chart divided into three sections The first section focused on the cognitive control of the students, the inattentive behavior pertained to a goal directed behavior that influenced the action or behavior of the students (Sørensen, Plessen, & Lundervold, 2011). The second section was on the physical inattentive behaviors of the students.

Physical inattention is a kind of inattentive behavior that is triggered by the external factors/stimuli from the learning environment. Which would lead to the student/s acting on inattentive behaviors from being distracted. Moreover the student/s may not also grasp the information they need from the discussion properly due to the inattentive behaviors they displayed (Lundervold & Bøe &, 2017). The third section was based on social inattentive behaviors. Irrelevant stimuli from their learning environment may distract them while the class was ongoing, this included auditory and visual external stimuli. Also the involvement of the parents and the teacher was essential towards guiding the children towards sustaining their focus (Searle, Miller-Lewis, Sawyer & Baghurst, 2013). Pre- and post-interview questions with the teacher were also used with regards to class routines, and how the animated class assistant has impacted the inattentive behavior during class.

After securing parental consent, the pre-test period started. For one week, the researchers used the frequency chart when they observed the students and recorded the online synchronous sessions to take note of the inattentive behavior of the students during class. The researchers also conducted a pre-intervention interview, and creation of the animated class assistant. The researchers guided the students to collaborate and create the class assistant that was used for the intervention. The character was then animated or digitalized by the researchers themselves and functioned as a pop-up moving image that demonstrates a certain action or cue to address the inattentive behavior that the student manifests. All animations were created through an application called Flipaclip. The animated class assistant intervention was implemented through the use of the OBS program which was applied through Zoom. Finally, the frequency chart and teacher interview was conducted once again for the post-test period.

The authors were able to employ manipulation checks through observation from using the frequency charts. Since the implementation of the animated class assistant was applied during their online class, one of the researchers implemented the animated class assistant, while the other researcher observed and took note of the efficacy through the frequency chart. In addition to this, we also compared the frequency charts from one another to see if there is a decrease in inattentive behavior. We compared the number of times the students exhibited cognitive, physical and



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social inattentive behaviors. Then we used an overall graph to indicate the general progress of the decrease in inattentive behavior.

## 3. RESULTS AND DISCUSSION

### 3.1 Social Inattentive Behaviors

Except for Day 3, the different social inattention behaviors were displayed more than five (5) times per day during the pre-intervention period (see Table 1). Specifically, the behavior of talking while the teacher is talking/explaining was the most exhibited social inattention behavior. This occurs mostly during activities such as when the researchers prepared a trivia game, they had to keep the class in order since all of the students kept talking at once even while they were giving instructions and asking them to be ready for the activity.

Table 1. Frequency of social inattention behaviors

Social Inattention Behavior	Pre-Intervention				Intervention										Post-Intervention
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15
Talks while the teacher is talking/explaining something about the lesson	8	3	3	3	2	1	3	0	0	0	0	1	2	1	8
The student/s are not participative during activities	2	2	1	5	0	0	0	0	0	1	0	0	0	0	6
The student/s does not respond when the teacher is asking a question, or calls their attention to shift their focus back to the lesson.	0	1	0	3	1	0	0	1	0	2	0	0	0	0	0
<b>Total</b>	<b>10</b>	<b>6</b>	<b>4</b>	<b>11</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>14</b>

From the pre-intervention interview, the teacher answered that she thinks it is since they're at home and that they just look for social interactions, hence the reason why the students would keep on talking and share their experiences. It shows how the students are affected by the change from face to face classes to online classes with how they do not have as much social interactions towards their peers during online classes.

When the animated class assistant, or "Little Bunny" was implemented, social inattention behaviors were reduced. The prompt would appear on the screen first which is asking them to "Be Quiet" or "Pay Attention". When the students notice this, they acknowledge it and copy the action that is being shown. Thus, showing that the animated class assistant was effective in asking the students to pay attention whenever it is flashed on the screen. Prompting before

letting the students know the activity or moving to the next slide that shows what activity they will be doing, helps the students know how to behave before the whole class moves on to the next part of the lesson or activity in class. The most affected behavior improved was when the student/s were not being participative during activities. It dramatically lessened as it was only exhibited once during the entire intervention period (on Day 10).

During post-intervention, the occurrences of social inattention behaviors spiked up to fourteen (14) times. Some students again would not participate in different music and movement activities, and some were just sitting down and eating while the rest of their classmates joined in the activities. Students would also talk over the teacher and their classmates. This again, results in more inattentive behaviors being shown due to the disruption and disorder of the class. This was triggered by the fact that the activities were more social; according to the researcher's notes, were mostly games. According to the notes, although the activities were mostly games and other fun activities, some were not interested, and only did what they wanted to do at that time, since the lead teacher would also barely call their attention, resulting in the spike. However, a behavior that was extinguished was the behavior of not responding when the teacher is asking a question, or calling their attention to shift their focus back to the lesson.

### 3.2 Physical Inattentive Behaviors

During the pre-intervention, there were two most exhibited physical inattentive behaviors (see Table 2). The first was students looking away from the screen due to the unrelated stimuli from their learning environment, which was exhibited 21 times. This is where the students would become distracted from what they see in their learning environment that is unrelated in class. The second was the inattentive behavior where the students have tendency to fidget or play with their toys or objects that are not related to what was being taught, this was also exhibited 21 times. It usually happens throughout the class, where the students would be fidgeting with their toys, hair accessories, and materials that are unrelated to the lesson.



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Table 2. Frequency of physical inattentive behaviors

Physical Inattentive Behavior	Pre-Intervention				Intervention										Post-Intervention
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15
Looks away from the screen (Is distracted by environmental stimuli from the learning environment)	13	3	3	2	3	2	2	4	1	1	1	2	0	0	2
Fidgets or toys with objects that are not related in class	10	3	5	3	1	3	1	2	0	0	3	1	3	2	2
Stands up and disappears from the screen (the teacher cannot see the student/s)	1	1	1	1	2	0	0	0	1	3	5	3	0	1	5
Moves from one place to another (the student moves from one up to several areas of the house)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>25</b>	<b>8</b>	<b>10</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>3</b>	<b>6</b>	<b>2</b>	<b>4</b>	<b>9</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>9</b>

Aside from the students moving from one place to another, the rest of the physical inattentive behaviors had varied occurrence. Some would occur thrice or twice, then would not occur at all in some days. One behavior, where students would fidget with toys and objects not related in class, occurred once on the first day of intervention, then spiked up to three on the second day, then back to one on the next day. It is important to note that the researchers have also observed that since the students' parents are with them during the synchronous class, they would tend to fidget with toys or exhibit the said inattentive behaviors as they are also in their own rooms where toys and other materials are reachable. It was also observed that the students were not usually reprimanded, not until the lead teacher would call them out on their behavior. Like what was also said on the social inattention behaviors, there were different lead teachers on different days, which could have also affected the increase and decrease of physical inattentive behaviors, and as well as the planned lessons for a specific day. The prompt mostly used for the physical inattentive behaviors is "Sit Down"

The post intervention rendered that the students maintained no occurrence of moving from one place to another compared to the pre-intervention where this occurred less than 3 times. This was then followed by students fidgeting with their toys or objects that only occurred twice during the post intervention compared to the pre-intervention where this action was displayed less than 10 times. Apart from this, the behavior where the students looked away from the screen, occurred twice, where the students displayed an increase and decrease display of this action during

the intervention. However compared to the pre-test period where this action happened less than 13 times, there was still a significant amount of improvement, making this behavior the most improved out of all said behaviors. The last section where the students would stand up and disappear from the camera has an increase of behavior as this was exhibited 5 times during the post intervention, compared to the pre-test where this action was displayed 4 times, which means that this was the least section affected by the implementation. Based on the observations, reasons for the resurfacing of the behaviors were due to some students playing with filters or some having to get toys inside their rooms while other students were participating. Like what was explained, the lead teacher for that day barely called the attention of the students who were not participating, hence the occurrence of the behaviors.

### 3.3 Cognitive Inattentive Behaviors

During the pre-intervention phase, the students displayed cognitive inattentive behaviors less than 5 times per day (see Table 3). In that whole duration, the behavior wherein the students would talk about non-related topics in the discussion was one of the most displayed. This would occur during the lesson proper where the students would suddenly unmute and start talking about a book they read the day before that was not related to the lesson during that time. Some on the other hand would talk about random movies and would lose interest in the lesson overall. Another behavior most exhibited by the student participants would be asking the teacher to repeat the question more than once. In one anecdote, the researchers observed that the students would often ask the teacher to repeat what she said in order for them to follow along with the activity or during the lesson. There would also be times where the teacher already repeated the instruction but some students would still ask or to clarify. Even if the instructions were very clear, as it was flashed on the screen and repeated twice by the teacher. As well as the action of the instruction was demonstrated. There would still be instances that the other students couldn't understand the instruction due to them simultaneously talking. In Addition to this, the other students would be distracted from gathering their materials for the activity that they couldn't hear the instruction at that moment.





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Table 3. Frequency of cognitive inattentive behaviors

Cognitive Inattentive Behavior	Pre-Intervention				Intervention										Post-Intervention
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15
The student's ask the teacher to repeat the instructions more than once	0	3	1	0	3	0	2	0	0	0	0	0	0	0	0
The student's talk about non-related topics in the discussion	1	0	1	2	0	2	0	0	0	0	0	0	0	0	0
The student asks questions that are not part of the lesson	0	1	0	2	0	1	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

When the “Little Bunny” virtual class assistant was implemented, cognitive inattentive behaviors did not decrease as much during the first three days of the intervention phase (Day 5 to Day 7). There were instances where the teacher still had to repeat the instructions since the students would keep on asking if they had to follow the examples of the activity on the slides. Some would say, “Teacher, I can’t do that.” or “Teacher do we have to copy?” often before the activity would start, even if the teacher has explained the instructions that they are not going to copy the examples but would instead create their own. With cognitive inattentive behaviors, the prompt “Pay Attention” was the most effective in getting the students’ attention.

However, Day 8 onwards, there were no cognitive inattentive behaviors exhibited by the students. The researchers observed that the students were more focused on the different lessons prepared by the lead teachers and would actively answer the teacher’s questions. Xiao (2013, as cited in Prilosadoso et al. 2021), elaborates that when animations are appropriately used in the classroom through an interactive approach where the students can interact with the character on the screen, they are more likely able to learn the material or the lesson at hand.

Overall, children are able to be more absorbent of this type of media, resulting in gaining their attention. With “Little Bunny” modeling a certain trait that the students were able to see on screen during the class, they have eventually learned to pay attention at times where they have to listen to instructions, do activities, and answer the teacher’s questions (Bandura, 1977). The sudden non-occurrence of any cognitive inattentive behavior proves that the animated class assistant has done its part in keeping the students’ attention during the lesson. Based on the researchers’

notes, the students become more attentive when “Little Bunny ” is shown before the teacher starts to facilitate as a way to prevent future occurrences of any cognitive inattentive behavior. In addition, as the students become used to the animated assistant’s presence, they would immediately acknowledge the assistant by speaking up, “Oh, there’s little bunny!”, then with the teacher’s prompt asking them what the assistant is telling them what to do, they would settle down and be more focused on the screen.

### 3.4 Online Inattentive Behaviors

“Little Bunny”, as the animated class assistant, showed effectiveness in decreasing the different inattentive behaviors, specifically cognitive inattentive behaviors, followed by social inattention behaviors, and physical inattentive behaviors having the least improvement throughout the whole research period (see Figure 1). Moldovan (2021), emphasizes that when using animations as an instrument in the educational process, it gives way for educators to use them to engage children in their learning.

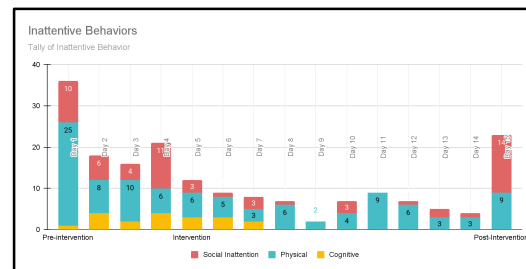


Figure 1. Inattentive Behaviors of Participants from Pre-Intervention to Post-Intervention

The prompt that was mostly used during the social inattention behaviors was the “Be Quiet” prompt. According to Islam et al. (2014), his study applied information and communication technologies which involved an interactive learning system that uses visual learning materials combined with well trained teachers improved the learning skills of the students. This would usually be flashed on the screen when the students begin to get inattentive. Once they notice the prompt and we all acknowledge the presence of “Little Bunny”, the students begin to quiet down and shift back to listening to the teacher. According to Dong (2020), students would lack focus due to the lack of self regulation and social skills. Where they would have the tendency to feel boredom during classes which may lead to unnecessary social interactions that are

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not related to what was being discussed in class, this also leads to them disrupting the class.

On the other hand, the physical inattention had an increase and decrease pattern of how frequent the students presented this behavior. The prompt that was often used based on the observation was “Sit Down”. This would flash on the screen whenever the student begins to stand up to do something that is not related in class. Next to this, “Pay Attention” was also used whenever the students would look away from the screen. According to Fitriani (2021), the learning environment affects the behavior of a student. Since the shift from physical classes moved to online learning, students are still adapting to their new learning environment.

Lastly, the animated class assistant targeted specific areas of the student’s inattentive behaviors. It mostly affected the cognitive inattentive behavior the most, but has the least impact towards the physical inattentive behaviors. However, it was also effective through giving the students cues on letting them know what to do in class before the lesson proper would start. Which is why there were days of zero (0) instances of behaviors during the intervention, as the cues and its purpose was already established in advance before any inattentive behavior would take place.

#### 4. CONCLUSIONS

The study explored the use of an animated class assistant to decrease the inattentive behavior of kindergarten students. Based on the results, the use of various prompts that were deployed when the students elicit inattentive behaviors during class showed promise in decreasing the different cognitive, physical, and social inattentive behaviors. The study concludes that the animated class assistant proved effective and enabled students to pay more attention in the online learning environment.

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