

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH

2025, Vol. 6, No. 3, 1119 – 1126

<http://dx.doi.org/10.11594/ijmaber.06.03.13>

Research Article

Puppets and Protection: The Impact of Puppet-Based Videos on Teaching Pre-schoolers About COVID-19

Esther G. Domingo*, Zeñorina C. Merida, Salome B. Tolentino

College of Education, Bulacan State University, City of Malolos, Bulacan, Philippines 3000

Article history:

Submission 03 February 2025

Revised 28 February 2025

Accepted 23 March 2025

*Corresponding author:

E-mail:

esther.domingo@bulsu.edu.ph

ABSTRACT

The UNICEF's Annual Report 2020 stressed the profound effect of the pandemic on the lives of children. When schools closed indefinitely and they lost access to many vital services, their felt anxious and unsettled (UNICEF, 2021). Young children are most vulnerable. To be able to protect them, they must be given accurate information on COVID-19. Although information about this infectious disease abound, they are mostly intended for adults. Hence, the need to design an informative material that is suitable for young children. Following the ADDIE model, the researchers designed a puppet video consisting of three episodes presented using the Filipino language that focused mainly on COVID-19 awareness and precautions. Forty-two pupils, 32 teachers, and 17 parents from three Day Care Centers participated in the study. The pupils were tested before and after watching the videos. Results show a statistically significant improvement in awareness, with the average score increasing by 0.43 points (from 14.41 to 14.83). The change is unlikely to be caused by random chance ($p < 0.018$), signifying the effectiveness of the material in improving COVID-19 awareness. Likewise, the teachers and parent-participants found the video highly effective in enhancing their children's awareness of the dreaded disease. This study proves that a well-prepared, interesting, and highly informative technology-enhanced instructional material can be an effective method of raising awareness about health and social issues among very young children.

Keywords: *Puppets, Video, COVID-19, Pre-schoolers*

Introduction

One of the most effective means to protect children from COVID-19 is to educate them of its causes, effects, and prevention. Schools and

teachers can help provide them with accurate and science-based facts to help them understand it better and alleviate their fears and anx-

How to cite:

Domingo, E. G., Merida, Z. C., Tolentino, S. B. (2025). Puppets and Protection: The Impact of Puppet-Based Videos on Teaching Pre-schoolers About COVID-19. *International Journal of Multidisciplinary: Applied Business and Education Research*. 6(3), 1119 – 1126. doi: 10.11594/ijmaber.06.03.13

ieties (UNICEF, 2019). The proliferation of misinformation and fake news about the virus abound the internet. Hence, a high level of literacy will help them distinguish credible from false information (Sentell, et al., 2020). There are articles released on how to talk to kids about the corona virus pandemic (World Vision, 2021) and documents intended to help parents explain COVID-19 to their children (UHN Foundation, 2020) available online. However, these materials are intended for adults to read. Videos accessible through YouTube are also available, but these are mostly informational videos. Studies have proven that pre-schoolers retain information better when stories are used as informational tool particularly shared through audio-visual materials (Bartan, 2020). Digital storytelling is an effective means to help teachers encourage learners to participate in discussion and improve comprehension of content (Kosara & Mackinlay, 2013).

Learning materials that are informative and interesting to children particularly ones that used the Filipino language are very limited. Using mother tongue or the learners' first language as a medium of instruction in early childhood classroom is very effective in improving pupils' learning abilities (Awopetu, 2016).

Thus, the study's main goal is to advance children's COVID-19 literacy through learning materials that are informative, interesting, developmentally appropriate, and easily accessed.

Methods

Research Design

The study employed a quasi-experimental design with qualitative elements. It combined a pre-test/post-test design without randomization of participants with a questionnaire composed of open-ended questions distributed through Google Forms to another set of participants. This design was chosen since randomization wasn't feasible but effects of the intervention had to be tested. Likewise, the opinions of a separate group of participants had to be secured as basis for improvement of the product.

Research Participants

The participants were 42 pupils and 17 parents from the three Day Care Centers at Barangay Mojon, Maunlad Homes, and Menzyland in Malolos City, Bulacan. These three Day Care Centers are the partner-communities of the extension project of the College of Education of Bulacan State University where the researchers are connected. Also, 32 teachers from these Day Care Centers and from other centers in Malolos City participated in the study.

Informed consent was duly sought from the parents of the pupils who participated in the study. Among the teachers and parents, only those who agreed to participate were included.

Research Instruments

A validated researcher-made pre-test and post-test were distributed to the Day Care children to assess their knowledge about COVID-19. It is a 15-item questionnaire with pictures as options to choose from given via Google form. The 15 questions were equally divided into 3 three categories -based on the topic discussed in each of the 3 episodes of the puppet video. The first set of questions pertain to the situations prevention; the second set of questions asked about the different protocols that must be done to stop the spread of the virus; and the last set of questions was about the worthwhile activities that could be done while staying at home during the pandemic. It was necessary to use Google forms to distribute the questionnaires since face-to-face interaction was strictly prohibited at the time the study was conducted. As with most studies conducted during the pandemic, limited face-to-face interaction due to COVID-19, necessitated the use of remote data collection techniques through telephone interviews (Save the Children International, 2020).

Likewise, a researcher-made evaluation tool was used to assess the perceptions of both teachers and parents on the effectiveness of the puppet video as a technology-enhanced puppet-based instructional material in educating the day care children about COVID-19 awareness (e.g., importance of handwashing, precautionary measures, and the worthwhile

activities that could be done while staying at home during the pandemic). The validated instrument used a 4-point Likert scale: strongly agree (4); agree (3); disagree (2); and strongly disagree (1) in assessing the effectiveness of the puppet video. This has thirteen statements reflecting the quality and efficacy of the developed video as a form of technology-enhanced puppet-based tool in educating the day care children on COVID-19. The instrument was also translated in Filipino and underwent content-validation through the help of three experts: one in preschool education, another in educational technology and an expert in language education.

Research Procedures

The learning material to be tested as to its efficacy in advancing COVID-19 literacy is a three-episode video that focused mainly on COVID-19 awareness and precautions. The 1st episode introduced facts about corona virus; the 2nd episode showed ways to keep the body clean and sanitized; and the 3rd episode suggested some of the worthwhile things that children can enjoy while staying at home because of the pandemic.

The episodes are in story form with a unified plot and theme. The information presented in the story was based on review of scientific articles about COVID-19. To make the story more relatable and interesting to young children, puppets were used as main characters in the story. These puppets are products of the previous researches conducted by the College of Education. The puppets were chosen to be the characters in the stories because of its abil-

ity to motivate children to pay attention and relate to what they have watched. The visual power of puppets and their ability to stimulate children's imagination make them popular teaching tools (Råde, 2021).

After the script was finalized. It was scrutinized by the heads of the Research and Extension Offices of the University and was validated by experts before it was used by the puppeteers for video recording. Before the video was shown to the participants, the children were asked to answer a pre-test to gauge their level of awareness of COVID-19. The pre-test was distributed via Google forms sent to the teachers of preschooler participants which they forwarded to the parents. It was necessary to use this method since onsite class meetings were cancelled to protect students from COVID-19. The video was shown to participants through teleconferencing and Facebook Live streaming and later uploaded in the YouTube channel "Edu and Cate Time." The post-test was given to the children after they

have seen the video. Furthermore, the teachers and parent participants were asked to evaluate whether the video is effective, engaging, and appropriate for the preschoolers.

Result and Discussion

To measure the level of the COVID-19 awareness of the pre-schoolers in the Daycare Centers before exposure to the video material, they were asked to answer a pre-test composed of items that show prevention and transmission of Covid-19 and activities to do at home during the quarantine. Table 1 shows their mean scores for the pre-test.

Table 1. Level of the COVID-19 awareness of the preschoolers before exposure to the puppet videos

Variables	Mean	Descriptive Interpretation
Facts about COVID-19	39.2	Fully aware
Transmission of COVID-19	40.8	Fully aware
Activities to do at home during quarantine	41.0	Fully aware

Results show a mean score of 39.2 which falls under the “fully aware” category for level of awareness in terms of facts about COVID-19. The participants are similarly well-informed regarding the transmission of corona virus, with a mean score of 40.8. Likewise, a score of 41.0 for the awareness of the activities to do at

home during the quarantine indicates full awareness in this area. This suggests that the preschoolers are in general well-informed of the basic facts presented about COVID-19, including its transmission, and the proper activities they can engage in during quarantine.

Table 2. Level of the COVID-19 awareness of The pre-schoolers after exposure to the puppet-based video

Variables	Mean	Descriptive Interpretation
Facts about COVID-19	41.8	Fully aware
Transmission of COVID-19	41.0	Fully aware
Activities to do at home during quarantine	41.8	Fully aware

After watching the videos, the preschool children took the post-test. Results revealed their full awareness about general facts connected to COVID-19. A mean score of 41.8 shows that they are well-informed about the basics of the virus including its characteristics, symptoms, and importance of cleanliness. Also, the children demonstrated full awareness concerning how COVID-19 is transmitted. With a mean of 41.0, it indicates that they know the main ways of transmission. The preschoolers also exhibited full awareness of the activities they could take part in while at home during quarantine. This points out that they have also learned what they can do to stay busy and not get bored while in isolation. In a cross-sectional survey conducted by Save the Children

Cambodia involving a sample of 241 children aged 10-17 years across 10 provinces. It was revealed that all children know about the new coronavirus, but only 57% know that it can cause severe illness. While 90% of children had received prevention information about COVID-19, significant gaps between children's knowledge and their practice of preventive measures exist. Majority of the respondents gained information through Facebook (94%), followed by TV (60%), and community announcements (56%). Only a smaller fraction of the sample learned about COVID-19 through radio (20%), teachers (24.1%), and village authorities (14.5%) (Save the Children International, 2020).

Table 3. Paired Sample Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	14.41	42	.99	.152
	Posttest	14.83	42	.66	.102

The results from the pre-test ($M = 14.41$, $SD = .99$) and post-test ($M = 14.83$, $SD = .66$) indicate that the exposure to the puppet-based video material resulted in an improvement in the level of the Covid-19 awareness of the children in the Day Care Centers. The low standard deviation calculated for each variable indicates

that individual responses to a question are fairly concentrated around the mean.

A paired- t-test was also run to determine whether there was a statistically significant mean difference. The results are shown in Table 4.

Table 4. Paired Sample Statistics

	Paired Differences					t	df	Sig. (2-tailed)			
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference							
				Lower	Upper						
Pair 1 Pretest - Posttest	-.43	1.13	.17	-.78	-.078	-2.46	41	.018			

Data in Table 4 reveal that due to the means of the two tests conducted and the direction of the t-value, it can be deduced that there was a statistically significant improvement in the level of awareness following the exposure to the puppet-based video material from 14.41 ± 0.99 points to 14.83 ± 0.66 points, a statistically significant increase of 0.43 points, $t (41) = 2.46$, ($p < 0.018$).

In summary, the puppet-based video was effective in increasing COVID-19 awareness among pre-schoolers. The findings are consistent with the motivation behind the creation of a 90-second animated video launched by the

education team of the UNICEF Nigeria Young Advocates network. They found creative and innovative ways to engage children on COVID-19 prevention through the power of storytelling and digital media (UNICEF Nigeria, 2020).

Qualitative Findings

To further assess the quality of the puppet-based video material, parents and teachers of the pupils that served as participants of this study were also asked to answer open-ended questions. The table below shows the emergent themes and sub-themes based on analysis of open-ended responses.

Table 5. Emergent themes and sub-themes based on analysis of open-ended responses

Variables	Mean
Theme 1: The video has satisfactory quality and design	<i>Opo. katunayan na ung mga apo ko na 1 1/2 yrs old at 2 y/o ay nakatutok sa panonood ng video at nagpakita sila ng interest sa panonood ng bidvo</i> (Yes. In fact even my younger grandchildren, 1 ½ year old and a 2 year old, were quite engrossed in watching the video. They showed interest in watching the video).
Theme 2: Effective instructional material	<i>It gets the attention of the children. The willingness to listen is there.</i>

2a. Captures the attention and interest of the pupils

Malaking tulong po ito lalo ngayon sa panahon ng pandemya kung saan isa ito sa mabisang paraan para maunawaan nila ang kahalagahan ng mga pangyayari sa kanilang paligid. (It is very helpful especially during the pandemic because it is an effective means for them to understand the importance of the events that occur in their environment).

Theme 3: The aspects of the video that still need to be improved

3a. Audio

3b. Graphic design

Lakas ng audio pa (Increase audio volume)

3c. music

Dagdagan pa ng disenyo para lalong maakit ang bata dagdagan pa ang paggamit ng music (Add more designs to attract the children and improve the music background)

Theme 4: The video can be recommended to other teachers and parents.

yes, because it helps to explain to their kids of what they want to explain regarding to the present situation especially this pandemic [sic]

4a. It will help explain COVID-19.

4b. It makes it easier for little children to understand COVID-19

opo..madaling maunawaan ang mensahe at naintindihan ng mga bata na pwde I aplay sa pang araw araw na pammuhay.. (yes, it's easy for the children to understand the message which they can apply in their daily lives.)

Most responses showed positive reviews of the quality of the video material. Except for suggestions to improve the sound quality and add more graphic designs, majority of the answers given point towards the material's good quality. In terms of its efficacy as an instructional material, the respondents believe that the puppet-based video material achieved its purpose

to enhance the awareness of Day Care Center pupils regarding the prevention and transmission of Covid-19 and activities to do at home during the quarantine. This is a good observation since it will maximize the utility of video lessons by matching modality to content, i.e., by using both the audio/verbal channel and the visual/pictorial channel to convey new

information, and by fitting the particular type of information to the most appropriate channel (Brame, 2016).

Conclusions

The results of this study show that the exposure to the puppet-based video material significantly improved the level of COVID-19 awareness among preschool children in the Day Care Centers. Before exposure to the puppet-based video material, the pre-schoolers revealed a good understanding of significant concepts related to COVID-19, including its transmission, prevention, and activities to engage in during quarantine. After exposure, they exhibited further improvement in their knowledge as revealed in the post-test results. The low standard deviation proposes that most of the pre-schooler participants responded the same way to the material, emphasizing its effectiveness in communicating the information. Generally, this study puts forward that utilizing well-prepared, interesting, and highly informative technology-enhanced instructional material such as puppet-based videos, is an effective method for advancing COVID-19 literacy among young children.

Children even at a young age must be informed of the dangers of COVID-19. They are among the most vulnerable sectors in our society, and it will be highly beneficial if they can be made to understand the dangers they face. It will UHN Foundation. COVID-19 explained: Kids edition. COVID-19. May 25, 2020. Available from: <https://uhnfoundation.ca/stories/covid-19-explained-kids-edition/instructions> if they understand the reason behind them. Having them watched an educational video intended for children their age is one way to ensure that they get correct information through a channel they can easily relate to. Given this premise, it is advisable for teachers and parents to use highly informative yet interesting and age-appropriate video materials to increase children's awareness of important health and other societal issues. However, guidance while watching is still crucial to ensure that the children are getting correct information at the context the material is intended to be viewed. Though the video in this study is

specifically made for COVID-19 awareness, other videos which tackle other important health and social issues for young children to comprehend better may also be produced.

Acknowledgement

This research was supported by Bulacan State University. We would like to thank the following: Office of the University President; Office of the Vice President for Research and Development and Extension; Research Management Office; Research and Innovation Office (Main Campus); College Research and Development Office; College of Education; and the College Extension Office.

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