

Virtual Education Audiovisual Model of the New Normal Adaptation toward Campus Community Behaviors in Preventing the Spread and Transmission of Covid-19

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ABSTRACT

Background: the number of confirmed or positive cases of Covid-19 has increased significantly. However, the behavior and awareness of the community to work together to fight Covid-19 is still low. Education through various methods and media is an important component in adapting to new normal life. The campus community is expected to be a pioneer in preventing the spread and transmission of covid-19.

Purpose: to develop a virtual education audiovisual model for adapting to new normal, and to assess its effect on the behavior of the campus community in preventing the spread and transmission of covid-19.

Methods: the research designs used Research and Development (R&D) and true - experimental design with control group. The 306 respondents were recruited in this research by randomized. Data collection using a questionnaire assisted by the google form program. Data were analyzed using the Wilcoxon test and the Mann Whitney test.

Results: the results of the study showed that the virtual education audiovisual model with adaptation to new normal had an effect on increasing knowledge ($p < 0.0001$), increasing positive attitudes ($p < 0.0001$), and actions ($p < 0.0001$) of the campus community. The total mean score of campus community behavior was in the range 0-75, before treatment was 65.69 ($SD \pm 5.99$) and after 73.52 ($SD \pm 2.68$) with a difference of 7.83 ($p < 0.0001$).

Conclusion: the virtual education audiovisual model of the new normal adaptation had improved the behavior of the campus community in preventing the spread and transmission of covid-19.

Keywords:

Audiovisual; virtual education; new normal; behavior; campus community.

BACKGROUND

The number of confirmed or positive events of covid-19 continues to increase. The increase in the number of patients who are positive for covid-19 is predicted to experience a surge in the coming period if the Indonesian people are disobedient and undisciplined to the government's appeal to comply with health protocols to prevent the spread and transmission of COVID-19 ([World Health Organization, 2020](#)).

The spread of this disease has had a widespread impact socially and economically. People are encouraged to behave in a clean and healthy life in preventing the transmission of covid-19. However, public awareness to be together to fight against covid-19 is still relatively low. There

are still many people who do not wear masks when they leave house, have not done *social distancing* and *physical distancing*, do not wash their hands, do not do cough ethically well and there are still many who do not pay attention not to leave the house except for important purposes. Low public discipline to comply with health protocols is one of the strongest factors contributing to the increase in the incidence of covid-19 cases in Indonesia.

Since the end of Large-Scale Social Restrictions (PSBB) in a number of regions, Indonesia has now begun to implement a new normal adaptation or Adaptasi Kebiasaan Baru (AKB). The AKB Regulation has been issued by the Minister of Health of the Republic of Indonesia through the Decree of the Minister of Health No: HK.01.07/MENKES/328/2020 on Guidance on prevention and control of Covid-19 in workplaces and shopping centers in support of business continuity in the midst of pandemic. People are asked to return to their activities in the Covid-19 situation, but still pay attention to health protocols. During this pandemic, Indonesians are required to live with a new order of life, which can 'make peace' with COVID-19. People are expected to remain productive and safe from Covid-19 in the pandemic ([Syafri,dkk, 2020](#)).

AKB is applied by considering regional readiness based on the results of epidemiological research in the area. The application of the new normal is only applied by a number of areas that fall into the category of green and yellow zone. The implementation of the rules handling Covid-19 is still not so effective, the rate of spread of Covid-19 still remains high in some areas. Based on the impact of covid-19 that has occurred, handling of spread and prevention of covid-19 requires active participation of all components of society including the campus community ([Aswandi, 2020](#)).

The Ministry of Education and Culture has issued various policies related to new normal adaptation, especially in the field of higher education. Every process in policy making and program implementation in this new normal adaptation era prioritizes the health and safety of students, lecturers, education personnel and the community. Campuses are not expected to become a new cluster in the spread of the Covid-19 pandemic ([Direktorat Jendral Pendidikan Tinggi, 2020](#)). [Ahmad Yurianto \(2020\)](#) said the school of prospective army officers (Scapa AD) in Bandung has become a new cluster of covid-19 virus. Overall, there were 1,262 people who were positive from this cluster. AKB education for the academic community can be done with interesting innovations in order to help the academic community discipline, to behave in carrying out AKB to break the chain of transmission of covid-19 in the campus environment.

AKB demands a transformation of behavior, culture, and values that are eroded in the transformation process. This is where the role of AKB education through various methods and media is needed to provide the right education to the campus community so that they are able to transform well in facing and fighting Covid-19".

Based on the various background explanations, the development of an virtual education audiovisual model that adapts new normal is needed in preventing the spread and transmission of covid-19, and can contribute to preventing the occurrence of new clusters of covid-19 spread in the campus environment.

OBJECTIVE

The objective of the research is to develop a virtual education audiovisual model for adapting to new normal, and to assess its effect on the behavior of the campus community in preventing the spread and transmission of covid-19.

METHODS

This research was conducted through two stages. The first phase used *Research and Development* (R&D) method and continued to the second phase true experimental pre test-post test control group. This design was used to identify the influence of *AKB's virtual education* audiovisual model on campus community behavior in preventing the spread and transmission of covid-19..

The subjects of this study were 306 respondents from campus 1-9 Poltekkes Kemenkes Semarang. Subjects are *randomized* selected and differentiated into intervention groups (virtual education audiovisual models) and control groups (*virtual leaflets*). Treatment is given within a 14-day period. The research instrument uses google form behavioral questionnaire. Statistical tests using *wilcoxon tests*, and *mann whitney tests*.

RESULTS

Stage 1: Development of *AKB's Virtual Education Audiovisual Model on Campus.*

AKB's virtual education audiovisual model has been validated by experts for the feasibility test. Based on the results of validator assessments, the average feasibility score was 76.18% with a decent category. This shows that *AKB's virtual education* audiovisual model in the campus environment is appropriate as a medium of information and education for the campus community.

Stage 2: Application of *AKB Virtual Education Audiovisual Model towards Campus Community Behavior in preventing the spread and transmission of covid-19.*

The results of the study describe the characteristics of respondents between the intervention group and the control group, as shown in table 1:

Table 1. Frequency Distribution of Respondents' Characteristics Based on Education, Occupation, Comorbidities, Network Connections, and Age

Variables	Intervention		Control		<i>p</i> *
	<i>n</i>	%	<i>n</i>	%	
1. Education:					
a. SD	0	0	4	2.6	0.000
b. SMA	4	2.6	10	6.5	
c. D3	72	47.1	65	42.5	
d. S1	34	22.2	22	14.4	
e. S2	41	26.8	52	34	
f. S3	2	1.3	0	0	

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Variables	Intervention		Control		p^*
	n	%	n	%	
2. Faculty:					
a. Lecturer	43	28.1	48	31.4	0.000
b. Administration	50	32.7	54	35.3	
c. Student	60	39.2	51	33.3	
3. Cormobit:					
a. Yes	13	8.5	21	13.7	0.019
b. None	140	91.5	132	86.3	
4. Wifi connection:					
a. Good	104	68	75	49	0.000
b. Sometimes	43	28.1	67	43.8	
c. Poor	6	3.9	11	7.2	
Variable	Mean	SD	Mean	SD	$p^*)$
5. Age	33.92	14.035	34.60	13.975	0.899

* *uji chi-square*; *) *uji independent t-test*

These results indicate that there are differences in respondent characteristics between the intervention group and the control group ($p > 0.05$) on all variables, except the age variable. Descriptions of knowledge levels with assessment ranges of 0-20, attitudes with the lowest score of 10 and the highest score of 50, and actions having a value range of 0-5 in the intervention group and control group are presented in table 2.

Table 2. Distribution of Knowledge Levels, Attitudes, and Actions of the Intervention Group and the Control Group

No	Variables	Intervention		Control	
		Before	After	Before	After
1	Knowledge				
	Mean \pm SD	16.94 \pm 1.30	19.72 \pm 0.83	16.70 \pm 1.44	16.99 \pm 1.37
	Min-max	11 – 19	16 - 20	9 - 20	10 – 20
2	Attitude				
	Mean \pm SD	44.29 \pm 5.35	48.84 \pm 2.29	42.59 \pm 6.44	43.70 \pm 5.28
	Min-max	26 – 50	40 - 50	28 - 50	30 – 50
3	Behavior				
	Mean \pm SD	4.41 \pm 0.54	5.00 \pm 0.00	4.64 \pm 0.53	4.75 \pm 0.45
	Min-max	3 – 5	5 - 5	3 - 5	3 - 5

Based on table 2 the average levels of knowledge, attitudes, and actions in both groups were equally improved, but in the intervention group the improvements in all behavioral variables were greater than those of the control group.

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The Results of AKB's Application of Virtual Education Audiovisual Model on Campus Community Behavior in the Prevention of the Spread and Transmission of Covid-19. Knowledge, Attitudes, & Action of Intervention Groups

Table 3. Knowledge, Attitudes, and Actions Before and After Treatment in the Intervention Group

Variables	Before	After	δ Mean	<i>p-value</i>
Knowledge				
Mean \pm SD	16.94 \pm 1.30	19.72 \pm 0.83	2.78	< 0.0001
Median (min-max)	17(11 – 19)	20(16 – 20)		
Attitude				
Mean \pm SD	44.29 \pm 5.35	48.84 \pm 2.29	4.55	< 0.0001
Median (min-max)	46(26 – 50)	50(40 – 50)		
Action				
Mean \pm SD	4.41 \pm 0.54	5 \pm 0.00	0.59	< 0.0001
Median (min-max)	4(3 – 5)	5(5 – 5)		

Table 3 shows that *the p-value* of the variables of knowledge, attitude, and action is $p < 0.0001$ ($p < 0.05$) which indicates that there are differences in knowledge, attitudes, and actions before and after being given AKB *virtual education* audiovisual model in the campus environment.

Knowledge, Attitudes, and Actions of the Control Group

Table 4. Knowledge, Attitude and Action Before and After Control Group Treatment

Variables	Before	After	δ Mean	<i>p-value</i>
Knowledge				
Mean \pm SD	16.70 \pm 1.44	16.99 \pm 1.37	0.29	< 0.0001
Median (min-max)	17(9 – 20)	17(10 – 20)		
Attitude				
Mean \pm SD	42.59 \pm 6.44	43.70 \pm 5.28	1.11	< 0.0001
Median (min-max)	46(28 – 50)	46(30 – 50)		
Action				
Mean \pm SD	4.64 \pm 0.53	4.75 \pm 0.45	0.11	0.001
Median (min-max)	5(3 – 5)	5(3 – 5)		

Table 4 shows that *the p-value* of the knowledge and attitude variables ($p < 0.0001$) and actions ($p = 0.001$) indicates that there are differences in knowledge, attitudes, and actions before and after education by *leaflet*.

The Results Of Measuring The Behavior Score Of The Campus Community In Preventing The Spread And Transmission Of Covid-19

Table 5. Average Behavior Score of Campus Community Before and After Treatment in the Intervention Group and Control Group

Behavior Score of Campus Community	<i>n</i>	Before		After		δ Mean	<i>p</i> *
		Median (min-max)	Mean \pm SD	Median (min-max)	Mean \pm SD		
Intervention	153	68 (44 -74)	65.69 \pm 5,99	75 (64 – 75)	73.52 \pm 2.68	7.83	< 0.0001
Control	153	67 (48- 73)	63.93 \pm 6.64	67 (51 – 74)	65.43 \pm 5.70	1.5	<0.0001

Table 5 shows that campus community behavior scores of both intervention groups and groups of controls before and after treatment showed differences ($p < 0.0001$).

Knowledge, Attitudes, and Actions of Campus Communities between Intervention Groups and Control Groups.

The results of the influence test to determine the differences in knowledge, attitudes, and actions between the two groups shown in table 6.

Table 6. Knowledge, Attitudes, Actions, and Behavioral Scores between Intervention and Control Groups

Variables	Mean \pm SD		<i>p-value</i>
	Intervention	Control	
Knowledge			
Before	16.94 \pm 1.30	16.70 \pm 1.44	0.09
After	19.72 \pm 0.83	16.99 \pm 1.37	< 0.0001
Different	2.78 \pm 0.47	0.29 \pm 0.07	
Attitude			
Before	44.29 \pm 5.35	42.59 \pm 6.44	0.03
After	48.84 \pm 2.29	43.70 \pm 5.28	< 0.0001
Different	4.55 \pm 3.06	1.11 \pm 1.16	
Action			
Before	4.41 \pm 0.54	4.64 \pm 0.53	< 0.0001
After	5 \pm 0.00	4.75 \pm 0.45	< 0.0001
Different	0.59 \pm 0.54	0.11 \pm 0.08	

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Variables	Mean±SD		<i>p-value</i>
	Intervention	Control	
Behavior			0.010
Before			< 0.0001
After			
Different			

The results of the unpaired data test showed that *the p-value* between the intervention and the control in all variables had significant differences, except the knowledge variables before treatment that there were no meaningful differences between the intervention group and the control group.

DISCUSSION

Influence of AKB's Virtual Education Audiovisual Model on Campus Community Behavior in Preventing the Spread and Transmission of Covid-19.

The results of the paired data influence test showed that *the p-value* on the knowledge of the intervention group is 0.0001 ($p < 0.05$) which means the AKB audiovisual model of *virtual education* has an effect on the knowledge of the campus community. The average knowledge before being given treatment is 16.94 and after that is 19.72 so that there is an average increase in knowledge of 2.78. These results exceeded the control group's knowledge average by a difference in the average increase in knowledge of just 0.29. *Akb's virtual education* audiovisual model application makes it easier for campus communities to obtain information about AKB in the campus environment in an effort to prevent the spread and transmission of covid-19. This model is easily accessible anytime and anywhere. Audiovisual media has a major influence on people's lives, especially internet media. The Internet is the most widely used media, information about the coronavirus, which also teaches the public about *physical distancing* and provides solutions to prevent corona virus. The more sophisticated the technology, the more people are able to access everything easily and do not know one's social status anymore ([Akmal, 2019](#)).

AKB's virtual education audiovisual model in addition to displaying information about AKB in the campus environment with text or narration, also displays AKB implementation videos in an effort to prevent the spread and transmission of covid 19 on campus. Thus, the campus community can have better understanding of the information provided through this virtual education. [Moudy and Syakurah \(2020\)](#) stated that there is a significant relationship between knowledge and attitude ($p = 0.000$) as well as knowledge and individual actions ($p = 0.000$). COVID-19 prevention efforts are influenced by the knowledge of the Indonesian people. Providing specific, valid, and targeted knowledge can improve people's prevention efforts against COVID-19 infection. Based on the description above, it was concluded that knowledge can affect a person's behavior in carrying out AKB. Lack of knowledge about AKB in the campus environment can lead to incorrect perceptions, leading to low public awareness to adhere to health protocols.

The results of the influence test of the paired data on attitude variables in the intervention group showed a *p-value* of 0.0001 ($p < 0.05$) with the average attitude value before treatment was 44.29 and after treatment was 48.84 with a difference of 4.55. The control group only had a difference of 1.11. The results showed that although attitude variables were equally influential on campus

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community behavior in preventing the spread and transmission of covid-19, changes in the attitudes of intervention groups showed more optimal results. Attitude is a person's response to a stimulus that is still closed and has not been realized in the form of action. Attitude is a factor in the occurrence of an action (Notoadmojo, 2012). A positive attitude can lead to positive behavior. COVID-19 prevention efforts can be seen from a person's attitude towards the infection.

This is similar to [Zhong's \(2020\)](#) research which also found a positive attitude in the Chinese population towards COVID-19, namely 97.1% of respondents believe that China can win in the fight against COVID-19. The increase in attitude scores in the study showed that the majority of respondents fall into the category of positive attitudes, which are defined as having a calm, cautious attitude, and increasing efforts to maintain health. The average intervention group attitude score after treatment was 48.84 out of a total score of 50. Research in Chinese society found that almost all respondents (97.1%) have a positive attitude by having confidence that China will win the fight against COVID-19 ([Zhong, 2020](#)).

Attitude is closely related to a person's level of knowledge. A person's attitude towards an object indicates that person's knowledge of the object in question. Based on the theory of adaptation, a good level of knowledge can encourage a person to have good attitudes and behaviors as well ([Silalahi, 2013](#)). Attitudes are formed through a process of self-evaluation that is influenced by various factors, such as cognitive, affective, motivational and behavioral components. According to information integration theory, cognition is a process of knowing, understanding and learning things. Cognition is an interaction system, with existing information potentially affecting a person's beliefs or attitudes ([Anderson, 2016](#)). Attitude cannot be formed without being preceded by obtaining information, or experiencing an object ([Lake, 2018](#)). This is in accordance with the theory stated by Mednick, Higgins and Kirschenbaum that attitude formation is influenced by three factors, namely social influences such as norms and cultures, individual personality character, and information that has been received by the individual ([Tetty, 2015](#)). The results of the study are also in accordance with the theory by Allport that whole attitudes are influenced by knowledge, thoughts, beliefs and emotions..

The results of the intervention group's paired data effectiveness test also showed a *p-value* of 0.0001 ($p < 0.05$) in the action variable. The average action of the campus community before the awarding of akb *virtual education* audiovisual model in the campus environment is 4.41 and after the model application is 5.00 there is a difference of 0.59 from the total score of 5. These results show the influence of *AKB's virtual education* audiovisual model on the actions of the campus community in an effort to prevent the spread and transmission of covid-19.

Based on data from [Moudy and Shakurah research \(2020\)](#) as many as 17.9% of well-informed respondents have good actions regarding covid-19 (82.1%). Statistical test results found a significant relationship between individual knowledge and individual actions regarding COVID-19 ($p=0.000$). Individuals with bad knowledge are at risk for having bad actions by 6,674 times compared to individuals with good knowledge. [Notoatmodjo \(2012\)](#) states that knowledge is a cognitive domain that is very influential in shaping one's actions. Acceptance of new behaviors will last longer when based on knowledge, while they will not last long without being based on knowledge ([Silalahi, 2013](#)). The results of this study are in accordance with [Zhong's research](#)

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(2020) on the same topic in Chinese society. The study found that higher knowledge scores were significantly associated as a protective factor against bad behavior against COVID-19.

The results of the accumulation of each behavioral component are shown in the behavior score of the campus community in preventing the spread and transmission of covid-19, in the intervention group the average score before and after treatment with a difference in score of 7.83 ($p < 0.0001$). The mean difference in behavioral scores was much larger than the control group, which only reached a difference of 1.5 ($p < 0.0001$). Although, the treatment in both groups had an influence on increasing the behavior scores of the campus community in preventing the spread and transmission of COVID-19, the average behavioral score for the intervention group had a higher mean score difference. This shows that the IMR virtual education audiovisual model on campus has a better effect than education that only uses virtual leaflets.

The results of the unpaired data test showed that the p -value between the intervention and control groups on the knowledge, attitude, and action variables after treatment was $p < 0.0001$. The p value < 0.05 which indicates that the AKB virtual education audiovisual model is more influential in increasing the knowledge, attitudes, and actions of the campus community in preventing the spread and transmission of COVID-19 compared to virtual leaflets.

The AKB virtual education audiovisual model has several advantages over leaflets, including AKB virtual education audiovisuals can be easily obtained, there are videos that present AKB life on campus, can be opened and used anytime and anywhere, and are practical to carry anywhere because they are included in the link. Google form smartphone which is always carried everywhere by today's society. While the leaflet media, although it is also provided in the google form link, the information contained in the leaflet is limited because it is only in the form of leaflets.

The IMR virtual education audiovisual model on campus also has other advantages besides displaying IMR information. This model application displays the implementation of AKB directly on campus, so that in addition to receiving written information, users also get a clearer picture of information from videos. Audiovisual virtual education materials for IMR include: 1) preparation of the academic community, online lectures, and infrastructure, 2) implementation of: entry & exit points, workspaces, laboratories, classrooms, libraries, elevators, parking lots, lobbies, places of worship, and canteens, 3) supervision: implementation of health protocols, and health status.

The educational process that involves several senses will be more easily accepted by the target. Computer Technology Research (CTR) revealed that a person can remember 20% of what is seen and 30% of what is heard, and 80% of what is seen and heard when done simultaneously (Widiyastuti, Slamet & Radia, 2018). Information manipulation theory by MC Comack states that when information sources use certain methods to increase the amount of information provided, then someone accesses it repeatedly, the information will be more easily accepted (Eldredge, et al, 2016).

The results of this study are not much different from the research of Lewis et al (2010) which states that intervention with mobile phones can encourage someone to take action to prevent disease. The use of cellular technology in health makes it easier for health workers to provide intervention and disease prevention more effectively.

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The use of the AKB virtual education audiovisual model that contains education and information related to IMR in the campus environment can increase the knowledge, attitudes, and actions of the campus community in preventing the spread and transmission of COVID-19 in the campus environment. Based on the theory of behavior change, behavior will be formed starting from the stage of knowledge, attitude, and until it brings up an action. If it is based on good knowledge and a positive attitude, this behavior can last a long time.

The application of the IMR virtual education audiovisual model on campus increases the knowledge of the campus community because the information is provided in complete and easy-to-understand language so that information about IMR on campus can be conveyed properly and lead to a good understanding as well. Good knowledge can make a person to take a positive or negative attitude. A positive attitude will encourage positive action. Users can access this model application repeatedly so that the behavior can last a long time. The application of the virtual education audiovisual model will generate a good response in the campus community so that behaviors are formed that encourage them to always comply with health protocols to prevent the spread and transmission of COVID-19, as well as to prevent the emergence of Covid clusters in the campus environment.

CONCLUSION

The AKB virtual education audiovisual model on campus includes AKB implementation practices: entry & exit points, workspaces, laboratories, classrooms, libraries, elevators, parking, lobbies, places of worship, and canteens, as well as supervision: implementation of health protocols, and health status. The application of the IMR virtual education audiovisual model on campus has an effect on improving the behavior of campus communities in preventing the spread and transmission of COVID-19. The AKB virtual education audiovisual model on campus is expected to become standard operating procedures for AKB in the campus environment.

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