Metafora: Education, Social Sciences and Humanities Journal **p-ISSN: 2407-1757**
Vol. 5, No.2, November 2021 **e-ISSN: 2580-5177**

The Effect of YouTube Nihongo Mantappu Exposure toward Dharma Wanita 8 Waru Middle School Students' Interest in Learning Mathematics (Study on The Content of Battle Matematika)

Jihan Rifdah Yumna
Communication Program of Social Sciences and Law Faculty Universitas Negeri Surabaya
e-mail: jihan.17041184039@mhs.unesa.ac.id

Anam Miftakhul Huda
Communication Program of Social Sciences and Law Faculty Universitas Negeri Surabaya
e-mail: anamhuda@unesa.ac.id

Abstract
This study looks at the effect of YouTube Nihongo Mantappu exposure toward Dharma Wanita 8 Waru Middle School students' interest in learning mathematics. The applied method was an experimental method with a questionnaire used as a research instrument. The type of experiment used is The One Group Pretest-Posttest Design. This study used all 7th, 8th, and 9th-grade students of Dharma Wanita 8 Waru Middle School as the population. The sample in this study amounted to 54 students of Dharma Wanita 8 Waru Middle School, which were determined through the total sampling technique because the population was less than 100 people. The data analysis method used is the Paired Sample T-Test, tested using SPSS Statistics 26. The hypothesis formulated in this study is accepted. This study showed an increase in Dharma Wanita 8 Waru Middle School students' interest in learning mathematics after receiving YouTube Nihongo Mantappu exposure.

Keywords: ***Media Exposure, YouTube Nihongo Mantappu, Interest in Learning Mathematics, Mathematics Battle***

1. INTRODUCTION

Media exposure talks about the intensity of receiving messages from the media by the audience. Media exposure can be interpreted as a form of audience attention to media messages, both individually and in groups, such as reading or listening to what is displayed by a media (Shore 1985). When the audience is exposed to a media message, response and thought occur in the audience (Belch and Belch 2007). The messages that have been presented in such a way and then delivered by the mass media impact the audience so that it triggers the formation of interests, perceptions, changes in attitudes and behavior (Puspitasari 2018).

Frequency, duration, and attention are three media use that are measured in media exposure. The media exposure applies to old media and new media. Media exposure to new media means that information from new media hits the audience, which is also referred to as mass communication because of the internet network that allows global audience reach (McQuail 2011).

As a new media technology, the internet brings mass communication activities that are specifically designed to reach as many masses as possible (McQuail 2011). The internet as a new media is also related to the processing, exchange, and storage of media messages, so it is not only involved in producing and distributing messages (McQuail

2011). Social media is a form of new media that has become a new way of communicating for the community, also influential in various aspects of life (Setiadi 2016).

Respondents in a survey by the Asosiasi Penyelenggara Jasa Internet Indonesia (APJII) released in November 2020 stated that social media were their main reason for accessing the internet (Ludwianto 2020). Reporting from the katadata.com page, for the ranking of social media with the most users, the first position is occupied by YouTube with a total of 88% users ((Jayani 2020)). In the APJII survey, 61% of respondents often use the YouTube platform to watch movies, listen to music, and exercise (Ludwianto 2020).

Currently, the social media with the highest number of users is YouTube (Jayani 2020). By providing facilities for users to upload and have their channel and free access to download videos, YouTube has become the most popular video-sharing platform in the world. YouTube on its page says, 2 billion more users log into YouTube every month, and people watch more than 1 billion hours of videos resulting in billions of views every day (YouTube n.d.).

The popularity of YouTube encourages the emergence of a new profession, a YouTuber. Reporting from the Kumparan page, YouTube Creator & Artist Development Manager for India & SEA, Rajant Meshram, monitors Indonesian channels, and every year, from 2016 to 2019, there is a significant increase in the number of subscribers (Fikrie 2019). Rajant explained that the content creators' growth in Indonesia is getting more extraordinary every year. In three years, the reach of 1 million subscribers has dramatically increased. The diverse and exciting ideas of the content creators are also the reason for this happening (Fikrie 2019). In addition, reported on the CNN Indonesia page, YouTube shows data that Indonesia has 200 channels with 1 million subscribers as of March 2019 (CNN Indonesia 2019). There has been a 5-fold increase since March 2018. Director of YouTube Global Creator & Artist Development, Chris Schremp, revealed that 13 Indonesian YouTube channels reach one million subscribers every month (CNN Indonesia 2019).

One of the YouTube channels in Indonesia that has millions of subscribers is YouTube Nihongo Mantappu. YouTube Nihongo Mantappu, as of September 12, 2021, has 7.36 million subscribers with a total of 628 videos (Nihongo Mantappu 2021). As the owner of this channel, Jerome Polin joined YouTube on December 12, 2017, by uploading his first video entitled "Selamat Datang di Nihongo Mantappu!" on December 23, 2017 (Nihongo Mantappu 2021).

Jerome Polin Sijabat is an Indonesian student currently studying Applied Math at Waseda University, Japan. Jerome was also known as an outstanding student and has won several Olympics while he was in high school. As a YouTuber, Jerome is known for his intelligence in mathematics. On his YouTube channel, he uploads videos of Battle Pengetahuan (Knowledge Battle), Belajar Bahasa Jepang (Learn Japanese), and Vlog Kehidupan di Jepang (Life Vlog in Japan).

One of YouTube Nihongo Mantappu's video playlist is "Battle Nihongo Mantappu" which contains various Battle Pengetahuan videos, such as "Battle Mahasiswa Rantau", "Battle Tes IQ", "Battle Bahasa Jawa", "Epic Math Battle", and many other video themes. As of September 12, 2021, there are 33 videos in the Battle Nihongo Mantappu playlist that have received millions of views in each video (Nihongo Mantappu 2021). YouTube Nihongo Mantappu is one of the YouTube channels that provide many educational messages to its audience, especially related to mathematics

and studying in Japan. Various themes of the Battle Pengetahuan video have been uploaded, and the most frequently uploaded is the Battle Matematika (Math Battle) video.

The Battle Matematika is a video with the concept of a math quiz between Jerome Polin and one or more other people. Jerome and his battle opponents will solve some math problems. The math quizzes come from various levels, such as Middle School math questions, math questions for Calon Pegawai Negeri Sipil (CPNS) selection, Math Olympiad questions, National Examination questions, and others. The video also shows how to solve math problems used as quizzes, so viewers can also learn math simultaneously.

Jerome, the owner of YouTube Nihongo Mantappu, creates educational content through the Battle Pengetahuan video to get entertainment and increase their knowledge. Thus, learning can be more fun. Such as the Battle Matematika video, which can be a medium to increase students' knowledge outside of the mathematics learning materials taught at school. Every video in the Battle Nihongo Mantappu playlist, including the Battle Matematika video, has attracted many Indonesians' attention by getting millions of views.

Audiences who receive a lot of media exposure will tend to respond based on their attention and understanding of the content from the displayed message (Yulianti 2019). There will also be an even more significant impact on the audience (Yulianti 2019). Something that tends to be seen and becomes a concern for individuals means following their wishes or needs, which will generate interest (Darmadi 2017). Darmadi (2017) states interest as a condition when an individual is interested in something, which is then followed by further curiosity. Through YouTube Nihongo Mantappu exposure, we will see its effect on Dharma Wanita 8 Waru Middle School students' interest in learning mathematics.

Many teenagers hate mathematics, and their interest in learning decreases ((Frenzel et al. 2019)). Likewise, Dharma Wanita 8 Waru Middle School requires increasing students' interest in learning mathematics. Based on the data released by the Pusat Penilaian Pendidikan Kementerian Pendidikan dan Kebudayaan (Puspendik Kemdikbud), it can be seen that during the 5 years, 2015-2019, the average Mathematics national examination scores for Dharma Wanita 8 Waru Middle School students are the lowest compared to the other subject test scores. Furthermore, the average Mathematics national examination scores for Dharma Wanita 8 Waru Middle School students are lower than the average Mathematics national examination scores in Sidoarjo District (Kemdikbud 2019).

Students' interest in learning mathematics is significant considering the role of mathematics in every dimension of life. Mathematics supports various aspects of life and is essential to support the success of communication and information in technology (Rahayu and Kusuma 2019). The existence of students' interest in learning mathematics will make them learn mathematics well so that it is easier for students to think critically, logically, creatively, and carefully (Sirait 2016). Studying with the support of students' interests can trigger them to study harder than studying without interest (Wisata and Harini 2016).

Two psychological factors, interest to learn and motivation to learn, have been empirically proven to significantly influence student achievement (Kpolovie, Joe, and Okoto 2014). Students' interest in learning determines the degree of student activity during the learning process. Students will find it difficult to study well if the lesson does

not attract them (Sirait 2016). The positive influence of interest impacts academic knowledge and specific fields of science on individuals (Hidi 2006). Students will try harder to do something that interests them through the interest to learn.

This research uses the media exposure variable as the independent variable (X) and the interest to learn variable as the dependent variable (Y). The variable of media exposure uses three indicators according to Rosengren (1974): frequency, duration, and attention. While the variable interest to learn uses three indicators according to Darmadi (2017): interests, feelings, and desires.

This study aims to determine whether YouTube Nihongo Mantappu exposure affects Dharma Wanita 8 Waru Middle School students' interest in learning mathematics. Through this research, it is hoped that the Mass Communication knowledge will increase, especially regarding the influence of new media exposure toward interest in learning mathematics, so that this research can be a reference in studying and research in the Communication Science field. This research is also expected to be useful for YouTube Nihongo Mantappu to evaluate and improve the quality of the Battle Matematika video.

2. RESEARCH METHODS

The paradigm in this study uses the positivism paradigm, which sees a social fact as reality (Pujileksono 2016). This research belongs to the type of quantitative research where the relationship between symptoms is causal and is based on the assumption that a symptom can be classified (Sugiyono 2019). Quantitative research is carried out by collecting data on numbers and sentences, then converting it into numerical data and analyzing it to obtain scientific results (Sugiyono 2019).

The research was conducted using experimental methods. In experimental research, there are several main factors, including hypothesis, independent variables, dependent variables, and subjects (Sugiyono 2019). The main principle of this type of research is the existence of treatment as a form of manipulation, which is the independent variable and followed by observation of the variable that provides the response, which is the dependent variable.

The type of experiment used is The One-Group Pretest-Posttest Design, where a group is given a pre-test before receiving treatment, then a post-test is given (Sugiyono 2019). The comparison of the state of the sample group before and after being given treatment makes the results of this experiment more accurate (Sugiyono 2019). The experiment was carried out with the following design:

1. Respondents consisting of Dharma Wanita 8 Waru Middle School students included 20 students of grade 7, 14 students of grade 8, and 20 students of grade 9 that were collected in one place.
2. Respondents fill out a pre-test questionnaire that will indicate the condition of their interest in learning mathematics before receiving the Battle Matematika video's exposure.
3. Treatment is given to respondents by showing the Battle Matematika video as a form of media exposure.
4. Respondents fill out a post-test questionnaire that will indicate the conditions of media exposure they receive and the condition of their interest in learning mathematics after receiving the Battle Matematika video's exposure.

The data in this study are primary data collected through respondents' answers to closed-type questionnaires, which were distributed directly. This study uses a Likert

Scale as a type of instrument that consists of two items, including favorable and unfavorable items. Each item consists of five alternative answers, included strongly disagree, disagree, neutral, agree, and strongly agree.

This research was conducted at Dharma Wanita 8 Waru Middle School directly, involving 54 students as the population. The sampling technique used in this research is the total sampling technique, which is included in the type of non-probability sampling. In this study, the selected sample is the entire population of 54 students. This sampling technique provides the possibility of obtaining complete data because the sample is able to describe all the characteristics of the population (Kriyantono 2020).

The validity test was carried out by connecting each item score with the total score using the Pearson's Product Moment correlation, where the total score was taken from the sum of the item scores on the related instrument (Kurniawan and Puspitaningtyas 2016). While the reliability test was carried out by using an internal consistency reliability approach with Cronbach's Alpha to test how well the relationship between items on the research instrument was (Kurniawan and Puspitaningtyas 2016).

The data analysis technique was carried out through descriptive analysis by looking at the value of the Respondents' Achievement Level on each dimension of each variable. The hypothesis was tested using the Paired Sample T-Test then continued by calculating the value of the N-Gain score to measure the effectiveness of the treatment application.

3. RESULT AND DISCUSSION

Result

1. Validity and Reliability Test

The research instrument was tested on 54 trial samples with the following results:

Table 1.
Validity Test

Variable	Results	Items	Total
Media Exposure	Valid	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16, 17,18,19,20,21	21
	Invalid	-	0
Interest to Learn	Valid	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16, 17,18,19,20,21,22, 23,24,25,26,27,28, 29,31,32,33	32
	Invalid	30	1

Based on the results of the media exposure variable validity test, it was found that all 21 test items had met the score for use in the study and were declared valid. While the results of the interest to learn variable validity test found 32 items from 33 test items that met the score for use in research and were declared valid. Each item on the statement is considered to represent every dimension in the media exposure variable and the interest to learn variable.

The reliability of the research instrument was tested, and the following results were obtained:

Table 2.
Reliability Test

Variable	Cronbach's Alpha	Reliability Level
Media Exposure	0,883	Very High
Interest to Learn	0,910	Very High

The results of the media exposure variable reliability test showed a reliability coefficient value of 0.883. Meanwhile, the results of the interest to learn variable reliability test showed a reliability coefficient value of 0.910. With these results, the items on the media exposure variable and the interest to learn variable is declared reliable because the Cronbach's Alpha value is more than 0.6, and both have a very high level of reliability.

2. Characteristics of Respondents

a. Respondents' Gender

Table 3.
Respondents' Gender

Gender	Frequency	Percentage
Male	32	59%
Female	22	41%

The data show that there are more male respondents than female respondents. The gender data is in accordance with the gender data of 7^{th}, 8^{th}, and 9^{th}-grade students of Dharma Wanita 8 Waru Middle School.

b. Respondents' Age

Table 4.
Respondents' Age

Age	Frequency	Percentage
12 years old	6	11%
13 years old	13	24%
14 years old	12	22%
15 years old	21	39%
16 years old	2	4%

The age of the respondents in this study is included in the classification of adolescents according to WHO. Researchers from the University of Oxford, quoted from the Kumparan page, found that adolescent students who continued to study mathematics had higher levels of important brain chemicals compared to adolescent students who stopped learning mathematics (Nugraha 2021). Study leader and professor of Cognitive Neuroscience at the University of Oxford, Roi Cohen Kadosh, said that adolescence is the most important period in life that is related to the brain and cognitive changes (Nugraha 2021).

So it is important for students who are still in their adolescence to learn mathematics well. To be able to learn mathematics well, it is necessary to have

the interest to learn. In learning mathematics, the high interest in learning mathematics will encourage students to learn because they feel interested in learning mathematics. On the other hand, if students have a low interest in learning mathematics, they will be lazy to learn mathematics subjects (Feronita, Oktariani, and Widodo 2018).

c. Respondents' Class

Table 5.
Respondents' Class

Class	Frequency	Percentage
7^{th}	20	37%
8^{th}	14	28%
9^{th}	20	37%

The data show that most of the respondents are from grades 7^{th} and 9^{th}. The data from the respondents' classes are in accordance with the data of grades 7^{th}, 8^{th}, and 9^{th} of Dharma Wanita 8 Waru Middle School.

3. Description of Media Exposure Variables and Interest to Learn Variables

The descriptive analysis provides an overview of the research data distribution. Each variable in this study has several dimensions. The results of the descriptive analysis will show the Respondents' Achievement Level on each dimension of a variable.

Table 6.
Descriptive Analysis of Media Exposure

Dimensions	Score	Respondents' Achievement Level	Category
Frequency	424	79%	Good
Duration	403	75%	Good
Attention	3122	68%	Good

The data show that the three dimensions of the media exposure variable have the Respondents' Achievement Level values in the good category. The frequency dimension has the highest Respondents' Achievement Level value of 79%. This shows that the respondents in this study have a good frequency of media exposure.

Table 7.
Descriptive Analysis of Interest to Learn

Dimensions	Score	Respondents' Achievement Level	Category
The Pre-Test Data			
Interests	2100	49%	Not Good
Feelings	818	50%	Not Good
Desires	1378	51%	Moderate
The Post-Test Data			
Interests	3024	70%	Good
Feelings	1123	69%	Good
Desires	1895	70%	Good

Percentage Increase	
Interests	21%
Feelings	19%
Desires	19%

All dimensions of the interest to learn variable show the Respondents' Achievement Level value that tends to be low in the pre-test data, where the data was taken with the aim of measuring students' interest in learning mathematics before watching the Battle Matematika video. Meanwhile, all dimensions of the interest to learn variable experienced a percentage change and showed the Respondents' Achievement Level value that tended to be high in the post-test data. The post-test data was taken with the aim of measuring students' interest in learning mathematics after watching the Battle Matematika video.

The highest increase was in the interest dimension with a difference of the Respondents' Achievement Level percentage value of 21%. The dimensions of feelings and desires also show an increase with a difference of the Respondents' Achievement Level percentage value of 19%. Before watching the Battle Matematika video, students have the desire to actively participate in mathematics learning and the desire to achieve the best grades in mathematics. After watching the Battle Matematika video, the desire increased even more. This increase was also followed by an increase in their interest in learning mathematics.

4. Hypothesis Testing

The hypothesis of this research is that there is an increase in Dharma Wanita 8 Waru Middle School students' interest in learning mathematics after receiving YouTube Nihongo Mantappu exposure. The hypothesis was analyzed through the Paired Sample T-Test used in the SPSS Statistics 26 application. The Paired Sample T-Test is useful to see whether or not there is a difference in the average between two paired-sample groups.

Table 8.
Paired Sample T-Test
Paired Samples Test

		Mean	Std. Deviation	Std. Error Mean
Students' Interest in Learning Mathematics	Pre Test - Post Test	-32,333	14,662	1,995

95% Confidence Interval of the Difference				
Lower	Upper	t	df	Sig. (2-tailed)
-36,335	-28,331	-16,205	53	0,000

The results of data processing show the value of Sig. (2-tailed) of 0.000, which means less than 0.05. The results of this test indicate that H_0 is rejected and H_a is accepted, so it can be concluded that there was an increase in Dharma Wanita 8 Waru Middle School students' interest in learning mathematics after receiving YouTube Nihongo Mantappu exposure. The independent variable (media exposure) has a significant effect on the dependent variable (interest to learn).

Table 9.
N-Gain Score Test

Descriptives

				Statistic	Std. Error
N Gain Score	Sample Related	Mean		0,4060	0,02527
		95% Confidence Interval for Mean	Lower Bound	0,3553	
			Upper Bound	0,4567	
		5% Trimmed Mean		0,4070	
		Median		0,3588	
		Variance		0,034	
		Std. Deviation		0,18569	
		Minimum		0,00	
		Maximum		0,78	
		Range		0,78	
		Interquartile Range		0,30	
		Skewness		0,127	0,325
		Kurtosis		-0,570	0,639

Hypothesis testing is continued by testing the N-Gain Score, which aims to determine the treatment effectiveness, which was previously unknown in the Paired Sample T-Test. Based on the test results, the average value of the N-Gain Score is 0.4060. Theoretically, the average value indicates a moderate level of influence or effectiveness, which is in the range of $0.3 < g \leq 0.7$. It can be concluded that Dharma Wanita 8 Waru Middle School students' interest in learning mathematics has a moderate increase after receiving YouTube Nihongo Mantappu exposure. In this study, it was also found that 52 respondents out of a total of 54 respondents experienced an increase in the average value of post-test data from pre-test data. While the other two respondents did not experience an increase or decrease in the average value of the post-test data from the pre-test data.

Discussion

The educational content in digital media is a very important part of positive content to be developed. YouTube is one of the social media platforms for the development of educational content. In terms of information, YouTube as a social media makes it easy for the audience to get a variety of information for free (Stellarosa, Firyal, and Ikhsano 2018).

YouTube Nihongo Mantappu is a popular Indonesian YouTube channel with educational content in the edutainment genre. This YouTube channel, which has 7.36 million subscribers, has the most famous educational content, the Battle Nihongo

Mantappu. The entertainment element in the educational video is applied through the concept of battle. Jerome Polin as the channel owner most often uploads the Battle Matematika video that matches his educational background in mathematics.

The Battle Matematika video shows its ability to attract the attention of the Indonesian as an audience through the millions of views obtained on each video. Even most recently, the Battle Matematika video uploaded on November 7, 2021, entitled "Tes Matematika YouTuber dan Influencer Indonesia! (Fadil Jaidi, Bintang Emon, Gadgetin, etc.)" managed to become trending one on YouTube. The video also got a total of 2 million views in just 24 hours (Nihongo Mantappu 2021). The Battle Matematika video can be a fun digital educational medium for students to increase their knowledge in addition to math subjects at school.

Mass media such as YouTube is one of the various things that can influence a person's interest (Hartanti 2018). The Battle Matematika video can affect students' interest in learning mathematics because interest is included in the effective effect of media exposure. Students as respondents in this study received media exposure and gave responses based on their attention and understanding of the message content in the Battle Matematika video. The messages in the Battle Matematika video will have an impact on students, which triggers the formation of interest in learning mathematics.

In the results of the media exposure variables descriptive analysis, it is known that the frequency dimension gets the highest Respondents' Achievement Level value of 79%. In this study, the frequency dimension looks at how many the Battle Matematika video were watched by students during the experiment. The frequency of using the media is seen from the number of routines or how often an audience uses a media (Putri 2020). The data in this study found that the majority of students watched all the videos that were shown so that they had a good frequency of media exposure.

Based on the results of the descriptive analysis on the interest to learn variable pre-test data, it shows that the dimension of desire to get the highest Respondents' Achievement Level value is 54%. While the results of the descriptive analysis on the interest to learn variable post-test data showed that the dimensions of interest and desire got the highest Respondents' Achievement Level value of 70%. Before and after watching the Battle Matematika video, students have the desire to actively participate in learning mathematics. Students also want to get the best grades in mathematics. The desire even increased after watching the Battle Matematika video.

Interest shows the concentration occurrence of thoughts, feelings, and desires towards an object that attracts attention (Darmadi 2017). A person's active attitude, when involved in a job or situation, is largely determined by their interest (Darmadi 2017). Students show more attention to punishment at the end of the Battle Matematika video, which is included in the entertainment element. They find the punishment to be an interesting part. Interest is the beginning of the emergence of interest, which in turn will encourage someone to pursue all things related to that interest (Darmadi 2017). The level of students' interest in mathematics is also equal to their desire to participate and get the best grades.

The increase in students' interest in learning mathematics is even becoming the highest increase compared to the increase in students' feelings and desires in learning mathematics. The increase in students' feelings and desires reached a percentage of 19%. While the increase in students' interest reached a greater percentage of 21%. The main factor that drives an increase in students' interest is the entertainment element in the Battle Matematika video. Students who are in their adolescence are very fond of

entertainment and often access it on new media platforms. Based on the results of a study by the Kementerian Kominfo Republik Indonesia involving children and adolescents aged 10-19 years, it was concluded that one of the three main motivations for children and adolescents in accessing the internet is for entertainment which is driven by personal needs (Kominfo 2014).

Entertainment is one of the necessities in the midst of busy daily activities (Naja 2017). Entertainment has an important function to relieve boredom and fatigue (Naja 2017). Everyone needs entertainment, so do students who want entertaining shows. When students receive media exposure according to their needs, it will appear interested in them. The interest that arises in students is in accordance with the media exposure content they receive.

The Battle Matematika video fulfills the needs of students because the concept of this show contains an element of entertainment. When students get what they need, they can be more open by giving a positive response, and it becomes easier to understand the Battle Matematika video's content. In this study, through the entertainment element in the Battle Matematika video, students' interest in learning mathematics emerged. The increase in students' interest in learning mathematics occurs as students' interest increases while receiving the Battle Matematika exposure.

The hypothesis in this study is accepted, then there was an increase in Dharma Wanita 8 Waru Middle School students' interest in learning mathematics after receiving YouTube Nihongo Mantappu exposure. The role of the Battle Matematika exposure in increasing students' interest in learning mathematics is supported by the statement that media messages have an influence on the audience so that it triggers various things, one of which is interest (Puspitasari 2018). The results of this study are supported by references from Yulianti's research (2019) which states that the more someone watches the Running Man show, the more that person consumes messages related to South Korean culture that affect their interest in learning South Korean culture.

The Battle Matematika video is equipped with Indonesian subtitles to make the audience easier understand the video messages. As in the video that was first shown during the treatment process with the title "Battle Matematika Lawan Teman Satu Jurusan Kampus (Ronde 2)", where Jerome's campus friend was the guest star was not an Indonesian. The video has received a total of 629 thousand views as of November 11, 2021, since it was uploaded on April 18, 2020 (Nihongo Mantappu 2021).

This 13 minutes 28-second video is equipped with how to solve every math problem used in the battle. The solution method is given in a written form which is a screenshot and displayed for 2 seconds, not a direct verbal explanation from Jerome or Yuuki. This is a drawback in this Battle Matematika video. The explanation given in the Battle Matematika video can increase students' understanding of mathematics. Through this understanding, students will think about the important things about learning mathematics. The emergence of thoughts related to these interests will trigger the growth of interest to learn (Darmadi 2017).

The treatment was continued by showing the second Battle Matematika video uploaded on July 25, 2020, entitled "Battle Matematika Lawan Anak Kelas 3 SD Juara Olimpiade Internasional". As of November 11, 2021, the video has received a total of 9.71 million views (Nihongo Mantappu 2021). This video uses the concept of an accuracy competition, not a quick competition. So, a score will be obtained for the battle participant who answered correctly.

The previous Battle Matematika video made it easy for the audience with an Indonesian translation, as well as this second video which is equipped with an Indonesian translation. The math quizzes used in the battle is the International Elementary School Olympiad questions which are written in English. So, this video displays math problems that have been translated into Indonesian. The conversation between participants was not equipped with an Indonesian translation because Vezia, who came from Indonesia, spoke in Indonesian with Jerome and Billy.

This 13 minutes 41-second video provides a complete explanation of how to solve math problems. Jerome, Vezia, and Billy, as participants in the battle, discussed how to solve problems orally. Explanations are also displayed in Indonesian written form. The math problems in this video that have more than one solution are explained in detail. As in the last question, the battle participants explained three ways of solving, included the manual method, the Jerome method, and the Gauss method.

The detailed explanation given makes it easier for students as audiences to receive and understand the messages conveyed. Audiences who receive media exposure will tend to respond based on attention and understanding of the broadcast message (Yulianti 2019). Good reception and understanding of messages are needed so that students can receive good exposure and give positive responses.

The last video that was shown during the treatment process was a video entitled "Challenge Jessica Jane Ngerjain Soal Matematika + Makan Pedes! Ternyata…" which invited YouTuber, Jessica Jane. This 21 minutes 7-second video was uploaded on January 12, 2021, and has received a total of 4.19 million views as of November 11, 2021 (Nihongo Mantappu 2021). The presence of Jessica Jane as Jerome's battle opponent in the third video that was shown, attracted the students' attention because they already knew Jessica as a YouTuber. A student's interest can arise due to the interest and feelings of liking (Santoso & Christiana, 2019).

The presence of Jessica Jane as Jerome's battle opponent represented the students as an audience who did not study mathematics or did not have a background in mathematics like Jerome. When working on math problems, Jessica was confused several times and needed a 'clue' from Jerome. Jerome also slowly gave an explanation to Jessica so that the students who were watching could also understand more how to solve math problems.

The concept of this third Battle Matematika video is different from the previous two videos. In this video, Jerome does not participate in completing the math quiz. Jerome challenges Jessica to solve a math problem. Jessica will get a score every time she successfully answers a math problem, and Jerome will get a punishment. Vice versa, if Jessica fails to answer a math problem, Jessica will get punished, and Jerome will get a score.

The punishment in this video is given for every single question, not at the end of the battle. Eating spicy food is a different punishment than other Battle Matematika videos that use push-ups as a punishment at the end of the video. Jerome and Jessica's funny expressions when they feel spicy, add an element of entertainment to this video that attracts students' attention. Interest is related to one's feelings because interest is a concern that contains elements of feeling (Darmadi 2017). When students pay full attention to the Battle Matematika video, students find the video interesting, and students will feel happy when they see the video. The feeling factor supports the emergence of interest in a person (Izzatunihlah 2017). Interest tends to be related to

paying attention and remembering something continuously, where this happens because they feel happy about something.

The difference between this study and previous research is that this study looks at the effect of media exposure to students' interest in learning mathematics, which later found the results that there was a significant effect of YouTube Nihongo Mantappu exposure to Wanita 8 Waru Middle School students' interest in learning mathematics. This study also has limitations to avoid misinterpretation of the title. The Battle Matematika video that is shown contains a math quiz with Middle School math questions in Japan, International Mathematics Olympiad questions, and Middle School National Examination questions in Indonesia, so that the level of difficulty of the questions varies in each video. Another limitation is that based on observations, respondents paid full attention to the Battle Matematika video for about 32 minutes out of a total viewing duration of 48 minutes.

The increase in students' interest in learning mathematics after receiving YouTube Nihongo Mantappu exposure shows that there was an effect of YouTube Nihongo Mantappu exposure to Dharma Wanita 8 Waru Middle School students' interest in learning mathematics. Based on the results of the study, the researcher recommends YouTubers produce more educational content, especially content in the edutainment genre. Through a variety of educational content, Indonesian will have many choices of useful positive shows. Indonesian YouTube content will also have better quality in the future.

5. CONCLUSION AND SUGGESTION

Based on the results of hypothesis testing with Paired Sample T-Test processed through SPSS Statistics 26, it can be concluded that the hypothesis formulated in this study is accepted. The Sig. (2-tailed) shows a value of 0.000 which means less than 0.05, which theoretically indicates that H_0 is rejected and H_a is accepted. There was an increase in Dharma Wanita 8 Waru Middle School students' interest in learning mathematics after receiving YouTube Nihongo Mantappu exposure. It is known through the N-Gain Score shows a value of 0.4060 which is in the range of $0.3 < g \leq 0.7$, students' interest in learning mathematics which was reviewed based on the concept of interest to learn by Darmadi (2017) with three dimensions (interests, feelings, desires) has a moderate rate of increase after receiving YouTube Nihongo Mantappu exposure which was reviewed based on the concept of media exposure by Rosengren (1974) with three dimensions (frequency, duration, attention).

The content creators can develop content in the edutainment genre by exploring fresh new concepts to become educational content on YouTube. YouTube Nihongo Mantappu can upload more of the Battle Matematika video with a regular schedule. Content of battle can be uploaded even more by displaying a variety of different themes than before. YouTube Nihongo Mantappu is expected to always provide a short verbal explanation on how to solve math problems in every Battle Matematika video. The development of educational content on YouTube will improve the quality of shows on digital media for the public as an audience.

Dharma Wanita 8 Waru Middle School can recommend the Battle Matematika video to students as learning materials other than the material given at school. The teachers at school can also show the Battle Matematika video to watch together so that learning activities become more varied and fun. As a video that belongs to the

edutainment genre, to increase knowledge about mathematics as well as get entertainment, students can watch the Battle Matematika video at home independently.

Further research can be carried out using two or more independent variables by adding one or two independent variables in addition to media exposure to examine its effect on the audience's interest to learn so that the results obtained become more detailed. Further research can also use the other dependent variables so that research related to media exposure becomes more diverse.

REFERENCES

Belch, George Edward, and Michael A. Belch. 2007. *Advertising and Promotion, and Marketing Communications*. United States: Person Educate Inc.

CNN Indonesia, Tim. 2019. "YouTube Catat Kenaikan Pengguna Gold Hingga Lima Kali Lipat." *Www.Cnnindonesia.Com2*. Retrieved October 21, 2020 (https://www.cnnindonesia.com/teknologi/20190430140843-185-390824/youtube-catat-kenaikan-pengguna-gold-hingga-lima-kali-lipat).

Darmadi. 2017. *Pengembangan Model Metode Pembelajaran Dalam Dinamika Belajar Siswa*. Yogyakarta: Deepublish.

Feronita, Yesinta Lusiana, Shinta Oktariani, and Sri Adi Widodo. 2018. "Hubungan Antara Kenakalan Remaja, Minat Belajar, Dan Motivasi Belajar Dengan Hasil Belajar Matematika Siswa." *Prosiding Seminar Nasional Etnomatnesia* 667–72.

Fikrie, Muhammad. 2019. "Bos YouTube Akui YouTuber Indonesia Makin Produktif." *Www.Kumparan.Com*. Retrieved October 21, 2020 (https://kumparan.com/kumparantech/bos-youtube-akui-youtuber-indonesia-makin-produktif-1550664693914355873/full).

Frenzel, Goetz, Pekrun, and Watt. 2019. "Development of Mathematics Interest in Adolescence: Influences of Gender, Family, and School Contect." *Journal of Research on Adolescence* 20(2):507–37.

Hartanti, Ariesta Dwi. 2018. "Pengaruh Video Blog Gitasav Terhadap Minat Siswa Untuk Melanjutkan Studi Ke Jerman." Sultan Ageng Tirtayasa.

Hidi, Suzanne. 2006. "Interest: A Unique Motivational Variable." *Educational Research Review* 1:69–82.

Izzatunihlah. 2017. "Pengaruh Terpaan Tayangan Drama Korea Pinocchio Terhadap Minat Mahasiswa Menjadi Jurnalis." Sultan Ageng Tirtayasa.

Jayani, Dwi Hadya. 2020. "10 Media Sosial Yang Paling Sering Digunakan Di Indonesia." *Www.Databoks.Katadata.Co.Id*. Retrieved October 21, 2020 (https://databoks.katadata.co.id/datapublish/2020/02/26/10-media-sosial-yang-paling-sering-digunakan-di-indonesia).

Kemdikbud. 2019. "Pusat Penilaian Pendidikan Kementerian Pendidikan Dan Kebudayaan." *Puspendik Kemdikbud*. Retrieved June 17, 2021 (https://hasilun.puspendik.kemdikbud.go.id/).

Kominfo. 2014. "Riset Kominfo Dan UNICEF Mengenai Perilaku Anak Dan Remaja Dalam Menggunakan Internet." *Kominfo*. Retrieved December 23, 2021 (https://kominfo.go.id/content/detail/3834/siaran-pers-no-17pihkominfo22014-tentang-riset-kominfo-dan-unicef-mengenai-perilaku-anak-dan-remaja-dalam-menggunakan-internet/0/siaran_pers).

Kpolovie, P. J., A. I. Joe, and T. Okoto. 2014. "Academic Achievement Prediction: Role of Interest in Learning and Attitude Towards School." *International Journal of Humanities, Social Science and Education* 1(11):73–100.

Kriyantono, Rachmat. 2020. *Teknis Praktis Riset Komunikasi Kuantitatif Dan Kualitatif*. 2nd ed. Jakarta: Prenadamedia Group.

Kurniawan, Agung Widhi, and Zarah Puspitaningtyas. 2016. *Metode Penelitian Kuantitatif*. Vol. 4. Yogyakarta: Pandiva Buku.

Ludwianto, Bianda. 2020. "Jumlah Pengguna Internet Indonesia Tahun 2020 Capai 196,7 Juta, Naik Karena WFH." *Www.Kumparan.Com*. Retrieved January 9, 2021 (https://kumparan.com/kumparantech/jumlah-pengguna-internet-indonesia-tahun-2020-capai-196-7-juta-naik-karena-wfh-1uYnJ729dTL/full).

McQuail, Dennis. 2011. *Teori Komunikasi Massa McQuail*. 6th ed. Jakarta: Salemba Humanika.

Naja, Safinatun. 2017. "Kritik Sosial Dalam Stand Up Show Special Mesakke Bangsaku (Analisis Isi Materi Komika Pandji Pragiwaksono Dalam Stand Up Show Special Mesakke Bangsaku Final Di Jakarta)." Universitas Muhammadiyah Malang.

Nihongo Mantappu, Youtube. 2021. "YouTube Nihongo Mantappu." *Www.Youtube.Com*. Retrieved January 9, 2021 (https://www.youtube.com/channel/UC1Gmqqs_Myzl2KHIeqfUC9A).

Nugraha, Aulia Rahman. 2021. "Waspada, Ini Bahaya Berhenti Belajar Matematika Setelah Usia 16 Tahun." *Kumparan*. Retrieved November 21, 2021 (https://kumparan.com/kumparansains/waspada-ini-bahaya-berhenti-belajar-matematika-setelah-usia-16-tahun-1w1pjM1Gpw2/full).

Pujileksono, Sugeng. 2016. *Metode Penelitian Komunikasi Kualitatif*. Malang: Intrans Publishing.

Puspitasari, Dinda. 2018. "Pengaruh Terpaan Video Beauty Vlogger Di YouTube Terhadap Perilaku Imitasi Mahasiswi Dalam Merias Wajah (Studi Pada Mahasiswa Ilmu Komunikasi Universitas Muhammadiyah Malang Angkatan 2013)." Universitas Muhammadiyah Malang.

Putri, Nadia Meliandri. 2020. "Pengaruh Terpaan Pesan Kode Promo Grabfood Terhadap Loyalitas Pelanggan Pada Mahasiswa Kota Surabaya." *Commercium* 21(1):1–9.

Rahayu, Linda Destri, and Anggun Badu Kusuma. 2019. "Peran Pendidikan Matematika Di Era Globalisasi." *Prosiding Sendika* 5(1):534–41.

Setiadi, Ahmad. 2016. "Pemanfaatan Media Sosial Untuk Efektifitas Komunikasi." *Jurnal Humaniora* 16(2):1–7.

Shore, Larry. 1985. *Mass Media for Development: A Rexamination for Access, Exposure and Impact, Communication the Rural Third World*. New York: Praegar.

Sirait, Erlando Doni. 2016. "Pengaruh Minat Belajar Terhadap Prestasi Belajar Matematika." *Formatif: Jurnal Ilmiah Pendidikan MIPA* 6(1):35–43.

Stellarosa, Yolanda, Sandra Jasmine Firyal, and Andre Ikhsano. 2018. "Pemanfaatan Youtube Sebagai Sarana Transformasi Majalah Highend." *LUGAS Jurnal Komunikasi* 2(2):59–68.

Sugiyono. 2019. *Metode Penelitian Kuantitatif Kualitatif Dan R&D*. 2nd ed. edited by Sutopo. Bandung: Alfabeta.

Wisata, Dewi Triyunia, and Esti Harini. 2016. "Peningkatan Minat Dan Hasil Belajar Matematika Dengan Metode Pembelajaran Problem Solving." 4(1):73.

YouTube. n.d. "YouTube Untuk Pers." *Www.Youtube.Com*. Retrieved October 21, 2020 (https://www.youtube.com/intl/id/about/press/).

Yulianti, Elsi. 2019. "Pengaruh Terpaan Menonton Variety Show Korea Running Man

Di Media Online Terhadap Minat Belajar Budaya Korea Pada Peserta Kursus Di Korean Culture & Language Center Sejong Yogyakarta." Universitas Muhammadiyah Yogyakarta.