Meta Analysis: The Effect of Using Youtube towards EFL Students' Speaking Skill in Indonesia

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Abstract

The research objectives to find out the effect of using Youtube towards EFL students' speaking skill for senior high school in Indonesia. The writer focuses on using meta-analysis method, in which to get a general conclusion from secondary data. By searching from Google Scholar and Sinta, fourteen data are found in the form of articles, journals and thesis. The data collected as samples are based on keywords indonesian high school students with tenth and eleventh grades as samples. Through JASP application, findings reveal that the effect size of Youtube towards students' speaking skill for grade tenth is high (RE model=1,49) and medium effect (RE model=0,64) for grade eleventh. Moreover, Youtube significantly and positively affects the students's speaking skill for both grade tenth and eleventh.

INTRODUCTION

Social media significantly and inevitably takes important role nowadays. Social media as the basis of Web in allowing the users to create and content exchange technologically (Haenlein & Kaplan, 2010). In another word, social media such as Instagram, YouTube, Facebook, and many others is identified as Internet-based application and mobile services, allowing users to socialize or to be in touch to other users in online communities. Most recent data reveals that the number of social media users in 2020 is estimated 3.96 billion users around the world (Statista, 2020).

Furthermore, the calculation of social media users both male and female is estimated 12, 4 percent between the age of 13 to 17, followed by the range of the age of 18 to 24 with 30, 7 percent, and 34, 1 between the ages of 25 to 34 (Statista, 2021). By this number, youth generation is the majority community who engaged on social media. Many studies indicate that this generation grow up surrounded by technology and internet (Fisher & Baird, 2006). Moreover, this generation is constantly connected to friends and the rest of the world through social media. They can access a variety of resources in digital learning environments with high-speed internet (Prensky, 2001).

In the field of education, numerous literature have already explained the usefulness of social networking sites in many subjects such as English as Foreign Language. Students are able to communicate easily to others in learning English because of social media (McDermott, 2013). On using their language and communication skills, the increase of linguistic development on social media represents a multitude of opportunities for language learners to process language and gain feedback. Learners utilize social media to interact with foreigners to practice their English language skills especially their speaking ability (Brick, 2012). For instance, using YouTube as a media in teaching and learning makes the students catch up the lesson easily and significantly improve students' speaking skill (Ilyas & Putri 2020). Moreover, YouTube has significant effects on students speaking and followed by their motivation and interest (Ilyas & Putri, 2020). Recent studies also show that applying social media for learning English has some benefits (Zam Zam Al Arif, 2019) as well for improving spelling, pronunciation, grammar and vocabulary (Aloraini, 2018; Çetinkaya & Sütçü, 2018).

The literature on amount of topics and method related to social media in education is growing astonishingly. One of methods used in a research is Meta-analysis. Meta analysis is defined as he calculation of the amount of empirical studies statistically through effect sizes in order to integrate the result and findings (Glass, 1976). In order to find out the effect size, the Cohen's d, or two different means are needed. In another word, Cohen's d are the term used in calculating the effect size by standardized mean difference (Cohen, 1988).

Related to learning English, some previous studies have discussed similar research. Bangun (2022) did a research about the effects of vocabulary mastery on English-speaking ability: a Meta-Analysis Study by examining twenty-one articles on the relationship between students' adequate academic vocabulary and English-speaking competence. The data was examined using the JASP application. The results of the study show that improving one's English-speaking abilities is positively impacted by having a sufficient academic vocabulary.

Lokman (2017) did a research about systematic review and meta-analysis on the effectiveness of facebook application in teaching and learning process. From the year 2010 to 2015, a total of 16 data were analyzed. The result shows that Facebook can be applied in the classroom as source of information and improving language skills. Moreover, a total number of six effect size from six studies were calculated trhough meta-analysis and got medium high (+0.53). In conclusion, Facebook has an impact and adventages in teaching and learning process.

Diner (2021) conducted meta-analysis method of the influence of instructional media on speaking learning. The four aspects that are analysed in this

research are based on the articles, the educational background, the instructional media, and the types of speaking. Ten related articles are collected and examined. The result shows that teaching material can be applied in university. Moreover, it has an impact along the process of mastering speaking.

Yu (2022) did a research entitled the effect of videoconferencing on second-language learning: a meta-analysis. The study discusses about the effectiveness of Videoconferencing on L2 learning in the change of learning style caused by the pandemic. This study especially figures out listening and speaking abilities. The research uses meta-analysis method for synthesizing 5 related results of control/experimental group of studies. Moreover, the final result shows the medium effect of control/experimental group comparisons on the L2 language enhancement of both skills.

Nonetheless, the research still has the difference with the previous studies because this research focuses on the effect size of YouTube towards EFL students' speaking skill in Indonesia according to tenth grade and eleventh grade by using meta-analysis.

RESEARCH METHOD

This is a quantitative study followed by meta-analysis. In order to get a general conclusion of statistical data by the term effect size, the means different are needed and compared (Cohen, 1988). Moreover, the research was conducted by summarizing the data of similar research, conducting a review and analysis of the results of similar research that has been done previously so as to achieve a numerical data.

Data of this research based on journals, articles, thesis, and dissertation. by browsing to Google Scholar and Sinta with keyword" "effect of social media", "English language skills" or "YouTube", "speaking skill", "YouTube Channel" , Speaking Ability" , YouTube Video", "Speaking Achievement". After screening the data by inclusion and exclusion, fourteen related articles were analyzed during the time from 2019 to 2022. The instrument is consulted and approved by one of lecturers in English Department in Universitas Negeri Padang, Ririn Ovilia, S.Pd, M.Pd. The research instrument is with guidelines for coding (*data coding).* The researcher conducted the random effect model due to the different places of the sample collected from the previous studies. JASP software is used in order to conduct the meta-analysis.

RESULT AND DISCUSSION

Research Findings

1. The average effect size according to tenth grade

   RE' Model (k = 6; τ^2 estimator: REML)

Table 1. Fixed and Random Effects according to tenth grade

Fixed and Random Effects

	Q	df	p
Omnibus test of Model Coefficients	29.84	1	< .001
Test of Residual Heterogeneity	21.31	5	< .001

Note. p -values are approximate.

Note. The model was estimated using Restricted ML method.

There are six articles found according to tenth grade. The result of the analysis shows that the six studies is heterogeneous (Q = 21.31, p < 0.001). As the result, the suitable model used in this research to estimate the mean average of six studies is random effect model.

Table 2. Residual heterogenity estimates according to tenth grade

	Estimate	Lower	95% CI Upper
τ^2	0.343	0.069	2.601
τ	0.586	0.263	1.613
I^2 (%)	76.697	39.944	96.144
H^2	4.291	1.665	25.935

From the table above, the random effect size is used and the research is heterogeneous by I^2 is estimated 76%. By this number, it can be categorized as high heterogeneity. Category of Heterogenity according to Higgins et, al (2002):

Tabel 3. Categories of Heterogeneity

I^2 %	Category
0%	Almost no heterogeneity
25%	Small heterogeneity
50%	moderate heterogeneity
75%	high moderate heterogeneity

*Table 4. The result of the average effect size according to tenth grade*

Coefficients

	Estimate	Standard Error	z	p	95% CI Lower Bound	Upper Bound
intrcpt	1.4944	0.2736	5.4629	< .001	0.9583	2.0306

Note. **Wald test.**

The examining with RE' Model indicates that it shows positive effect and the study is significant between the effect of Youtube and students speaking skill according to tenth grade (z= 5.4629, p<0.001, 95%CI [2.0306; 0.9583]). The average effect size of YouTube towards EFL students speaking skill in Indonesia according to tenth grade RE model = 1.49. Thus, it can be categorized as a high effect.

According to Cohen's d category, d >0, 8 is categorized as Large effect.

Figure 1. The diagram of funnel plot according to tenth grade
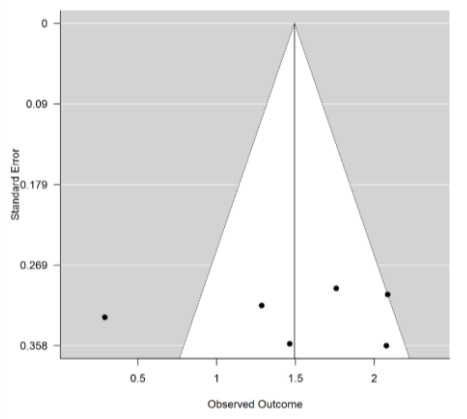
In order to find whether there is publication bias or not, it can be seen from the funnel plot or egger' test. From the diagram of funnel plot above, the researcher is difficult to interpret whether the diagram is symmetry or not. As the result, the Egger's test is conducted.

Table 5. Egger's test according to tenth grade

Regression test for Funnel plot asymmetry ("Egger's test")				
		z		p
sei		-0.1021		0.919

P > 0.05 indicates that the Egger's test is symmetry. Based on the Egger's test above, it shows that publication bias is not found from the studies on meta-analysis.

2. The average effect size according to eleventh grade jcnl
   RE' Model (k = 8; τ^2 estimator: REML)

Table 6. Fixed and Random Effects according to eleventh grade
Fixed and Random Effects

	Q	df	p
Omnibus test of Model Coefficients	25.11	1	< .001
Test of Residual Heterogeneity	12.22	7	0.094

Note. p -values are approximate.
Note. The model was estimated using Restricted ML method

The result of the analysis shows the test of residual heterogeneity (Q = 21.31, p = 0.094). Then, the researcher conducted Residual heterogenity estimates.

Table 7. Residual heterogenity estimates according to eleventh grade

	Estimate	Lower	Upper
			95% CI
τ^2	0.0511	0.000	0.587
τ	0.2261	0.000	0.766
I^2 (%)	40.3123	0.000	88.574
H^2	1.6754	1.000	8.752

From the table above, the random effect size is conducted and the data show that I^2 is estimated 40%. By this number, it can be categorized as small heterogeneity.

*Table 8. The result of the average effect size according to eleventh grade*

Coefficients						
					95% CI	
	Estimate	**Standard Error**	**z**	**p**	**Lower Bound**	**Upper Bound**
intrcpt	0.637	0.127	5.011	< .001	0.388	0.886
Note. **Wald test.**						

The data shows positive effect and significant study between the effect of Youtube and students speaking skill according to eleventh grade (z= 5.011, p<0.001, 95%CI [0.886; 0.388]). Then, the average effect size of YouTube towards EFL students speaking skill in Indonesia according to eleventh grade RE model = 0.64. Thus, it can be categorized as a medium effect.
According to Cohen's d category, $0,4 \geq d \leq 0,8$ is categorized as medium effect.

Figure 2. Funnel Plot according to eleventh grade
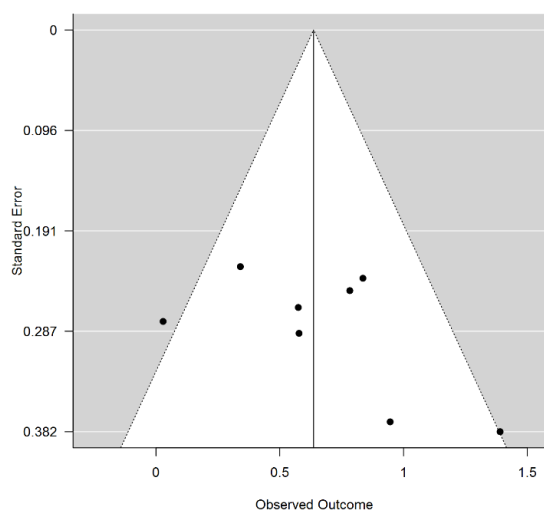
From the diagram of funnel plot above, the researcher is difficult to interpret whether the diagram is symmetry or not. As the result, the Egger's test is conducted.

Table 9. Egger's test according to eleventh grade

Regression test for Funnel plot asymmetry ("Egger's test")				
		z		p
sei		1.541		0.123

P > 0.05 indicates that the Egger's test is symmetry. Based on the Egger's test above, publication bias is not detected from all data of the studies on meta-analysis.

Discussion

From the results of average effect size, students in tenth grade (d=1, 49) has higher improvements in using Youtube towards speaking skill than the eleventh grade students (d=0, 64). Nevertheless, Youtube shows a positive effect both for tenth and eleventh grades students. It means that Youtube is effective to be applied in grade tenth and eleventh.

In agreement with the research, Meinawati et, al (2020) states Youtube provides an attractive, joy and fun videos that makes tenth grade students gets better achievement in speaking skill especially in vocabulary grammar and pronunciation even though there are a few students who have not shown the significant improvement. They also tempts to think more creative. However, the students are easily distracted by the popular videos, the advertisement and the buffering due to the network problem. The videos of native speakers and the longer duration also limits the students in cathing up the lesson. The students needs extra time to think and analyze the video while the time given for teaching and learning process in class is limited.

For the eleventh grade students, Dzihni, et, al (2021) found that students give positive response that Youtube can significantly improve speaking acievement in blended learning due to the ease of access and the improvement of learning outcomes. In contrast, some of the students have disagreed and not satisfied in the implementation of Youtube for speaking skill in blended learning because they have limited movements and speaking practice as good as in classroom. Moreover, Agustina, M. (2014) revealed that in cycle 1 observation, there is significantly less improvement in students's speaking skill by using Youtube. It happened because the students are interested in the media of learning rather than the boring textbook. At the reflection, the researcher did an interview and found that the students have difficulties in comprehending the fast speech videos and the native accent due to the lack of vocabulary the students have.

CONCLUSION

1. There is a high effect size of YouTube towards EFL students speaking skill in tenth grade (d=1, 49) and medium effect for eleventh grade (d=0, 64).
2. The use of Youtube significantly and positively enhances the speaking skill of EFL students in Indonesia for both tenth grade and eleventh grade.

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