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Correlation of Learning Media Types to Online Disinhibition Effects in Online Lectures

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Abstract

The use of media affects how college students interact with lecturers, including the tendency of students to be more active in the learning process. The purpose of this research is to find out whether there is a relationship between the type of media and the online disinhibition effect in the online lecture process. Data were obtained from 616 respondents who filled out online questionnaires and used Kendall's tau analysis to test the research questions. The results of the analysis showed that there was no significant relationship between the type of media and the level of online disinhibition effect (rτ equals .02, p equals .56). This is because the closeness of the interaction in the online class that occurs is able to match the interaction in the offline class and everyone in the class already knows each other, so that whatever media used is not related to the level of online disinhibition effect.

Kata kunci:
online disinhibition effect;
media pembelajaran;
perkuliahan daring.

Abstrak

Penggunaan media memengaruhi bagaimana mahasiswa berinteraksi dengan dosen, termasuk dalam hal kecenderungan mahasiswa untuk lebih aktif dalam proses pembelajaran. kecenderungan Tujuan dari penelitian ini ialah untuk mencari tahu apakah terdapat hubungan jenis media dengan *online disinhibition effect* pada proses perkuliahan daring. Data didapat dari 616 orang responden yang mengisi kuesioner secara daring dan menggunakan analisis *Kendall's tau* untuk menguji pertanyaan penelitian. Hasil analisis menunjukkan tidak ada hubungan yang signifikan jenis media terhadap tingkat *online disinhibition effect* (rτ sama dengan 0,02, p sama dengan 0,56). Hal ini dikarenakan kedekatan interaksi didalam kelas daring yang terjadi sudah mampu menyamai interaksi dalam kelas luring dan setiap orang dalam kelas tersebut

sudah saling mengenal sehingga menyebabkan apapun media yang digunakan tidak memiliki keterkaitan dengan tingkat *online disinhibition effect*.

INTRODUCTION

The pandemic has made massive changes to the learning process at elementary to high levels. One form of this change is the use of online media as a means of conveying learning. Even though the problem of network equity has yet to be appropriately resolved due to the geographical structure in Indonesia as an archipelagic country dominated by mountains, some of which are still active, the use of online-based learning media is considered of the best learning options.

Even online learning is felt to be unable to replace the role of learning through face-to-face processes because face-to-face interactions have higher satisfaction and quality than interactions via computers (P. S. N. Lee et al., 2011; Mallen et al., 2003). As students get used to online learning, the quality of teachers and teaching skills condition the class as optimally as possible will make students more satisfied and have a positive view of the online learning process, of course, supported by internal factors (Adzharuddin & Lee, 2013; Çobanoğlu, 2018; Conradie et al., 2014; Diep et al., 2017; Horvat et al., 2015; Liaw, 2008; Liaw & Huang, 2007; Naveh et al., 2012). Even though there will not be fully online learning like during the pandemic, there is a possibility that the learning process will combine face-to-face learning with online learning, better known as blended learning. In blended learning, physical classes conduct face-to-face meetings between teachers and students. The learning process requires learning media that supports the implementation of online interactions. One media that helps is the Learning Management System (LMS). Learning using LMS has types of media and supporting applications based on audio, video, and text so that it has resources that can be maximized in implementing learning (Kasim & Khalid, 2016). In addition to using LMS, learning media will also focus on the interaction process between teachers and students.

The interaction process can be mapped into two properties: direct or real-time and delayed (H. Lee et al., 2008). Direct or real-time interactions allow interactions to occur simultaneously, sent by the communicator and received by the communicant. In contrast, delayed interactions are conversations that require a longer time to be responded to by the communicator and communicant.

Some application programs are used in both processes. In terms of audio-video, recording is one of the most effective methods for delayed interaction. However, video conferencing applications, such as Google Meet, Zoom, and Skype, are often used to carry out real-time audio-video learning. Apart from audio-visual-based interactions, text-based interactions are also used in online learning. The application often used is the default application in the LMS, which is used to provide instructions indirectly (Kasim & Khalid, 2016), while for direct text-based interactions between students and teachers, instant messaging applications are used, such as WhatsApp and Telegram. A special note regarding text-based interactions, both real-time and delayed, in general, is that there is no significant difference in the effectiveness of their use (Johnson, 2012). The use of different media types certainly impacts students, one of which is the emergence of visual anonymity in the interaction process of online-based learning.

Visual anonymity is a condition where people feel others do not recognize them because they do not show faces during the interaction process (Walther, 2011). Visual anonymity can arise regarding the use of media used during the online learning process. Real-time audio-video

learning has the lowest probability of visual anonymity because students will be forced to show themselves immediately by turning on the camera and microphone, even though network interference may prevent them from doing so. Furthermore, the use of text-based interactions directly (via WhatsApp group) or indirectly (via LMS) has a high probability of visual anonymity because no faces are shown during the interaction. Therefore, from the process of interaction between the learner and the teacher which results in visual anonymity, it is expected that the learner will more easily express opinions, express his feelings, and reduce the ability to hold back related to these two things or what is generally known as the online disinhibition effect (Suler, 2004).

Suler (2004) concluded that this tendency not to hold back stems from feelings of not being able to be known and will not be observed by others, there is a time lag between the communicator and the communicant, feelings of being separated from their original identities, the availability of different identity options, and the lack of control from others regarding social behaviour when establishing communication through cyberspace, including in the world of education. In addition, the opinions individuals express through cyberspace make a person's comments more visible (Clark-Gordon et al., 2019). The same tendency also appears in a study by Joinson (2001) which shows that virtual interactions that do not display faces cause individuals to be more open than those who show their faces. This finding is based on the absence of eye interaction between the communicator and the communicant in virtual interaction, as in direct interaction (Lapidot-Lefler & Barak, 2012). However, on the other hand, people generally still want to express themselves, regardless of whether or not anonymity exists in the virtual interactions. Interaction through cyberspace, especially in learning, has its unique characteristics (Misoch, 2015).

Different applications and media present different levels of anonymity and online disinhibition. Learning that uses real-time interaction and does not need to show faces directly, which makes it possible for students not to be recognized by the teacher, should make learning more interactive. This is because, under these conditions, individuals tend to lose control over themselves during interactions (Joinson, 2001; Mallen et al., 2003; Misoch, 2015; Nosko et al., 2010; Tidwell & Walther, 2002). Such conditions are also expected to create more interactions between lecturers and students compared to conditions where students interact in a delayed manner and have to show their faces during the lecture process so that there is a high probability of being recognized by the lecturer.

On the other hand, smoother interactions will add activity points for students and provide opportunities for students who previously did not dare to express opinions for fear of being wrong and tend to be passive in lectures to be more opinionated and active. Apart from that, the increased interaction also allows the discussion of material to be more interesting and ultimately influences students' view of learning satisfaction, even though it shifted from offline to online conditions during the pandemic. Under these conditions, it is interesting to know how the impact of various learning media creates different disinhibition.

In this study, the research question is the correlation between the type of media used and the online disinhibition effect (ODE) in the online learning process. It is assumed that audio-video interaction in real-time will cause the lowest level of ODE because of the possibility of immediate interaction and interaction carried out by showing faces. Furthermore, interaction through text in real-time will lead to activity at a moderate level because even though the interactions that occur do not show faces, they have the opportunity to be directly answered so that students will still have an ODE level at a moderate level. Finally, interaction using the LMS will encour-

age students to be more active because no faces are shown in this interaction, and there is a context of delayed communication, so they tend to have high ODE levels. The hypothesis in this study is that there is a correlation between the type of media determining the level of online disinhibition effect on students.

This study is important because it will reveal the tendency of interaction behavior be-tween learners and teachers during online learn-ing. The high online disinhibition effect will encourage optimal discussion and activity behavior in the class so that the learning process can run optimally as well, and provide opportunities for those who are not used to asking directly to be active in their own way so that in the end, the class is able to accommodate all the character of the learner to participate in the learning process.

METHODS

The criteria for respondents in this study were active students from public or private universities with at least one-semester experience taking online lectures. Experience of at least one semester is considered sufficient to be able to share what respondents experience and feel about how they interact with colleagues or teachers. This study uses a quantitative correlational approach by classifying learning conditions into three types of group: (1) real-time online audio-video (Zoom and Google Meet); (2) real-time text (WhatsApp group); and (3) delayed text (LMS and Google Classroom). As a note, delayed audio-video is not included because, according to Kasim & Khalid (2016), the LMS compiled by the university is too focused on giving assignments but not on providing learning material so that LMS and other learning support applications are classified as delayed text.

A Likert scale was developed to measure ODE with reference to the aspects proposed by Suler (2004): (1) dissociative anonymity, which relates to the uncertainty of one's identity in online conditions because we cannot be sure; (2) invisibility, where in online conditions, especially text-based ones, one person and another cannot observe each other; (3) asynchronity, which is related to other people's responses in online conditions that may not occur directly; (4) solipsistic introjection, which is a condition in which a person can feel the presence of another person, especially the communicator from online interactions that occur, for example, we are sometimes able to imagine and know the expression of the other person just from what we read; (5) dissociative imagination, namely imagining that online conditions are different and separate from offline conditions; (6) minimization of authority, which is a person's belief in online conditions where no one is able to control what he is doing; and finally (7) self-disclosure, which is a condition in which we present ourselves online. Each aspect comprises two question items in the form of a Likert scale. Scoring is done on a scale of one to five, where one is very unsuitable to five is very suitable.

Table 1.
List of Research Questionnaire Questions

No.	List of Questions
1	I feel more active when I attend online lectures, because the lecturers don't recognize me during lectures.
2	I often express my opinion during online lectures because I feel unrecognized.
3	I feel more comfortable expressing my opinion during online lectures because I don't meet face-to-face with lecturers and classmates.
4	It's nice not having to wear neat clothes during online lectures.
5	I feel free when I take online lectures.
6	Because there is a time gap between questions and answers during online lectures, I feel more comfortable.
7	During online lectures, I can imagine the expressions of my friends when they get explanations from other friends or lecturers.
8	When an online lecture application crashes, I can imagine the annoyance my friends feel.
9	I feel that there is a more positive difference between me when I attend online lectures than when I attend face-to-face lectures.
10	I show a different side of myself when taking online lectures by being more active.
11	I don't think I will be punished for badmouthing online lectures.
12	I am afraid that my opinion, which may be different from that of other friends, will relate to me.
13	I prefer to use learning media that don't need to show faces.
14	I feel I have far more opinions and comments in WhatsApp group classes than in Zoom or Google Meet.

In this study, a validity test of the instrument was conducted using the construct validity approach analyzed with confirmation factor analysis (CFA) and assisted with the JASP statistical analysis program. Of the fourteen items available, items number two and eleven cannot be continued in the analysis because the loading factor value is below the criteria of 0.3. In general, the following results of the validity test that has been carried out.

Table 2.
Validity Test Results

No. of Item	Aspects	Sig.	Loading Factor
1	Dissociative anonimity 1	< .01	.62
2	Dissociative anonimity 2	< .01	.22
3	Invisibility 1	< .01	.73
4	Invisibility 2	< .01	.41
5	Asynchronity 1	< .01	.32
6	Asynchronity 2	< .01	.56
7	Solipsitic Introjection 1	< .01	.32
8	Solipsitic Introjection 2	< .01	.30
9	Dissociative imagination 1	< .01	.51
10	Dissociative imagination 2	< .01	.62
11	Minimization of authority 1	< .01	.16
12	Minimization of authority 2	< .01	.35
13	Self disclosure 1	< .01	.42
14	Self disclosure 2	< .01	.46

The suitability indicators of the items with the constructed constructs are indicated through the Tucker-Lewis Index (TLI), comparative fit index (CFI), goodness of fit index (GFI), and root mean square error of approximation (RMSEA), which were also analyzed. Based on the GFI indicators mentioned earlier, TLI = 0.961, CFI = 0.971, and GFI = 0.976, where greater than 0.95 is considered a minimum indicator, while RMSEA = 0.038 with a minimum indicator of 0.08.

After testing the validity, followed by testing the reliability. Reliability testing was conducted using the Cronbach alpha approach with a coefficient of 0.787. These results show that the instruments compiled were reliable because the minimum standard of reliability was 0.7 (Eisingerich & Rubera, 2010).

RESULTS

This study involved 616 respondents with an average age of 20.2 years (SD = 2.84), most of whom were female (148 people of male, 443 people were female, and 25 were unwilling to answer). Respondents are students divided between the first semester to the ninth (M = 3.71, SD = 1.95) from public and private universities in Java and Sulawesi. Respondents who attended online lectures used real-time text communication facilities of 450 people, 126 used real-time audio-video communication facilities, and the remaining 40 used LMS.

Table 3.
Research Statistic Descriptive

Indicator		N	Mean (M)	Standard Deviation (SD)
Age		616	20.2	2.84
Semester		616	3.71	1.95
Sex	Male	168		
	Female	443		
Media	Real-time audio-video	25		
	Real-time text	126		
	LMS	450		

This study also mapped the distribution of ODE scores in respondents by grouping the scores obtained into the very low category to the very high category. The mapping results revealed that 63 people were included in the very low category, 129 in the low category, 246 in the medium category, 145 in the high category, and 33 in the very high category.

Table 4.
Level of Online Disinhibition Effect (ODE) Based on the Learning Media Used

		The Level of Online Disinhibition Effect (ODE)					
		Very Low	Low	Moderate	High	Very High	Total
Learning Media	Real-time text	42	88	191	110	19	450
	Real-time audio-video	16	31	39	29	11	126
	LMS	5	10	16	6	3	40
Total		63	129	246	145	33	616

This study uses the Kendall's tau coefficient as a hypothesis analysis because one of the research variables is nominal. The analysis results show no correlation between the type of learning media and the level of ODE ($r_\tau = 0.02$, $p = 0.56$).

Tabel 5.
Hypothesis Test with Kendall's Tau Coefficient

			ODE	Learning Media
Kendall's tau_b	ODE	Correlation Coefficient	1.000	.019
		Sig. (2-tailed)	.	.561
		N	616	616
	Learning Media	Correlation Coefficient	.019	1.000
		Sig. (2-tailed)	.561	.
		N	616	616

Although there is no significant correlation between the type of media and ODE during the online learning process, Table 1 contains exciting information. In Table 1, it can be seen that, in general, the percentage of students who have a tendency for ODE in real-time text groups is higher than other media at a moderate level (44% compared to 42.28% and 42.5%) and high (30 % compared to 23, 58% and 20%).

DISCUSSION

The results of this study indicate that whatever media is used, online learning will shape ODE behavior at a level that does not differ too much from one medium to another. This result may be due to the characteristics of each learning media that are not unique, for example, Zoom real-time audio-video learning media also allows a student to turn off the camera when there is an obstacle on the network. In addition, the chat feature in Zoom is sometimes used more often by students to ask questions than directly. Real-time text-based learning media, such as WhatsApp and Telegram groups, allow teachers to send pre-recorded audio-video learning media or provide links pointing to these media. Likewise, the use of LMS not only focuses on delivering assignments but is also used to send learning media in the form of delayed audio videos.

A study by (Joinson, 2001) and Lapidot-Lefler & Barak (2012) provides an explanation of why real-time text-based media is more likely to cause ODE in the medium and high categories than the other two media. In text-based communication, no eye contact occurs, and self-control

tends to be lower in anonymous situations. However, a study by Lapidot-Lefler & Barak (2012) also shows that even if they feel others are observing them, they still do not hold back in conveying something in virtual interactions. This is because they still feel known by others (Misoch, 2015).

Another reason that causes the results of the analysis of this study to be different from previous studies is that when students interact in online lectures, they have established relationships with friends in the same class and know each other. This makes the interaction strengthens their previous relationship, and even without showing their face, they can still observe and imagine that person. In addition, some lecturers provide control over the class and as a party that has authority so that the conditions of anonymity in each media cannot bring about ODE. In addition to the condition of classes that already know each other, the representation of each media in research is relatively unequal and dominated by the use of real-time audio-video applications, so that the experience gained is richer, and those who are dissatisfied with asynchronous learning rate their learning is not enjoyable (Dias & Diniz, 2014).

The interesting thing that emerged during the research process was that real-time text media dominated most respondents during the learning process between lecturers and students. This finding could be due to the media richness theory (Walther, 2011). The theory explains that the more varied or more information the media conveys, the better the media. WhatsApp can accommodate almost all types of advantages of other learning media, except for the scheduling feature, which is very typical of LMS. WhatsApp can provide instructions and directions for students, interactions that occur immediately, simple language, and can provide personal messages to each student.

CONCLUSION

This study proves that the form of learning media students use does not influence the emergence of ODE. This is because the conditions of learning online still make a person feel observed and recognized by other friends, so even though student interactions with their friends are dominated by online interactions, the duration of the existing interactions are already able to match offline interactions.

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