



## The credibility of the digital media: Teacher perceptions and practice

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### ABSTRACT

The current digital literacy skill that teachers have to master is the ability to determine the credibility of the digital media for education used to support distance learning. The teachers were asked to sort several digital media and differentiate which digital media provided many benefits and best facilitate learning. The purpose of this study was to understand how teachers determine the credibility of the digital media whether they decided based on star reviews or the number of the features provided by the digital media that were used to facilitate learning. This research was comparative quantitative research. The participants were 108 teachers directed to assess the credibility of digital media to compare between high and low credibility. The results shown that when using the digital media with high star reviews, the digital media with more features gained more credibility, on the other hand, the digital media with fewer features were not able to compensate for the low star reviews. The ultimate goal proposed is to change the attitude and behavior of the teacher. When the teacher knew the information and chose the digital media to use, the teacher finds a change in their attitude. In general, digital media use in learning tends to be seen from the star reviews given by digital media users, which can trigger credibility assessment.



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## INTRODUCTION

The need for information sources in learning makes users have to filter some information from various sources and determine which sources provide reliable information. As digital media development currently provides many diverse features, teachers as digital media users must determine which educational digital media will be used to support learning. Digital media is a medium that is easily accessible to users who are trying to determine which digital media can be trusted (Fernández-Ardèvol et al., 2020). The credibility of digital media is essential. It can be seen from the use of the internet to access information that has become an option for 98% of Indonesians (Datareportal, 2020). Besides, 55.3% of users look for information in the education category, and 49.67% view video tutorials online (Indonesian Internet Service Provider Association, 2020). It is important to know how digital media users, especially teachers, determine the credibility of the digital media they use.

As it is known that information literacy is a way of accessing and analyzing information, digital literacy is part of information literacy, which involves implementing it online (Kaeophanuek et al., 2018). Thus, users must determine textual and visual cues in assessing the credibility of information online. One of the essential fields requiring the credibility of online information is education. Recently, all education levels in Indonesia have started implementing distance learning. Teachers are asked to actively provide online learning to their students, even though there is no direct meeting. Teachers are required to look for trusted educational digital media to use in learning. It is a critical focus area for assessing digital media's credibility because relying on less credible digital media can lead to inefficient learning (Reyna et al., 2018).

A study by Hovland et al. on credibility assessment states that credibility is defined as reliable information and expertise in seeing the perceived knowledge and skills from information sources (Hovland et al., 1953). Trust formed morality, while expertise means seeing and having skills in understanding information (Sbaffi & Rowley., 2017). This term is also still used by some researchers who focus on credibility research (Fogg et al., 2003; Schmied, 2021). Trust is important for assessing digital media information because this is certainly different from assessing information traditionally (Shafin et al., 2020). If users feel the quality or content is not trusted, then they are less likely to return (Shen et al., 2018).

As for the popular digital media, the credibility evaluation places more emphasis on how digital media is widely used and given high star reviews (Floyd et al., 2014). The researchers have stated that a good design appearance is the most important factor in gaining internet users' trust (Abbasi & Huang, 2020). Meanwhile, several studies found that source credibility has a significant effect on the usefulness of acceptable information to users (Keshavarz, 2014; Leong & Ho, 2020). However, according to Driver et al., users face difficulties in assessing credibility, which is the uncertainty about factors that become valid evidence or information because they lack experience about it (Driver et al., 2020). Several studies conducted in educational settings found that the ability of users to assess credibility is still low. This is because they have difficulty obtaining evidence (Pjesivac et al., 2018; Tuzahra, 2021). This is also reinforced by research findings stating that users find it difficult to assess credibility because users lack training and assessment methods so that they find it difficult to assess credibility (Forzani, 2018).

A study conducted by Fogg et al. found that one of the most important factors according to many users in assessing online credibility is the structure of the media's information (Fogg et al., 2003). Another factor that is essential for users in assessing credibility is accuracy (Ferreira et al., 2019). The credibility assessment is also influenced by users' motivation and experience in assessing content (Waddell, 2017). Credibility can also be affected by media content, quality, and text quantity (Sun et al., 2019; Battineni et al., 2020). Meanwhile, Mark, who also examined credibility in the educational field, found that the format is the key to credibility in traditional methods, such as the use of books and journals that are considered credible (Mark, 2011). The format may be biased for online credibility because if this format is not found in digital media, users may turn to visuals such as design quality and information quality. The study of online credibility relates to users' characteristics, which is related to their subjective judgment. For this reason, it is essential to know how teachers decide which digital media can be trusted or not to be

used in learning and recommend students to use it. Students prefer the use of digital media because they prefer visual forms. As the study results show, visuals' presence reduces the cognitive load; this is reinforced by visual media that is easier to remember than print media (Aitamurto et al., 2020).

The main focus of this study was to compare between high credibility and low credibility of digital media in the education category. Participant results were compared by looking at the credibility of digital media that had many features and fewer features (Shorey et al., 2018). Other comparisons are also made by looking at the credibility of digital media that have user reviews (Chiou et al., 2018). The digital media star review category includes high reviews with an average number of stars between 4 and 5 and low reviews with an average number of 1, 2, and 3 stars given by users.

### Online credibility

Credibility becomes a standard of quality or trust that can provide the truth of information (Sbaffi & Rowley., 2017). Credibility consists of objective and subjective parts of the content (Lin & Spence, 2018), which can be found in books, newspapers, electronic documents, or other types of documents that contain data, even websites, and digital media. The subjective component relates to the user's perception or judgment, while the objective part refers to the source's wealth or content. Content belief is defined as truthfulness, whereas expertise is defined as competent knowledge and experience (Fogg et al., 2003; Ferreira et al., 2019). The credibility of online sources is a significant factor in assisting users in assessing online information's usefulness.

Sources of information that show reliable data, both objective and subjective, determine the effectiveness of information, so this trust is also called source credibility, which is defined as identifying a source of information to be considered credible by readers (Schmied, 2021). Currently, digital media that is accessed online exists as an answer to the need for information sources, and this has become a familiar way to obtain and share information that allows users to take advantage of this digital media. The credibility of the sources acquired online refers to three dimensions, according to Teng et al. (Teng et al., 2014):

1. Source expertness refers to the knowledge and perceptions of the user.
2. Source trustworthiness is the trust and acceptance of the recipient of the information on the author's message, showing the extent to which, the source can provide reliable information.
3. Source experience explains how the author's message understands the information based on the user experience.

### Digital media in learning

Digital media in learning aims to make students actively participate in learning activities to achieve learning goals (Reyna et al., 2018). The design of teaching and learning activities and the application of flexible technology devices for learning are the main issues in information technology integrated education today (Lin et al., 2017). Digital media is used as a tool to obtain digital teaching materials for learning activities (Herro et al., 2017). Holzberger et al. stated that learning uses digital media as the delivery of knowledge in digital form (for example, text or images) via the internet; to enhance learner learning and aims to increase teaching effectiveness or promote the skills (Holzberger et al., 2013). Digital media in learning can be divided into four parts in the process (Keane, 2012):

1. Digital teaching materials. It emphasizes that students can learn by extracting some contents of digital teaching materials. The contents of the so-called digital teaching materials refer to e-books, digital data, or content presented by other digital methods.
2. Digital tools. It emphasizes students who continue learning activities through digital tools, such as desktop computers, notebook computers, tablet computers, and smartphones.
3. Digital sending. It emphasizes that student learning activities can be conveyed via the internet, for example, an intranet, internet, and satellite broadcasts.

4. Autonomous learning. It focuses on students who are engaged in online or offline learning activities through independent digital learning. It emphasizes personal autonomous learning and requires the participation of learners with autonomous learning to precede learning activities.

The integration of technology such as computers and other media are applied to learning situations, including synchronous and asynchronous network learning, to break through time, location, and schedule constraints, and to achieve learner-centered individual learning (Nikmah & Azimah, 2020). Synchronous learning is meant to enable users to avoid feeling isolated when communicating with others during the learning process. Whereas asynchronous learning can be done even when the user is offline.

In addition, digital media in learning is more emphasized from the perspective of open educational resources. Open educational resources (OER) are digital materials that are freely and openly provided to educators and students to use and reuse for teaching and learning (OECD, 2007). OER includes learning content, tools, and implementation resources. Also, OER is praised for its ability to reduce student costs and improve educational equity (Grimaldi et al., 2019).

## METHOD

This research was comparative quantitative research that aims to compare between high credibility and low credibility of digital media using the credibility measure model Fogg, et al. (Fogg et al., 2003). The research question in this study was to determine whether teachers rely more on star reviews or feature quality to assess digital media's credibility in the education category used in learning. Four digital media function as independent variables. Each group of participants rated two digital media given high credibility: high star reviews with many features and high star reviews with few features. Meanwhile, another group rated digital media with low credibility: low star reviews with many features and low star reviews with few features.

### Population and sample

The population in this study included public elementary school teachers across a city in Yogyakarta, Indonesia. The research sample was taken using random sampling technique, 108 public elementary school teachers (Table 1) from different schools. Participants in this study were voluntary, and teachers got credit after participating. Teachers were asked to complete an online questionnaire for 10-15 minutes. A total of 108 teachers confirmed and returned the consent form.

Table 1. Research participants

Gender	Age				Frequency
	21-30	31-40	41-50	51-60	
Male	11	16	2	1	30
Female	28	39	9	2	78
Total	39	55	11	3	108

### Data collection

This study assigned participants who were divided into two groups on two conditions to assess high (53 teachers) or low (55 teachers) credibility in the digital media for education. Participants consist of gender groups that are evenly distributed. Participants were asked closed-ended questions to see their assessment of the credibility of digital media. The instrument distributed in the online questionnaire uses a Likert scale, and participants are reminded not to discuss it with other people when filling out the questionnaire. The digital media in the educational category was chosen because the selection of credible digital media is needed to support the learning process and aims to provide additional knowledge and learning resources to students. The quality of the instrument was measured by testing the validity and reliability. The validity test was

carried out to measure the instrument's validity. In contrast, the reliability test was carried out to ensure an instrument could be trusted to be used as a data collection tool.

#### Data analysis

The analysis was carried out using a T-test to produce differences Allen (2017) between high and low credibility. One-way ANOVA testing was also carried out to compare Soliha & Widayarsi (2018) the effect of feature quality on assessments of high and low credibility

## RESULTS AND DISCUSSION

Participants consisted of 108 teachers (30 male and 78 female) with an average age of 33.5. The teachers have digital devices with good specifications and adequate internet connections. The participants' results were measured from their assessment of digital media credibility in the education category used to support learning in terms of star reviews and feature quality. Based on table 2, the T-test results show that applications with fewer features have lower credibility ( $M = 1.76$ ,  $SD = 0.74$ ),  $t_{55} = 5.517$ , Sig. (2-tailed) = 0.000) in comparison to applications with more features ( $M = 2.58$ ,  $SD = 0.80$ ). The T-test was also carried out to see the high credibility, but there was no significant difference (Sig. (2-tailed) = 0.605) between the applications with more features or fewer features if they have high-star reviews. ANOVA test results show that feature quality significantly affects low credibility ratings ( $F = 30.443$ , Sig = 0.000) while feature quality has no significant effect on high credibility ratings ( $F = 0.269$ , Sig = 0.605).

Table 2. The comparison of T-test data for digital media credibility

	Variable	<i>n</i>	<i>M</i>	<i>SD</i>	<i>T-Test</i>
High Credibility	High Star Review / High Features Quality	53	2.50	0.75	$t(53) = 5.517$ Sig. (2-tailed) = 0.605
	High Star Review / Low Features Quality	53	2.43	0.75	
Low Credibility	Low Star Review / High Features Quality	55	2.58	0.80	$t(55) = 5.517$ Sig. (2-tailed) = 0.000
	Low Star Review / Low Features Quality	55	1.76	0.74	

This study's results help build teachers' understanding in determining the credibility of digital media used in learning. This study uses the credibility measure model Fogg, et al (Fogg et al., 2003). It consists of information accuracy, trustworthiness, contact information, design look, and usability. Information accuracy ensures that digital media content must have complete and accurate information, clear objectives, and the services offered. Trustworthiness provides information about digital media developer profiles because this information can represent trust. Contact information displays information about communication access that can be contacted clearly. Design look shows digital media designed professionally in terms of design and features. Usability has general usability principles such as ease of use, good quality content, and help features.

The selection of digital media is based on its relevance to the subjects taught by the teacher by considering the aspect of open educational resources. Four digital media were selected to be given to two groups. The first group rated two digital media given high credibility. The second group rated two digital media with low credibility. Participants from the high credibility group rated the two digital media as equally credible if the star reviews on both digital media were high, regardless of the numbers of the features. Meanwhile, participants from the low credibility group considered digital media trustworthy if it had many quality features. The existence of advertisements on digital media with few features does not affect the participant's credibility assessment. Thus, teachers look at star reviews first when assessing credibility, then looking at the quality of features on the digital media, and maybe they do not necessarily care about advertisements.

This study shows that when using digital media with high credibility, the application with more features increases the credibility rating in line with the high star reviews. Besides, this study

provides different insights regarding credibility assessment, especially in digital media. Teachers in the high-credibility group had several possibilities in assessing digital media, where the applications with many features received a higher credibility score than applications with fewer features. Teachers choose the application with more features, perhaps one factor is because the presence of many features in digital media shows that digital media has a lot of resources.

Digital media comes as an answer to get the information easily accessed via the internet (Radu et al., 2018). The credibility of media is considered because it has a trust assessment format (Keshavarz et al., 2020). So that the current widespread use of digital media is inherent with the internet, credibility is needed to determine the digital media that suits our needs. Credibility promises information that can be used because it has gone through the assessment process (Fogg et al., 2003). The assessment of digital media credibility in the education category can help improve teachers' understanding of the processes in selecting digital media.

The teacher assesses the credibility of digital media by comparing the number of features and star reviews. Seeing that the credibility assessment can be done by assessing the quality of content and star reviews provided by users (Shorey et al., 2018; Chiou et al., 2018). This credibility assessment is needed to ensure that digital media used in learning becomes trusted digital media. Therefore, there is a sense of security for teachers to share digital media with students. Teachers believe that the credibility of digital media is high if the media has high star reviews and has a display feature that is sufficient for information needs in learning. The teacher sees high credibility in digital media if the media has high star reviews so that the teacher concludes that previous users were satisfied with the digital media. This is confirmed by several studies that found that the emphasis on credibility focuses on star reviews and attractive design views (Floyd et al., 2014; Keshavarz, 2014).

In addition, credibility also greatly affects the information users will use (Leong & Ho, 2020). With the more features provided, it also adds to the trustworthiness because teachers think that many features show that digital media has a lot of information provided. Other studies have shown that information's usefulness plays an important role and that media display is the most important feature that user's value most (Ferreira et al., 2019; Waddell, 2017). As display and features are an essential part of the credibility assessment. The teacher's credibility assessment is related to the teachers' characteristics so that the results of the assessment cannot be separated from the teacher's subjective assessment. Still, the teacher's assessment results show that most teachers have the same view on how to assess the credibility of digital media; therefore, this can be a reference in determining the credibility of digital media in the education category.

In this study, teachers are required to read reviews and see the number of stars given to understand the credibility of the application; this requires more processing. When the teacher already has thoughts about the information they receive, they integrate their thoughts into the overall cognitive structure. If the information obtained by the teacher meets the criteria sought, the teacher gives a positive response. Otherwise, the teacher will provide a negative response. However, several factors influence attitudes that are not always rational, for example, teacher knowledge or teacher mood conditions. When teachers engage in low-involvement information processing, in this situation, cognitive responses are less used because the teachers only see the number of features without processing them. It shows that changing attitudes do not always require analysis of the information presented by digital media.

Teachers are more inclined to look at star reviews first on the digital media being assessed. After that, the teacher then assesses digital media by looking at the quality of the features in the digital media. This assessment can be used to explore information so that the information can be trusted and shows the form of information processing performed by users (Shorey et al., 2018). Based on the credibility assessment conducted by teachers, it shows that teachers perform information processing in assessing the credibility of digital media. This can be seen from teachers who want to spend time looking for information related to star reviews on digital media first. Then after getting the information, the teacher can decide to use the media.

In this study, information is successful in changing attitudes and behavior if teachers are motivated and able to process information, and if the process is integrated into cognitive structures. When

attitudes have changed, implementing these changes into behavior requires effort to overcome old attitudes and the process of learning new perspectives. This is done to ensure that the source of information used in learning comes from digital media that has undergone a credibility assessment. The attitude formation and change to determine processes from various sources, recipients, messages, and contextual factors that influence attitudes (Herro et al., 2017). The final goal that wants to be raised is a change in teacher attitudes and behavior; with the teacher knowing the information and choosing the digital media to use, the teacher finds a change in their attitude. Overall, digital media use in learning tends to be seen from the star reviews given by digital media users as a trigger for a credibility assessment.

## CONCLUSION

Credibility is an important aspect to assess the worthiness of digital media for education used in learning. This study examines the credibility of digital media used by teachers to support learning. The credibility assessment is divided into two conditions, namely high and low credibility. Factors assessed as an indicator of credibility include star reviews and feature quality on digital media. The credibility assessment in digital media is closely related to teachers' subjectivity so that the results of the assessment come from the teachers' assumptions. Teachers tend to look at star reviews first before checking digital media features in assessing credibility. This assessment is based on the fact that high-star reviews show that many previous users have the confidence to use this digital media. Then digital media is believed to be credible by the teacher if the existing features meet the information needs that the teacher is looking for so that the media can be used as a learning resource. This research helps provide an overview of how credibility is applied online and recommends more complex evaluations. The results of this study are expected to have a beneficial impact on teachers in developing their digital literacy skills in digital media. The diversity of digital media today provides opportunities and challenges for teachers who use it in learning, so that teachers must be able to assess the credibility of digital media.

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