

## **A Multimodal Discourse Analysis on E-Learning Website at Universitas Terbuka**

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### **Abstract**

This study aimed at finding out the visual elements provided in the e-learning website of Universitas Terbuka. The elements include visual presentation, usability, accessibility, and content. The method employed in this study was Multimodal Discourse Analysis (MDA) involving the visuals of the website as data source which is available at <https://elearning.ut.ac.id/>. The instrument used was visual theories which support the propositions of visual presentation, usability, accessibility, and content to validate the data found. In analyzing the data, interactive analysis was used involving data condensation, data display, and data verification. The findings showed that: in visual presentation, the website portrays good presentation except for its unbalance split; in usability, the website has good extent of usability, this website has provided good navigation system and easy to understand, except for the video speed; in accessibility, all elements of accessibility are achieved well; and in concern of materials, the materials are easy to access and relevant with the learners' need.

**Keywords:** Multimodal Discourse Analysis, E-Learning, Visual Presentation, Usability, Accessibility, and Digital Learning.

### **Abstrak**

Penelitian ini bertujuan untuk mengetahui elemen visual yang terdapat dalam website e-learning Universitas Terbuka. Elemen-elemen tersebut meliputi presentasi visual, kegunaan, aksesibilitas, dan konten. Metode yang digunakan dalam penelitian ini adalah Multimodal Discourse Analysis (MDA) yang melibatkan visual website sebagai sumber data yang tersedia di <https://elearning.ut.ac.id/>. Instrumen yang digunakan adalah teori visual yang mendukung proposisi penyajian visual, kegunaan, aksesibilitas, dan konten untuk memvalidasi data yang ditemukan. Dalam menganalisis data digunakan analisis interaktif yang melibatkan pemadatan data, penyajian data, dan verifikasi data. Temuan menunjukkan bahwa: dalam presentasi visual, website menggambarkan presentasi yang baik kecuali untuk ketimpangannya; dalam kegunaan, situs web memiliki tingkat kegunaan yang baik, situs web ini telah menyediakan sistem navigasi yang baik dan mudah dipahami, kecuali kecepatan videonya; dalam aksesibilitas, semua elemen aksesibilitas tercapai dengan baik; dan dalam hal materi, materi mudah diakses dan relevan dengan kebutuhan peserta didik.

**Kata Kunci:** Analisis Wacana Multimodal, E-Learning, Presentasi Visual, Kegunaan, Aksesibilitas, dan Pembelajaran Digital.

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## **INTRODUCTION**

Multimodal discourse analysis (MDA) is a field of study that focuses on analyzing how meaning is created through the use of different modes, such as language, images, sound, and gesture, in different forms of communication. It recognizes that communication is not limited to verbal language, but also includes other modes that work together to convey meaning. MDA is rooted in the idea that communication is a complex process that involves the use of multiple modes. It is not enough to simply analyze the language used in a text or conversation; one must also consider the visual and auditory elements that are present (Ketut et al., 2019). MDA is particularly useful in analyzing communication in contexts where multiple modes are used, such as in advertising, film, social media, and other digital-sourced media (Liu, 2019). One of the key concepts in MDA is the

idea of semiotics, which is the study of signs and symbols and their meaning. Semiotics recognizes that meaning is not inherent in objects or words, but is constructed through social and cultural practices. In MDA, semiotics is used to analyze the different modes used in communication and how they interact to create meaning. Another important concept in MDA is the notion of multimodal literacy. This refers to the ability to understand and use different modes in communication. In today's digital age, where communication often involves multiple modes, multimodal literacy is becoming increasingly important.

MDA is an interdisciplinary field, drawing on theories and methods from linguistics, semiotics, sociology, psychology, and other disciplines. It has been used to analyze a wide range of texts and contexts, including advertisements, motion pictures, websites, social media, and political speeches. One of various methods used in MDA is the analysis of multimodal texts. This involves analyzing the different modes used in a text, such as language, images, and sound, and how they work together to create meaning. For example, in an advertisement, the language used in the text may be accompanied by images and music that all work together to convey a particular message. Another important method in MDA is the analysis of multimodal interactions. This involves analyzing how different modes are used in face-to-face interactions, such as conversations or interviews. For example, in a conversation, gestures and facial expressions may be used to convey meaning alongside verbal language (Pratiwy & Wulan, 2018). In research, MDA has a number of practical applications. For example, it can be used to analyze advertising and marketing campaigns to understand how different modes are used to persuade consumers. It can also be used to analyze political speeches and debates to understand how politicians use different modes to appeal to voters. MDA can also be used to analyze online communication, such as social media posts, to understand how people use different modes to express themselves and interact with others. Hence, it can also be used to conduct analysis on e-learning displays that are used in widespread nowadays.

As mentioned earlier, under educational circumstances, multimodal analysis can be particularly useful in analyzing e-learning websites, which often use a range of different modes to convey information and engage learners. In e-learning, multimodal analysis can help to identify the different modes used, how they are combined, and how they contribute to the learning experience. One of the main benefits of using multimodal analysis in e-learning is the ability to identify and address issues related to accessibility. For example, learners with visual impairments may rely on audio descriptions or alternative text to access visual content, while learners with hearing impairments may rely on captions or transcripts to access audio content. Multimodal analysis can help to ensure that e-learning materials are accessible to all learners, regardless of their abilities. Another benefit of using multimodal analysis in e-learning is the ability to optimize the learning experience. By analyzing how different modes are used in e-learning materials, lecturers/teachers can identify areas where improvements can be made. For instance, if learners are struggling to understand a particular concept, educators can use multimodal analysis to identify the modes that are being used to convey that

concept and consider alternative modes that might help to clarify it. Multimodal analysis can also be used to improve engagement in e-learning. By analyzing the different modes used in e-learning materials, educators can identify opportunities to create more engaging and interactive learning experiences (Allen & Katayama, 2015). Through the incorporation of videos, animations, or interactive elements can help to capture learners' attention and facilitate deeper engagement with the material. One challenge of using multimodal analysis in e-learning is the need to balance the use of different modes with the need for simplicity and clarity. While using multiple modes can help to clarify and reinforce concepts, using too many modes or using them in a confusing or cluttered way can actually hinder learning. Therefore, it is important to carefully consider the use of different modes in e-learning materials and ensure that they are used in a way that enhances, rather than detracts from, the learning experience.

More specifically, Santoso (2005) and Setiawan (2005) assert that the creation of visual e-learning websites can facilitate the desired learning environment. In addition, according to Metros and Hedberg (2002), the visual delivery of educational content in e-learning is a crucial factor in establishing the atmosphere, conveying essential ideas, and maintaining learners' engagement. The aforementioned description highlights the multitude of factors that necessitate consideration when implementing e-learning as a pedagogical tool. Various factors affect the utilization of e-learning, such as comprehension of online curricula, preparedness of teaching personnel, accessibility of equipment for accessing e-learning materials, presence of e-learning material development teams, learner learning styles, preparation of subject matter instructions, compatibility of e-learning systems with educational institutions, and visualization of the interface of the e-learning system to facilitate everyday teaching. This study centers on the visualization factor of the e-learning system display, as evaluated from the learner's viewpoint, among the eight factors that have been previously identified. The conduction of this assessment is deemed essential as it can equip e-learning website developers with valuable insights to enhance the visual aesthetics of e-learning websites. The research aims to discern the impact of the visual aesthetics of an e-learning website on students' motivation to learn, independent of its primary function as a platform for disseminating educational content.

E-learning has to meet design principles to be considered in a good display criteria (Suyanto, 2007). Design principles are essential guidelines that help designers create effective and visually appealing designs. There are many design principles, but four of the most important ones are balance, contrast, consistency, and whitespace. Balance refers to the distribution of visual elements in a design. A balanced design feels stable and harmonious. There are two types of balance: symmetrical and asymmetrical. Symmetrical balance occurs when elements are arranged equally on both sides of a central axis, while asymmetrical balance occurs when elements are arranged unequally but still feel balanced. Later, contrast refers to the difference between two or more visual elements in a design. Contrast can be achieved through differences in color, size, shape, texture, or typeface. Contrast creates visual interest and helps to highlight important elements in a design. Next, consistency refers

to the use of similar or identical elements throughout a design. Consistency creates a sense of unity and coherence in a design. Consistent use of typography, color, and layout can help to reinforce a brand's identity and make a design feel more professional. Last, whitespace refers to the empty space between design elements. Whitespace can be used to create a sense of balance, contrast, and clarity in a design. It helps to separate different elements and allows the eye to rest, making the design feel less cluttered and more visually appealing.

E-learning websites have become increasingly popular in recent years, especially with the rise of online learning during the COVID-19 pandemic. Despite e-learning websites offer many benefits, such as convenience and flexibility. However, they are not without their challenges. Learners may encounter technical issues as well. These can include slow loading times, broken links, and system crashes. Technical issues can be frustrating for learners and can impact their ability to complete coursework on time. Besides, a lack of interaction and feedback can also be a problem, e-learning can sometimes feel isolating, as learners may not have the same opportunities for interaction with instructors and peers that they would have in a traditional classroom. This lack of interaction can make it difficult for learners to stay engaged and motivated. Later, it can only provide limited access to resources because learners may not receive the same level of feedback on their work as they would in a traditional classroom. This can make it difficult for learners to gauge their progress and can impact their motivation. E-learning requires a high level of self-motivation and discipline. Without the structure of a traditional classroom, learners may struggle to stay motivated and may fall behind in their coursework. Additionally, e-learning may not offer the same opportunities for hands-on learning as a traditional classroom. This can impact learners' ability to fully understand and apply concepts. Last but not least, E-learning courses may not be tailored to the individual needs and learning styles of each learner. This can make it difficult for learners to fully engage with the material and can impact their ability to succeed. Teachers and e-learning providers must work to address these challenges in order to ensure that learners have a positive and effective learning experience.

It is important to examine the use of e-learning because it can help us understand how technology can be used to improve language learning outcomes, as well as identify any potential challenges or drawbacks of using e-learning in language learning classes. By examining the use of e-learning, we can gather data and insights that can inform future language learning practices and help optimize the use of technology in language learning contexts.

Several measurements can be used to evaluate the effectiveness of e-learning in language learning classes. These include learning outcomes, engagement, satisfaction, accessibility, and cost-effectiveness. Measures of learning outcomes, such as test scores, can be used to assess the effectiveness of e-learning in language learning classes. As an example, comparing the test scores of students who have used e-learning tools with those who have not can provide insights into the impact of e-learning on language learning outcomes. The measures of engagement, such as completion rates and time spent on task, can provide insights into how students are using e-learning tools and their

level of engagement with the materials. Furthermore, surveys and other measures of student satisfaction can provide insights into how students perceive the effectiveness and usefulness of e-learning tools. Regarding accessibility, it is concerned with the availability of e-learning tools and resources, can provide insights into how technology is being used to increase access to language learning opportunities. And last, measuring cost-effectiveness, such as the cost per student of using e-learning tools compared to traditional classroom materials, can provide insights into the efficiency and cost savings associated with e-learning.

A study about multimodal in learning application interactivity was conducted Falk & Götz (2019). Through a series of qualitative and quantitative analyses, they investigated the types of interactivity offered by the app Duolingo, as well as its effectiveness in promoting language learning. The study found that Duolingo offers a range of interactive features, including gamification elements, adaptive learning algorithms, and social networking features. These elements were found to be highly engaging and motivating for users, leading to high rates of user engagement and retention. Additionally, the study found that these interactive features were effective in promoting language learning, with users demonstrating increased proficiency in the target language over time. However, the study also identified some limitations and potential areas for improvement. For example, the gamification elements of the app were found to be somewhat superficial and not always well-integrated into the language learning content. Additionally, the study found that the app's adaptive learning algorithms were not always effective in correctly identifying users' language proficiency levels, which could lead to frustration or disengagement.

Another study was conducted by Burset et al. (2006). This study examines interactive resources that have been published for the purpose of teaching Spanish as a first language and English as a Foreign Language (EFL) in primary and secondary educational settings in Spain. This study examines the correlation between textual and visual elements in the Interactive Digital Material (IDM) interface, with the aim of enhancing language proficiency among learners (Chen, 2010). The assessment of screen design is conducted based on formal units of analysis, which include graphic elements such as shape, colour, size, resolution, and significance, typography elements such as style, colour, size, and readability, composition elements such as location and ratio, and action elements such as recognition and effects. The purpose of this evaluation is to determine the functionality of these elements in various learning activities. The paper presents a discussion on how the features of multimodal discourse can impact the processes of language learning.

Multimodal analysis is an important research area in the field of e-learning, as it can provide insights into how learners interact with digital learning resources (Bull & Anstey, 2010). While there is certainly some research on multimodal analysis in e-learning, it is true that there is still much to be explored in this area. One reason for the relatively limited research on multimodal analysis in e-learning may be that this is a relatively new field of study. As e-learning has only become more widespread in recent years, researchers are still working to understand the ways in which learners

engage with digital content and resources. This is the gap that is trying to be met by this current study as there are still few resources found on this topic. Hence, the research question formulated for this study is as follows:

“To which extent does the display of the e-learning at Universitas Terbuka meet the criteria of good design including visual presentation, usability, accessibility, and content?”

## **METHOD**

This research was carried out using a multimodal analysis approach. MDA is a research approach that involves analyzing multiple modes of communication, such as text, image, sound, and video, in order to gain a deeper understanding of a phenomenon. This approach can be used in a variety of research contexts, including social science, education, and linguistics. The first step in designing a multimodal analysis study is to identify the research question or problem. This will help determine which modes of communication are most relevant to the research question and which analytical tools and techniques are needed. The next step is to collect data that includes multiple modes of communication, such as interviews, videos, images, and text. In this study, the data source is e-learning website from Universitas Terbuka. It is important to ensure that the data collection methods are appropriate for the research question and that the data is of high quality.

Once the data has been collected, it is analyzed using visual analysis, as it relates to the research questions being addressed. According to Kress and Van Leeuwen's (2006) findings, the comprehension of visual information is derived from the processing of moving images that are presented in educational materials, such as videos. Kress and van Leeuwen (2006) explicated a lexicon for visual interpretation, specifically pertaining to the domain of motion pictures and films. This involved the identification of visual comprehension as a fundamental analytical framework. The aforementioned pattern closely adheres to the fundamental metafunction posited by Halliday and Matthiessen (2004) within the framework of systemic functional grammar (SFL). The metafunction comprises three distinct categories, namely ideational, interpersonal, and textual. The ideational metafunction utilizes the ontological significance of a communication that has been encoded by the speaker or author. The interpersonal metafunction pertains to the perspectives of the recipient, who may be either an audience or a reader. The textual metafunction highlights the significance of the perspectives of both the encoder and decoder. The integration of the three metafunctions into language learning is regarded as a component of social semiotics, which serves as a valuable tool for comprehending and resolving the significance of communication both in a broad sense and in specific contexts. Kress and van Leeuwen (2006) have identified metafunctions and visual complementarity as essential components that must be integrated into all visual content, with reference to the concept of *visuality*.

According to Bowen (2009), the process of data collection involves adhering to a set of documentation procedures. The procedure consists of the subsequent actions. The initial stage

involves the selection of a video. In this particular study, the researcher opted to utilize e-learning website provided by Universitas Terbuka that can be accessed at <https://elearning.ut.ac.id/>. Subsequently, the researchers chose visual data that pertains to the objective of the present study. Subsequent to the identification of data pertinent to the research objectives, the researcher opted to choose multiple illustrations from each category for the purpose of exhibiting the data. Later, the researcher proceeds to categorize and extract information pertaining to Kress and van Leeuwen (2006) visual criteria.

Upon extraction, the data shall undergo analysis through Interactive Analysis, as recommended by Miles et al. (2014). The model comprises of three distinct steps, which are delineated as follows. Data condensation is a method that involves the selection, concentration, simplification, abstraction, and transformation of data found in field notes or transcripts. Subsequently, in this stage, the data will be presented in a precise and lucid tabular format. This research elucidates the principles of visual grammar utilizing the theoretical framework proposed by Kress and van Leeuwen (2006). The final step involves data verification, wherein all collected data is systematically classified based on the research questions. Specifically, the data is categorized into three distinct types, namely representational meaning, interactive meaning, and compositional meaning, as they pertain to the video being analyzed.

## **RESULTS AND DISCUSSION**

Below is provided the result of visual elements based on the first question “To which extent does the display of the e-learning at Universitas Terbuka meet the criteria of good design including visual presentation, usability, accessibility, and content?”.

In concern with visual presentation, the findings indicate that the preparation and management of various information and lesson instructions are critical components that demand attention and contribute to shaping the visual presentation of an e-learning platform. From the perspective of multimodality, the e-learning website's visual presentation is perceived as a cohesive system that enables learners to select their preferred subjects, engage with the subject material, furnish answers to posed questions, and locate the information they need with minimal effort. The elements of consistent presentation are consistent color, whitespace, background, and layout. In the following are provided the visual presentations of the e-learning website.



Figure 1. Login Interface



Figure 2. Course Greeting Interface



Figure 3. Course Session Interface

From the picture above, it can be seen that the color used is in uniformity in all sessions (Sesi 1- Sesi 8), including in the course greetings and menu. This particular e-learning website employs the Split Left – Right Index layout model, as evidenced by its visual mapping. The webpage's layout is structured in a bifurcated manner, with the intent of effectively organizing the information presented. This is achieved by segregating the information display area into two distinct columns. The application of the principle of balance in website analysis suggests that an optimal website appearance can be achieved through the equilibrium of display objects. The e-learning website's display violates the principle of balance, as evidenced by Figure 4. This is due to an apparent discrepancy between the overall length of the submenu section and the length of the displayed content.



Figure 4. Website Unbalance

The e-learning website was observed to uphold the principle of color, as evidenced by the well-maintained level of contrast and the ease with which information is displayed and read. The website's



color scheme effectively ensures legibility by carefully considering the contrast between the background and text colors. The website's implementation of information hierarchy is evident through the utilization of distinct colors and font sizes that serve as effective visual cues. In addition to the implementation of color, the aforementioned website employs images as prominent features to serve as a central point of interest for users seeking to access relevant information. Figure 5 below depicts the highlight menu featured on the website.



Figure 5. Website Highlights

The ineffective utilization of the whitespace on the e-learning platform, resulting from the arrangement of data in dual columns, leads to an unbalanced presentation. The sensation of emptiness is further accentuated when the user accesses the website through a browser, as scrolling down generates an empty impression at the bottom of the page. It is not necessary to include all of the displayed lesson information, as only the material pertaining to the primary groups is adequate. Figure 5 displays the modified layout information of the side menu. The settings are organized based on reading patterns, with the most crucial ones positioned at the top and the least significant ones located at the bottom left. The implementation of the new settings is anticipated to enhance the overall user experience and facilitate efficient information retrieval for users of the Universitas Terbuka e-learning website. This is attributed to the settings' ability to create a comprehensive and robust impression of the website.

Later, in regard to usability, usability of a website is analyzed in regards of website navigation system, speed, easily-comprehended structure of the website, and easily-differentiated interfaces. The website's navigation system is designed to be user-friendly, as evidenced by the utilization of prominent highlights located in the upper portion of the window. As illustrated in Figure 5, the process of locating dashboard information, home, grades, messages, and other key features is straightforward for learners. Moreover, the depiction of the website interface is relatively uncomplicated and user-friendly. When talking about accessibility, it refers to the use of common file format, the use of various icons, and printable materials. The website utilizes prevalent file formats, including Microsoft Word documents, PDF files, and other digital files that can be shared through easily accessible hyperlinks. Furthermore, the icons are currently being utilized. Furthermore, the materials have the capability to be printed on the learners' demand. This can ease the learning process as the learners can access the links earlier at their own pace. This can reduce the pressure and anxiety in learning as well as supported by Novawan (2016).

### ***Discussion***

What important regarding the learning contents is that the contents need to be up-to-date materials, easily accessed, and relevant between the highlight and materials. Rahmawati et al. (2023) supports that learners are disinclined to enroll in a course that fails to offer supplementary benefits to their existing knowledge. Hence, the e-learning website of Universitas Terbuka provides the learners/users who enroll in the course with valuable and the most supportive content possible. Furthermore, the content is pertinent to the learners. Primarily, it is imperative that the content provided is pertinent to the learners' profession and trajectory. As it is known that learners at Universitas Terbuka are from different backgrounds of age, origin, and professions. Primarily, Universitas Terbuka supports a significant number of individuals who endeavor to locate contents that can enhance and bolster their occupation. Furthermore, this website generates educational material that aligns with the preferences and inclinations of the learners. For example, English courses available for English department students and Elementary Education students are not similar. Mainly, the objective is to enhance the efficacy of the learning to occur. Consequently, learners are more likely to locate and acquire knowledge that aligns with their personal interests and intellectual inquisitiveness.

Moreover, the learning materials are readily accessible. It is comprehensible that students may have a desire to evade engaging in arduous and demanding tasks. As individuals, all learners possess this characteristic. Undoubtedly, all students are novices to the knowledge and information presented in the lesson. Complex instructions may lead to failure. This is what leads the e-learning of Universitas Terbuka to provide easy-to-follow instruction to all lessons and, therefore, this website has already created contents that are easily comprehensible for the intended learners/users to facilitate their learning and engagement.

In the majority of circumstances, the initial impression holds significant importance. If wondered, how a learner will approach a course that presents a multitude of intricate mathematical equations and convoluted explanations upon initial exposure, of course s/he will straightforwardly deactivate the device and postpone the task. Likewise, learners will experience similar emotions when presented with challenging material. Opting to wear a garment labeled as "easy" may prove to be a favorable decision for individuals in the creative field. Additionally, by providing a simplistic coat, students may be inclined to explore the course and complete the given tasks. The individuals in question may possess a desire to gain further understanding, yet may not fully comprehend the level of difficulty associated with such an endeavor. Engagement of learners in the content can prevent any interruptions to their learning.

### **CONCLUSION**

It can be concluded that from four elements of design portryed in this study, all elements are almost satisfied in e-learning website of Universitas Terbuka except the balance and updated

materials. In term of visual presentation, the employment of color, whitespace, and layout has already met the good criteria of visual design. Later, it regard of the usability, this website has provided good navigation system where the users can easily comprehend the website structure and the variant of interfaces such as discussion, tasks, and other additional information. For speed, the website has reached good speed except for the video loading, let alone the embedded video from outer sources. About accessibility, the website has achieved good accessibility. Last, the content materials need to be periodically renewed. However, The materials provided are consistently accessible and pertinent to the subject matter being discussed during the session.

It is important to address that besides the findings that have been presented, this study is not without limitation. The MDA approach employed in this study merely analyzed the website from theoretical viewpoints. Future research is anticipated to explore the user experience of website interfaces, encompassing both learners and instructors.

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