

Exploring EFL Students' Digital Multimodal Composing (DMC) Affordance: Stories from a Vocational School

Dyah Retno Wulan¹, Nur Arifah Drajadi², Slamet Supriyadi³

¹ Universitas Sebelas Maret, Indonesia; dyah.retno.wulan@student.uns.ac.id

² Universitas Sebelas Maret, Indonesia; nurarifah_drajati@staff.uns.ac.id

³ Universitas Sebelas Maret, Indonesia; pripus.lppmuns@yahoo.co.id

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ABSTRACT

Due to the massive advancement of media and communication technologies, educational institutions all over the world have recently realized the need of encouraging multiliteracies, whether in schools or at universities. There is rising interest in incorporating digital multimodal composition (DMC) into ELT education. While the use of DMC for multiliteracy development is well established, the important question of how DMC could boost English learning, especially in EFL settings, remains unaddressed. This paper analyses the affordances of DMC for EFL learning using findings from an Indonesian DMC program. Data were collected from interviews and questionnaires which were given to the students. Then the data were analysed by using narrative inquiry analysis to locate the relevant information with a range of technical, pedagogical, and social affordances, all of which had varying and interconnected effects on their EFL learning. This study revealed that DMC might also allow students to be completely creative with technology in their activities, open up new learning opportunities, and increase students' social awareness. Finally, this study demonstrates how affordances might improve students' involvement with English learning. However, this study is limited only to students from vocational high school. Other researchers are expected to cover a wider area of study and get the experience from teachers who conducted DMC in their classes.

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Corresponding Author:

Dyah Retno Wulan

Affiliation 1; dyah.retno.wulan@student.uns.ac.id

1. INTRODUCTION

The wide use of media and communication technologies has forced educational institutions all over the globe to recognize the need of developing multiliteracy, both in schools and universities. As a

result, teachers began to teach their students using Digital Multimodal Composing (DMC), which may include semiotic modes in the text, picture, and sound that presented a layer of literacy (Jiang, 2017). The method meets the demands of English language learners in the digital era by engaging in multimodal forms of communication through digital media that are integrated with the main reading and writing activities of conventional methods to ELT. This makes the learning process more interesting because it uses technology-based learning. DMC offers affordance to the students that use it. The perceived affordance is intertwined with the technical, educational, and social domains.

In general, DMC refers to a textual activity that incorporates the use of digital technologies to compose texts by merging several semiotic modalities, such as picture, word, and audio. Examples of DMC include video creating and audio podcasting, which are becoming more widespread among modern English language learners. Many scholars have claimed that DMC should be integrated as an intrinsic component of ELT pedagogy in ELT contexts, making it vital for language teachers to understand its instructional potential for specific learning goals (Early et al., 2015; Kress, 2003). Therefore, DMC has grown as a learning trend in the ELT classroom, with advantages for promoting student creativity, delivering authentic learning, fostering student cooperation, and encouraging critical thinking.

The study of DMC has been investigated by many researchers. For instance, Liang & Lim (2021) provide a pedagogical framework for guiding the teaching and learning of digital multimodal composing activities. The pedagogical framework was valuable to both the teacher and the students in organizing the learning and constructing the knowledge bases necessary for efficient digital multimodal composition. Then, Tour & Barnes (2021) highlighted that DMC provided students with a variety of learning opportunities to be much more familiar with technology, increase their collaboration skills, and, as a result, be more qualified for digital journeys. However, in trying to make the ideas a reality, many programs should involve digital literacies in the curriculum to provide language learners with essential digital competencies (Tour, 2020). Xie et al. (2021) had conducted research to integrate social media based on multimodal composing activities for students from senior high school and undergraduate school. The study discovered that multimodal composing increased EFL learners' English overall writing performance. It is also supported by Djamdjuri et al. (2021) who found that multimodal activities helped students to improve their English language skills and get a lot of students' interests. Another research by Jiang & Luk (2016) highlighted that the students were interested in multimodal composing as a result of the challenge, curiosity, control, collaboration, competitiveness, and recognition that they experienced following the implementation of multimodal composing in their classroom. Muyassaroh et al. (2019) revealed that DMC is the most effective way for changing vocational students' perceptions of English from one of the most difficult subjects to one of the most enjoyable. Thus, Students' cognitive skills improve as a result of using multimodal texts, as well as their creativity, attention, engagement, and productivity. According to the findings of previous research, digital multimodal composing has been shown to increase student interest in learning English, improve language skills, and make learning more enjoyable to follow.

In addition, Kress (2003) has utilized the notion of affordance in the field of multimodal social semiotics to investigate the possibilities and constraints of a particular mode or medium in meaning representation and communication. A modest amount of research that investigated how various digital tools and semiotic modes may provide users with new methods of meaning-making. For example, Burn (2009) claimed that video production might provide chances for meaning-making such as 'iteration' (continuous revision) and 'feedback.' Ranker (2015) revealed digital video provides montage (the placing of pictures into a certain sequence) as a means for students to investigate curricular issues, although with time and duration limits.

The idea of affordance is defined as the opportunities provided by DMC for students to act to learn English. This interpretation is consistent with Gibson's (1977) definition, which states that affordance is an action possibility formed by a relationship between a human agent and an environment that defines how the human agent may act and behave. This means that human activities, such as EFL learning, are dependent on a perception of affordances. According to Norman (1999), such perception is based on the human experience. This suggests that the action of participating in EFL learning during DMC is shaped by how teachers and students perceive what DMC can do for them, rather than by what DMC naturally offers. This suggests that before teachers and students can identify DMC's affordances, they must gain hands-on experience with it.

As reported by Jiang (2017), students gained access to a variety of technological, educational, and social affordances because of DMC's inclusion in an EFL curriculum, all of which had multiple and interconnected effects on EFL learning. Furthermore, 'technological affordances' are digital aspects of DMC that allow students to invest in EFL learning at their own pace and in a way that is personally relevant to them; 'educational affordances' are learning opportunities for students to access a changing classroom experience and learn knowledge and skills that are not available in their traditional curriculum; and 'social affordances' are DMC characteristics that provide contextual facilitation to students' social lives, such as participation and interaction.

Table 1 provides an overview of these affordances, including important themes and sub-themes. Specific quotations (translated from Indonesia to English by me) for each subject are supplied in the following sections. To address the two study objectives, I will next elaborate on the precise components of each affordance and explain how they assisted EFL acquisition using examples from the cross-analysis.

Table 1. Affordance by Jiang (2017)

Theme	Sub-theme	Indicator
Technological affordances	The Digital record of EFL performance	Revision
		Exhibition
	Transmediate across modes	meanings Customize meanings Relating English to 'real life'
Educational Affordance	New classroom learning experience	Easier to understand and speak up in class
	Learning English beyond classrooms	Learn English in imagined/ authentic settings
	Learning multiliteracies	Multiple literacies skills
Social Affordance	Peer interaction	A community of EFL learners
	Student-teacher interaction	Reversed hierarchical relations
	Civic participation	A participatory culture

The significance of this research is that it examines the application of digital multimodal composing in vocational high schools in Indonesia. As we all know, research on DMC is still limited in Indonesia, especially in the context of the affordability of DMC among vocational high school students. Furthermore, this study focuses on the experiences and perspectives of vocational high school students after they have used DMC in the classroom. This study will also contribute empirically to the understanding of students' perceptions on the usage of DMC, which may subsequently be used as references for teachers or institutions wishing to employ DMC in their classrooms. Therefore, this study resulted in two research questions regarding the affordance of Indonesian EFL students in using digital multimodal composing in vocational high school, those are:

1. What Digital Multimodal Composing affordances did students identify in EFL learning?
2. What impacts did the affordances of Digital Multimodal Composing have on students' EFL learning?

2. METHODS

This study used the narrative inquiry method to explore and reflect the story of the students who used DMC in English learning. Connelly and Clandinin (1990) said that narrative inquiry is a form of narrative experience, and educational experience should be investigated narratively. The narrative inquiry also builds on the significance of narrative as a way of making meaning and views. Moreover, Barkhuizen, Benson, & Chick. (2014) narrative inquiry is a suitable design for a researcher who wants to study in the language teaching and learning field because it is constructive for us to understand the inner mental worlds of language teachers and learners and the nature of language teaching and learning as a social and educational activity.

The core strength of narrative inquiry is how people utilize stories to help others comprehend their experiences in domains where it's critical to understand phenomena through the perspectives of those who have experienced them (Barkhuizen, Benson, and Chick, 2014). Therefore, the data related to students' experiences when using DMC will then be analysed and found the themes. In this situation, the study focuses on the students' affordance to use DMC. The participants consist of 25 students who were in an Indonesian vocational high school, and they had experience using DMC in English learning. The students were asked to make argumentative writing about Breakwater and Seawater Agribusiness which includes various modes such as picture, video, and sound.

The data were collected by using an open-ended questionnaire and semi-structured interview based on the Jiang (2017) conceptual framework. The questionnaires were distributed to students through the Google form, after the results of the questionnaires were obtained and briefly analysed, then an interview was conducted. There were 10 interview points consisting of 4 technological affordance items, 3 educational affordance items and 3 social affordance items. Interviews were conducted both individually and in groups by using the online platform or meeting in person for approximately 30 to 60 minutes per person in each session. The results of the interviews were recorded so that they could be heard again.

2.1. Research Context

This study was part of a research project in which I, as a researcher and a teacher, collaborated with twenty-five students in a vocational high school based EFL curriculum in Indonesia to implement the DMC program. This course was both textbook-based and exam-oriented. Moreover, this study was conducted to encourage the use of technology in teaching English as a foreign language. I took the initiative in organizing DMC activities, and I provided the required materials, resources and consultations.

During the month-long DMC program, I introduced students to various digital tools such as video editing software and multimodal resources such as images, sound or audio and videos, after which they

invented to create a 2 to 5-minute video to demonstrate their comprehension of the curricular theme. Students spent an average of 2 to 3 weeks creating videos on laptops, desktop computers or mobile phones. All students participated in various learning activities throughout DMC, including collecting/creating multimodal materials, editing videos/sound recordings, performing, writing scripts, and publishing videos to the internet such as YouTube and Instagram. I provided scaffolding to students through lessons that focus on the technical components of DMC.

2.2. Participants

The participants consisted of 25 students who volunteered to be a respondent to this research. The participant came from a vocational high school in Indonesia. The twenty-five students were 14 female students and 11 male students, were diverse in age (17 - 19 years old) and family background, with an intermediate level of English language proficiency. The participants produced the argumentative essays using images, audio, and video. Purposive sampling was used to select the respondent. The respondents were chosen where all the students had experienced the use of DMC during the class. Before consenting to become a research respondent, all participants signed an informed consent form stating that they are willing to be respondents in this study and that their names would be kept private. For research purposes, just a subset of the data will be presented.

2.3. Data Collection and Analysis

This study used in-depth interviews and written reflections from the students as data collection methods. At the end of the project, an in-depth interview was conducted with each student leading them to reflect on the role of DMC in shaping EFL learning. Then the 25 students were asked to write their experience in the written reflection and narrate their experiences in more detail, to collect information and students' experiences during completing tasks using multimodal composing and also to triangulate and enrich the interview data.

The interview data were transcribed and analysed through interactive model analysis (Miles et al., 2014). First, data condensation is the stage in which the obtained data is simplified to provide the data required for the study. The coding procedure is also carried out at this stage to offer topics for the findings later. Following that, data will be shown in the form of charts, graphs, or tables, with simplified data. This type of data presentation is used to make it simpler to see the data obtained. The last stage, concluding, is when the researcher attempts to derive inferences from the data that has been collected. Furthermore, at this step, researchers will re-bind data collecting, compress data, and show data to get more exact results.

Table 2. Example of Data Display

Theme	Question	Answer	Coding
Technological affordances	Do you have full control to complete the task to make argumentative essays multimodality e.g., producing video etc. and make various improvements so that the tasks are in accordance with what you want? e.g., video argumentative	Yes, I have full control in doing my assignments, but if I have problems, I ask for help from the teacher, group friends or between groups, and sometimes look for it on social media such as Google, YouTube, or others.	Revision (Tech Affordance) From the statements submitted by respondents, it can be said that the use of DMC provides a sense of control. So that the result is competent in the subject.

Theme	Question	Answer	Coding
	Are you well prepared for the argumentative essays multimodality to be presented in class? e.g., browsing the material, googling etc	Yes, I try to do my best to prepare for assignments, such as studying them before the assignment is discussed in class, such as making an argumentative essay. I studied first from google via cell phone what is the meaning and structure	Exhibition. (Tech Affordance) It can be said that DMC pushed the students to try harder to make their works better since they need to exhibit their works in front of others
	Do you use existing media to actualize the ideas that you want to convey to the audience? e.g., PowToon etc	Yes, I use some new media I know. on the first day, I used a projector, HDMI dongle, for the next days there was the Grammarly application for translating, AZ recording for recording sound, and PowToon for producing and video editing, this will be very helpful for me in the future if I find a similar task	Customize meaning (Tech Affordance) DMC made the students customize how they delivered the material beyond the limit of language.
	Do you make the argumentative essays multimodality using the media that is "currently" being used? e.g., PowToon etc	Yes, I use media that is currently hitting new media, such as laptops with high specs, as well as PowToon and Translator applications	Relating English to real life (Tech Affordance) DMC made students gain relevance between English and the use of media.
Educational Affordance	Do you have access to a variety of available resources by using DMC? e.g., YouTube, Google search, etc	Yes, so I can access various sources such as Google to find material for argumentative essays and YouTube to find tutorials on how to make it.	Easier to understand and speak up in class (Educational Affordance) The DMC method made it possible for the students to access various learning materials.
	Do you use resources that are around you and that are relevant to your daily life? e.g., social media	Yes, it is relevant, and it happens all around us and I saw first-hand the negative impact and I raised it as an argumentative essay	Learn English in imagined/ authentic settings (Educational Affordance) DMC made students learn English in an authentic context.

Theme	Question	Answer	Coding
	Can you explain what resources you use to complete argumentative essays? e.g., google etc	YouTube, google, web news, Grammarly, teacher and some other mentors	Multiple literacies skills (Educational Affordance) DMC made students learn a lot of educational sources.
Social Affordance	How is the atmosphere when working with a group? e.g., fun, bored What kind of interactions occur? e.g., peers etc	It's very fun, gaining new knowledge, and chatting about various things, not only about assignments, and helping each other when there are difficulties between groups	A community of EFL learners (Social Affordance) DMC enhance students interact with their peers and their teacher
	Do you have the power to explain the argumentative essays to the teacher? e.g., free in expressing the ideas, concepts etc	Yes, when I have a concept of the task I will be doing, I fully understand how I want it, and when I present the results, I present what I have done without the intervention of others.	Reversed hierarchical relation (Social Affordance) DMC allows students to present their materials in the class while the teacher needs to listen to what they say.
	Did you include the social issues that are around you or those that are being discussed a lot when you are working on it? e.g., environment issue, aquaculture issue.	Yes, the cultivation of floating net cages is being discussed because the more widespread the use of marine cages, the higher the negative impact produced and the impact on the surrounding environment...	A participatory culture (Social Affordance) DMC is also able to make students increase their awareness about social issues by bringing them into the task.

3. FINDINGS AND DISCUSSION

This study found that DMC, as part of pedagogy, has a range of technological, social, and pedagogical affordances. The result of this study supports the research conducted by Jiang (2017) who found that by incorporating DMC into EFL teaching, a variety of technical, pedagogical, and social affordances have become available, with multidimensional and linked effects on students' EFL learning.

According to the student's experiences and perceptions, the three major affordances were synthesized based on Jiang (2017) research on the affordance of DMC as 'technological affordances' (digital aspects of DMC that enable students to invest in EFL learning in a self-paced and personally relevant manner), 'educational affordances' (learning opportunities for students to access a changing classroom experience and to learn knowledge and skills that were not available in their conventional curriculum), and social affordances' (social aspects of DMC that enable students to social interaction and participation).

3.1. *'I met various learning technology and make use of it'*

In technology affordance, The DMC offers students the opportunity to complete tasks based on their preferences. They want to showcase their finest version in class. As a result, self-confidence and competence are increased. Smeda et al. (2014) highlighted how to create more engaging and interesting learning environments, digital multimodal is a strong technique for integrating instructional content with learning activities. The same idea was conveyed by Kustini et al. (2018) indicating that multimodal-based education has the potential to increase learners' language skills, motivation, engagement in learning, and critical awareness skills.

In this study, through a written diary and an interview, a total of 25 students shared their experiences and perspectives on the usage of DMC. When utilizing DMC, students have complete control over their assignments based on the data received. They have the flexibility to solve issues, to be creative by utilizing many accessible media, and to take responsibility for the responsibilities assigned to them.

"Yes, I have full control in doing my assignments, but if I have problems, I ask for help from the teacher, group friends or between groups, and sometimes look for it on social media such as Google, YouTube or others." (Personal Communication, 2022)

"I have full control in doing the task, although in doing the task several times there are errors, I continue to try to correct the error so that the results of my assignment are as I want." (Personal Communication, 2022)

This implies that students have complete control over how tasks are completed. Students have complete control over the work and can alter it to their desire. Of course, by utilizing the technology around them, specifically digital technology. Another finding is that students are more serious about completing assigned tasks. They try to be the best in their field. Furthermore, they make use of current digital technologies such as voice recording technology, video editing, and sentence translation. They can communicate their thoughts and feel comfortable expressing what is on their mind by using various modes.

"I try to do my best to complete the task, such as studying it first before the assignment is discussed in class, making argumentative essays, but before that, I learned first from google media via mobile phone what the meaning and structure are." (Personal Communication, 2022)

"I used some new media I found out on the first day. I use a projector, an HDMI dongle, for the next few days there are Grammar applications to translate, AZ recording to record sound, and PowToon to edit videos, these will be very helpful for me in the future if I find a similar task." (Personal Communication, 2022)

Participating in DMC also enables students to recognize and use the many available learning technologies. When opposed to the traditional method, they find it simpler to understand the subject delivered through DMC. Not all students can grasp the topic just through voice; some require visual aids such as drawings or films, which eventually boost students' engagement in class.

3.2. *'I have numerous learning options and promote multiliteracies'*

Using DMC as a learning method for students opens them with a variety of learning options. Learning that was previously solely done through lectures is now made more exciting with the use of DMC. Learning begins to use media such as visuals, voice, and video. As a result, students are more

likely to pay attention to and understand the teachings being delivered. Whenever working on projects in multiple forms, students should practice teamwork as well as critical thinking.

"I became able to access various sources such as Google to find material for argumentative essays and YouTube to find tutorials on how to make it." (Personal Communication, 2022)

The use of DMC indirectly familiarizes students with multiple sources for working on projects from various platforms. It facilitates their understanding of the content under discussion while also improving students' English language abilities authentically.

"Because the topic I took was in accordance with the major I took, which is related to aquaculture." (Personal Communication, 2022)

"I use various sources to complete this task, for example, I use YouTube for reference using the PowToon application, google to find the material that I will use, google translate to translate the material that I will present, Grammarly to detect the accuracy of the text." (Personal Communication, 2022)

Based on the data collected, DMC not only expands students' understanding of learning options but also their multiliteracies. The students have a strong effort to succeed in their best performance. As a response, since the work will be presented in front of the class, the students are compelled to do it. For example, if one of the students uses voice-over technology in their tasks or if they believe their English is inadequate, they can use the online translation platforms provided on various websites. It is possible to conclude that DMC is connected to education. The results show that students have a variety of learning opportunities while utilizing DMC in the classroom.

3.3. 'I interact with peers and raise social awareness.'

In terms of social affordance, by applying DMC, students interact with their peers and teachers more frequently. As stated by Jiang & Luk. (2016b) claimed the importance of multimodal skills in encouraging peer mentorship for cooperative learning. Peer interaction enables students to collaborate to discuss the topics they are working on and to use several applicable modalities. The DMC program also promotes beneficial interactions among members of the group. This is highly important, especially for improving collaboration and teamwork abilities that will be required in the workplace later. According to one participant:

"Good interaction as we correct each other the tasks we do together, we share tasks with each other in our group." (Personal Communication, 2022)

Interaction occurs not just between students, but also between students and teachers. Students stated that interacting with the teacher aided them in completing the assigned work. By communicating with the teacher, they get fresh ideas to help them finish their homework. Something difficult to gain through traditional learning.

"The atmosphere when doing the task is quite pleasant but sometimes, I feel excessively tired due to interactions between groups that influence all activities. Interaction with the teacher is also very helpful so the task is completed quickly." (Personal Communication, 2022)

Other data suggest that DMC that employs several modes enables students to thoroughly prepare the subject by discussing what will be delivered in class with their group members. Subsequently, the students feel a sense of responsibility for the things that are their tasks.

“Because at the end of the project there will be a group presentation and interaction between groups is needed so that the presentation is smooth, and the project is successful.” (Personal Communication, 2022)

“Yes, when I have a concept of the task I will be working on, I fully understand how I want it, and when I present the results, I present what I have done without the intervention of others.” (Personal Communication, 2022)

“In our opinion, the themes we address are being debated by the community and the results are also helpful for the community so that they are aware, and I hope that the knowledge expressed is valuable for the future.” (Personal Communication, 2022)

Additionally, students involved in the DMC program relate their assignments to current issues that are being discussed around them. As a result, the content offered feels more authentic and raises awareness of local social problems. It is supported by Jiang & Gao (2020) who claimed that DMC can enhance the social awareness of students even from social media. Students may connect what they are doing to what is being discussed, making learning more authentic. Students learned English for culturally relevant and genuine reasons, which explains their improved involvement with EFL studies during DMC.

In this research implies that DMC is a key learning activity that should be addressed in EFL for the digital era. Furthermore, DMC makes studying more engaging to improve the 4Cs abilities required in today's world. Learning is offered not just through lectures, but also through the use of videos and visuals that pique students' attention. DMC also increases students' technology understanding. Students' technological expertise is critical for their future careers. It is in line with Schmidt (2019) who stated that digital multimodal composition is vital for students' future academic and professional careers.

4. CONCLUSION

This study contributes empirically to examining the affordance of DMC for vocational high school students. This study resulted in three kinds of affordance, such as technological, educational, and social affordance. The findings indicated that DMC also allowed students to be creative with technology in their tasks, which opens various learning possibilities and raises students' social awareness. However, this research only captured student perceptions about the use of DMC in a vocational high school. Another research project is expected to cover a wider area of both students and teachers in vocational high schools and other levels. It is important to note that DMC is not only a solution but also an ideal strategy to improve EFL students' multiliteracies in the digital age. The DMC approach requires students to collaborate with their peers and the teacher. Another important element to note is that a teacher does not have to be a DMC specialist to conduct DMC. Teachers can easily apply DMC; the only thing needed is for teachers to be willing to adopt DMC for the affordance to be realized.

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