

# ENHANCING WRITING SKILL THROUGH DIFFERENTIATED LEARNING BASED ON UNDERSTANDING BY DESIGN (UbD) AND ARTIFICIAL INTELLIGENCE (AI)

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## ABSTRACT

Writing skill is a skill that is highly emphasized so that Indonesian students can truly master it in today's digital era. In learning English at MA level, writing skill on report text is thoroughly prioritized, yet it is still hard to be proficient in by students in class X-I MAN 1 Pasuruan. For this point, researcher carried out best practice learning by implementing differentiated learning based on UbD and AI in class. The implementation of differentiated learning includes 3 kinds of differentiations; materials, processes, and products. Afterwards, the whole learning process is integrated with UbD steps and AI. The aim of this best practice is to enhance students' writing skill in class X-I MAN 1 Pasuruan on report text through implementing differentiated learning based on UbD and AI. After this best practice was carried out, several conclusions were obtained. First, the learning results show that students are delighted with the provision of cognitive and non-cognitive diagnostic assessments to become aware of their respective learning styles. Second, the use of students' worksheets (LKPD), in truth, could not made students interested in enjoying the learning process. Nevertheless, finally, students stated that they could understand the material provided. Suggestion and recommendation from this best practice are that the differentiated learning approach is worthy of being practiced by educators wherever they are and it also really needs to be integrated with other learning approaches or strategies or methods and of course also taking advantage of technological developments in learning.

**Keywords:** AI, Differentiated Learning, UbD, Writing Skill

## INTRODUCTION

During learning English at the MA level, one of the skills in English is writing texts. In the *Kurikulum Merdeka* (Emancipated Curriculum) document which is currently being used, for grade X, there are several types of texts that must be mastered by students, included: descriptive text, narrative text, procedure text, and report text (Kemendikbudristek, 2022). Of the four types of text, writing report text is closely related to people needs in the digital era. The need for texts presented factually (IELC, 2022), concrete, detailed, accurate and fast (Taylor, 2023) is a necessity for anyone or any institution to provide actual information (IELC, 2022) to the wider community digitally. Therefore, the skill of

writing report text is very important for students to master.

There are two most important aspects in report text that must be studied and mastered, namely the structure of the text and the linguistic elements. The text structure consists of two things: general classification and description, while linguistic elements consist of simple present tense and logical connector (Rais, 2023). Apart from that, another aspect that must be mastered is sufficient vocabulary as the main support for the text to be composed. The vocabulary that is owned can of course be obtained from a structured learning process in the classroom or the independent learning process of students wherever they are (Ehmer, 2020). By mastering several important aspects of this report

text, students will be able to compose or write this text well and correctly according to its social function.

Based on the description of the benefits of mastering report text above, the researcher observed that this was discomforting the students in class X-I MAN 1 Pasuruan. Referring to previous studies in teaching and learning activities for English subjects in class X-I, writing skill report text students are still considered very low. Researcher analysed the causes of this low skill due to two main reasons. First, the learning strategies used in the learning process are still conventional so they do not attract interest and provide challenges to students. Second, prerequisite skill such as understanding Simple Present Tense and Logical Connector correctly is still not sufficient and vocabulary mastery is still low. This situation is in line with research held by Iskandar (2021), Kurniawan (2022), and Abbas & Dwita (2019). From several of these studies, problem of writing skill is the problem report text students must get the right solution from educators.

Some researches to improve students' writing skill in report text have been carried out by educators. Iskandar (2021) in his Classroom Action Research (CAR) for class IX students stated that differentiated learning can improve writing learning outcomes report text. Similar research but with an approach Project-Based Learning (PjBL) has been carried out by Kurniawati (2022) and has succeeded in improving student learning outcomes in class IX. Likewise, research using a collaborative learning approach carried out by Srikandi (2022) was able to improve learning achievement in class based on artificial intelligence which has now become a trend in all areas of life, including the world of education and of course this is in accordance with the current developments that educators and students have to face.

The application of the UbD design has also been practiced in several classroom studies. Saodah, et al., (2023) in their Collaborative CAR put the UbD design into practice through the application of the RADEC model with the result of increasing the understanding of class IV students at SDN 037 Sabang in the science subject. Ramli & Argaswari (2023) have continuously tested prospective teachers on their campus to apply UbD in the learning process more comprehensively. From the two good practices above, Setiyawati, et al., (2023) confirmed conceptually that UbD can improve

the quality of students' understanding of what they have learned in class. Based on the discussion above, the UbD design is suitable for use by educators in the classroom according to the subject and level taught.

Differentiated learning is currently a recommended learning strategy to be implemented in the learning process. At length, Purba, et al., (2021) in Academic Manuscript Principles of Differentiated Learning Development (Differentiated Instruction) explained that this learning was designed to serve as fully as possible the various differences in learning styles and abilities of students in the class (teaching at the right level). This book was published completely inspired by the book entitled *How to Differentiate Instruction in Mixed Ability Classrooms* by Carol A. Tomlinson (Tomlinson C. A., 2017). There are three important aspects that educators must pay attention to in practicing this learning, namely content differentiation, process differentiation, and product differentiation. These three aspects must be given optimally according to the different learning profiles of students. With this concept of differentiated learning, it is hoped that students will receive maximum service in learning according to their individual character (Masruroh, 2023). The development of academic and non-academic potential is also expected to develop well. Yet, applying UbD and AI through differentiated learning process is still rarely found and has become the novelty in this research.

From the description above, the researcher went through best practice action. This best practice aims to answer research question on how to enhance students' writing skill in class X-I MAN 1 Pasuruan on report text through implementing differentiated learning based on UbD and AI.

## METHOD

This research is applying best practice approach to practice differentiated learning based on UbD and AI. The concept of UbD learning design can be found in one of the Emancipated Curriculum implementation reference books, namely the Learning and Assessment Guidebook, Early Childhood Education, Primary and Secondary Education published by the Educational Standards, Curriculum and Assessment Agency (BSKAP), Ministry of Education, Culture, Research and Technology (Kemendikbudristek)

of the Republic of Indonesia (Anggraena, et al., 2022). The excerpt contained in it refers to the origin theory discovered by Wiggins & McGtigue (2005).

Conceptually, this design emphasizes that the ability to understand, which has been considered one of the low-level competencies, can actually be an indicator of students' ability to have high-level competencies. Students who are able to understand can be interpreted as having the ability to explain, interpret, apply in various aspects of life. Practically, there are three stages in UbD learning, including (1) educators determine the desired learning objectives, (2) educators prepare assessments to achieve the objectives that have been set, and (3) educators plan the learning process according to strategies or methods or approaches (Putra et al., 2023). This concept and three stages then became the basis for implementing best practice in class X-I MAN 1 Pasuruan.

AI is one of the developments in advanced science and technology that is currently taking the world by storm in all aspects of life, especially in the world of education. Artificial intelligence is a part of computer science that is designed to be able to work, say, do, and even feel like humans (Jaya et al., 2018; Jamaaluddin & Sulistyowati, 2021). Currently, utilizing the sophistication of artificial intelligence in the learning process is no longer something strange, is relevant to developments in the digital world, and is very helpful for educators and students (Sari et al., 2023). Sari, et al., (2023) has practiced the use of artificial intelligence in the form of applications Google Classroom for students at vocational school level. Many positive things were obtained, such as speed of access to material, assessment, material development, and so on. However, the development of this technology cannot be avoided from the negative things that accompany it. Therefore, educators must be able to always present the positive side and minimize the presence of the negative side while utilizing artificial intelligence in the teaching and learning process.

One of the competencies that students in class X are expected to be able to master is being able to write report text as stated in the Emancipated Curriculum document (Kemdikbudristek, 2022). As for material about report text listed in the student handbook entitled Pathway to English (Sudarwati & Grace, 2022). In this book it is stated that report text is a text about living or

nonliving things which provide information about something in detail. There are two parts to this text, namely general classification and descriptions. There are linguistic elements used simple present tense, logical connector, generic terms, and technical language. This writing skill is defined as the student's ability to write report text well about a living creature or inanimate object in detail according to its social function, text structure and linguistic elements.

## FINDINGS AND DISCUSSION

### Implementation of Differentiated Learning Based on UbD and AI

The implementation of differentiated learning based on UbD and AI in report text for class X-I students, was held in three meetings in January 2024 with details of activities as follows.

#### a. First Meeting (January 11, 2024)

In accordance with the teaching module that had been prepared before this best practice was carried out, at the first meeting the researcher provided content differentiation for three groups different learning styles of students. This activity is also integrated with the learning steps in UbD, namely where and what at the beginning of the learning process. LKPD 1 is given to students to accommodate the integrated process differentiation stage *hook & hold, equip & experience, tailored, and organized* on the concept of UbD. As a closing activity, step *where* and *what* also integrated. The following are some of the results of student LKPD 1 student.

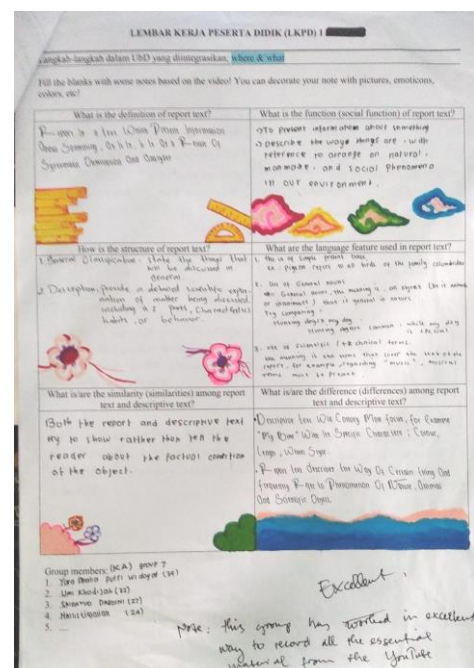


Figure 1. LKPD 1 Result

Utilization of digital technology and applications as part of artificial intelligence in this meeting using YouTube links and the Canva application. The use of several digital applications is called multimodal (Jiang, Li, & Leung, 2024) is very helpful and can facilitate the implementation of student content differentiation at this meeting.

### b. Second Meeting (January 18, 2024)

At this meeting, the focus of learning activities was the implementation of process differentiation for each group. The visual group received LKPD 2 which was designed to design products report text according to their learning characteristics, such as making posters or infographics. The audio and kinaesthetic groups also received LKPD 2 to create material-related projects report text like making a podcast or vlog. The following are some of the results of LKPD 2 students.

LEMBAR KERJA PESERTA DIDIK (LKPD) 2 (5 group)  
For K & YAK

Project option: Podcast or Vlog (choose on them!) or decide your own project! - outdoor (outside classroom)

Instructions:

1. Work the project with your group members collaboratively. Each student must have clear jobs in covering the project.
2. Decide one or an awkward/strange/unique object which rarely known by people!
3. Make a brief report text based on the chosen object as good as possible!
4. The report text at least consist of three paragraphs, more than three is permitted
5. Please, pay attention on the structure of a report text and also the language feature of it!
6. Please use AI application which suitable with your project!

Group job descriptions

No	Name	Job
1	Alida, Hana, jani (02)	Write report text
2	Alvin, Tomy, w-n (03)	decorate LKPD paper
3	Luna, Dena, valeria (05)	Search for material and edit report text into infographics
4	Al, sygan, A (01)	- - -
5		

Write down the report text below!

Project : Infographics

• Komodo dragon is the largest lizard on earth it lives within the scrub and land of some Indonesian islands. Komodo dragon is the world's heaviest lizard, weighing one hundred fifty pounds or a lot of.

• The most important komodo also measured was given ten feet (3 meters) long and weighed six pounds (10 kg) however, the common size of komodo within the wild is about eight feet (2.5 meters) long and two hundred pounds or a kg.

• Komodo has gray -> scale skin, a pointed snout, powerful limbs, and a muscular tail. They use their keen sense of smell to find decaying animal remains from many miles away. They additionally hunt different lizards yet as marine mammals and generally barbarian. The komodo dragons' teeth are nearly entirely coated by its gums.

• Once it feeds, the gums bleed, making a perfect culture for various microorganism. The microorganism the komodo the komodo dragon's spit cause blood disease, or septicemia, in its victims. A dragon can bite its prey, then follow it till the animal is simply too weak to hold on. This lizard species is vulnerable by feeding, loss of prey species, and surrounding loss.

Teacher's comment: structure ok. Language feature - ok. This group could accomplish the project perfectly.

Langkah-langkah dalam UbD yang diintegrasikan: hook & hold, equip & experience, tailored, organized

Figure 2. LKPD 2 Result

According to the activity design in LKPD 2, the students worked collaboratively to determine a joint project to create report text in digital version. There are several project creation options related to report text, like in poster or infographic or podcast or vlog format. One group chooses a format where there is a clear and written division of tasks in completing the

project. Clear and detailed division of tasks is an important part of collaborative learning (Keramati, et al., 2023). Script from report text then written in LKPD 2 before being converted to the project format that was determined at the beginning. At the end of completing the LKPD, the researcher provides comments in the form of corrections, input and suggestions for improvement from the results of completing this LKPD.

After the students received comments as feedback from researcher, they proceeded by designing report text which has been compiled into a project format by utilizing artificial intelligence technology. Feedback from educators is very important and useful for students (Câmpean, et al., 2024) so that the projects carried out are in accordance with the targets set. The process of completing this project requires quite a long time and an adequate internet network connection. It is in this process that the sophistication of technology or digital applications or what is now cooler called artificial intelligence is utilized to complete learning projects. There are groups who use Canva, Kinemaster, CapCut, Instagram, and others.

Some groups were able to finish, but some were still not finished, because the internet network via WiFi in class was not as good as expected. For those whose projects have not been completed, they will continue to complete them outside of effective learning hours.

### c. Third Meeting (January 26, 2024)

At this last meeting, there were two activities that students had to finish. First, students proceed to complete the project, upload it to the Instagram account of one of the group members, and submit the link to the researcher. Second, students receive a formative assessment according to the material they have studied through Google form.

### Learning Outcomes Differentiated Learning Based on UbD and AI

The learning outcomes from this best practice are seen from 3 aspects; affective, cognitive, and psychomotor. This section will explain the cognitive and psychomotor aspects in detail, while the affective aspects will be explained in more detail in point 3, namely student responses.

#### a. Cognitive Aspect

In this aspect, data is obtained from values pretest given before good practice and post-test given



after the best practice is completed (at the third meeting). The following table shows the value results pretest and post-test classically.

**Table 1.** Pretest and Post-test Result

No	Note	Pretest	Post-test
1	Highest score	70	80
2	Lowest score	10	20
3	Average	45	53

From the table above, classically there is an increase in the average value of knowledge about report text from 45 to 53, although the expected increase is still far from the value of KKTP set by madrasah. The highest value and the lowest value also show that there is a better result, from 70 and 10 to 80 and 20.

These results reflect that learning using a differentiated learning approach based on UbD and AI can enhance students' cognitive abilities, although the researcher feels it is not yet significant. It is recognized that the difficulty of improving students' ability to understand this type of text is due to the small amount of vocabulary mastered by students. So, when answering the questions given, they experienced problems with a lot of foreign vocabulary and meaning that they did not understand. This situation is in line with research conducted by Amelia (2021), Holidazia & Rodliyah (2020), and Hamima (2022). Therefore, it is hoped that English language educators everywhere would not get bored of improving students' mastery of English vocabulary in their own way.

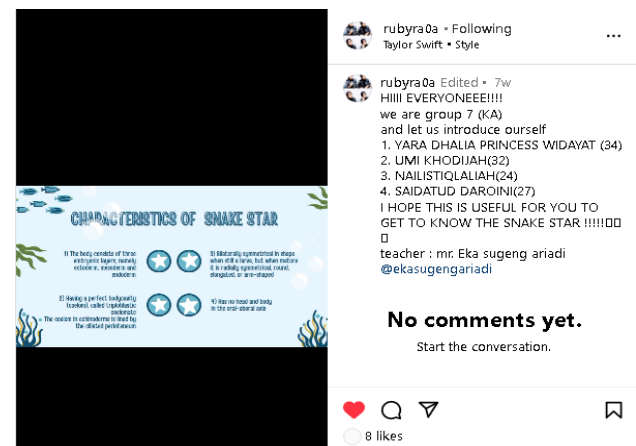
#### *b. Psychomotor Aspects*

In this aspect, data on students' ability to understand report text extracted from initial presentation data about report text through LKPD 1 and the final results of the project. This presentation was carried out according to each group and videotaped. Researcher provides a performance assessment rubric and provides assessments according to the results of the presentation.

Overall, students were able to present good presentations. They are able to explain the material about report text in accordance with the target competence in Emancipated Curriculum. The presentation also includes comparing in more detail the differences and similarities between report text with descriptive text

(Khamidah, 2023). The two kinds of texts that must be compared because they are similar and many students misidentify the two texts.

There is data on students' skill in compiling report text. This can be seen optimally from the project provided, which is in the form of a written text product that has been converted into digital format and uploaded to their social media. Here is one screenshot of their text writing product.

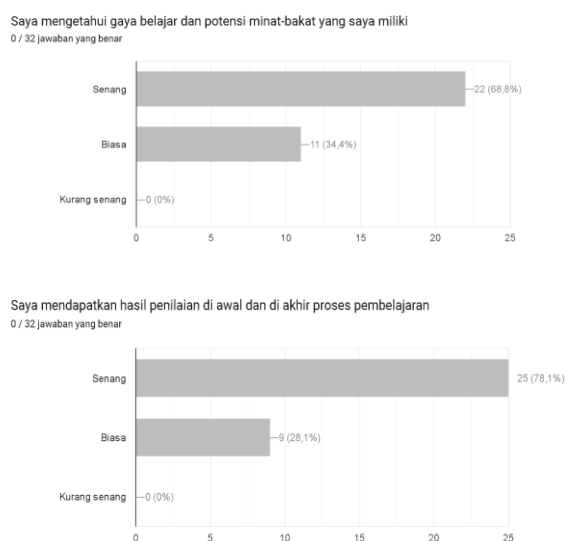


**Figure 3.** Student's Writing Product

From the results of product differentiation and product digitalization above, researcher concluded several things. First, the differentiated learning approach which leads to product differentiation can be implemented well in this class. This is in line with what the government hopes for in the Academic Text Principles of Differentiated Learning Development (Differentiated Instruction) (Purba et al., 2021; Masruroh, 2023). Second, product assessment as part of the UbD design is in accordance with the learning objectives set at the beginning of the learning process. Lastly, the use of artificial intelligence in the learning process can also be practiced by students, even though it is a bit hampered by the internet network which is still unstable.

#### ***Students' Responses to Differentiated Learning Based on UbD and AI***

In this best learning practice, as in the differentiation learning approach in Emancipated Curriculum, researcher provides cognitive and noncognitive diagnostic assessment processes to students. Below are several screenshots of student response diagrams that the researcher conveyed via Google form.

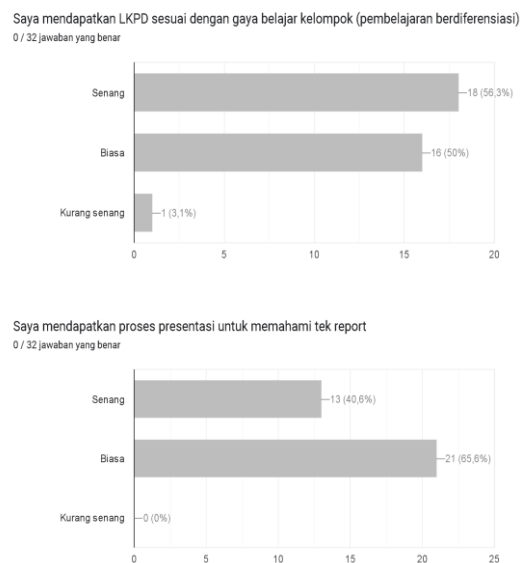


**Figure 4.** Students's Responses (1)

The next response from the students was regarding the provision of LKPD and the opportunity they got to present the results of the LKPD. 56.3% of students felt happy with the LKPD, 50% felt normal, and 3.1% were less happy. From this data, it can be concluded that the existence of LKPD is not completely liked by students in the process of understanding the lesson material. In accordance with the concept of differentiated learning, it is possible for some students to feel more comfortable with verbal explanations or being given a clear workflow or having interesting illustrations that explain each instruction. This situation reinforces what Hasim & Abdillah (2024) said that there is a need for variations of LKPD that are more interesting and truly suit the needs of students' learning styles.

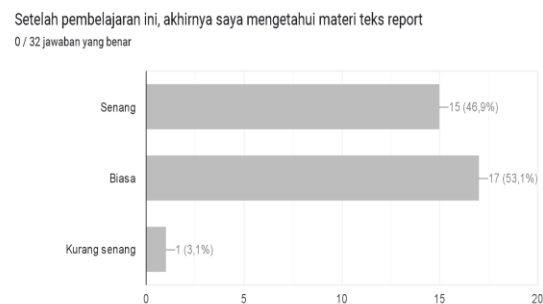
The balance of student responses between happy, ordinary, and unhappy had an impact on the next activity in the form of presenting the results of LKPD 1. Based on the diagram above, not many were happy with the opportunity to present. The majority (65.6%) only felt normal about this activity, only 40.6% said they were happy. Therefore, educators are highly recommended to create several variations of the LKPD model to cater for the different learning styles of students which ultimately determines the absorption capacity of the material being studied. This is equivalent to the results of the theoretical study presented by Paspania & Susilawati (2024). The student responses for three differentiated learning in content, process,

and product are presented in the screenshot below.



**Figure 5.** Students's Responses (2)

From the data above, it can be concluded that the majority of students like a learning process that is based on differentiation of content, processes and products. Moreover, this activity involves the use of artificial intelligence in it. However, there were still 1-2 students who were not happy with this activity. The end of this best practice is depicted in the diagram below.



**Figure 6.** Students's Responses (3)

From all the responses above, it boils down to students' understanding of the material report text which is the main material in learning. A total of 17 students (53.1%) said they were ordinary after understanding the material, while 15 students (46.9%) said they were happy, and 1 student (3.1%) said they were not happy. Researcher concluded two things from this data. First, not all students' responses expressed that they felt happy even though they already understood the material due to difficulties in mastering the prerequisite material quickly to compose report text. Second,

more students have difficulty in getting an internet connection, which hinders the completion of projects quickly.

## CONCLUSION

At the end of this report, the researcher concludes several important things regarding this best practice. First, the learning results show that students are happy with the provision of cognitive and non-cognitive diagnostic assessments to become aware of their respective learning styles. As explained above, awareness of this concept influences enthusiasm and the subsequent learning process. Second, the use of LKPD has not made students interested in enjoying the learning process. This is because the LKPD design is still less attractive to them. However, they are happy with the differentiation of content, processes, and products which is supported by the use of artificial intelligence in the learning process. This can be seen in student

response data at all stages of learning from the beginning to the end of the assessment. Finally, students stated that they could understand the material provided even though they were not completely happy with it. Therefore, this response becomes a reflection for researcher to improve the learning process in the future.

From the conclusions above, best practice using a differentiated learning approach is worthy of being practiced by educators everywhere. This learning approach still really needs to be integrated with other approaches or strategies or learning methods and of course also take advantage of technological developments in learning. However, whenever we talk about the sophistication of technology, it cannot be separated from the ability of educators and students to use it and it cannot be denied that the infrastructure in the classroom must fully support it. If not, then everything will become an obstacle or obstacle in improving the quality of learning.

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