

DIFFERENTIATED INSTRUCTION IN ONLINE LEARNING: ITS BENEFITS AND CHALLENGES IN EFL CONTEXTS

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ABSTRAK

Sebagai dampak akan pesatnya perkembangan Teknologi, Informasi, dan Komunikasi, pembelajaran daring telah memegang peranan penting dalam pendidikan di masa kini. Namun, meskipun proses pembelajaran telah dilakukan secara daring, keberagaman siswa harus terus dipertimbangkan untuk menggali potensi siswa secara penuh dalam belajar. Pembelajaran terdiferensiasi dapat memfasilitasi siswa dengan kemampuan keragaman kognitif, ketertarikan, kesiapan, serta berdasarkan profil mereka. Penelitian ini bertujuan untuk menjabarkan manfaat dan tantangan dari melaksanakan pembelajaran terdiferensiasi dalam pembelajaran daring melalui kajian pustaka yang sistematis. Ditemukan bahwa pembelajaran berdiferensiasi yang dilakukan secara daring di konteks EFL bermanfaat terhadap kemampuan berbahasa siswa yang meliputi membaca, berbicara, mendengarkan, dan menulis. Tantangan yang ditemukan dalam pelaksanaan pembelajaran terdiferensiasi di konteks EFL secara daring meliputi keterbatasan waktu, ketidaksiapan sekolah dan guru, serta jumlah siswa yang besar. Penelitian ini menyimpulkan bahwa dari manfaat yang diberikan oleh pembelajaran berdiferensiasi dalam pembelajaran daring, guru diharapkan dapat mengantisipasi tantangan dalam penerapan pembelajaran terdiferensiasi serta mempersiapkan strategi yang tepat untuk menghadapi berbagai tantangan tersebut dan mencapai hasil maksimal untuk para siswa.

Kata kunci: pembelajaran berdiferensiasi, pembelajaran daring, manfaat, tantangan

ABSTRACT

As one consequence of the massive ICT development, online learning has played a great role in current educational practices. However, even though the learning process is conducted online, students' diversity needs to be considered to assist them in unlocking their fullest potential in learning. Differentiated instruction can facilitate students' diverse cognitive abilities, interests, readiness, and learning profile. This research aimed to elaborate on the benefits and challenges of implementing differentiated instruction in online learning. Through systematic library research, the study revealed that differentiated instruction in online setting is argued to benefit students' reading, speaking, listening, and writing skills. The challenges identified in the implementation of differentiated instructions in online contexts for EFL students include time constraints, schools and teachers' unreadiness, and a large number of students. This study implies that with the beneficial advantages offered by differentiated learning in online learning, EFL teachers should observe the challenges and prepare necessary steps face the challenges from hindering the benefits of differentiated instructions for the students.

Keywords: differentiated instruction, online learning environment, benefits, challenges

1. INTRODUCTION

The rapid development of ICT has massively influenced the current educational systems, and one of them can be seen in the occurrence of online learning [1]. This term refers to the learning experience with the utilization of internet access for both synchronous or asynchronous learning environments [2]. However, technology utilization as the consequence of ICT development provides positive and negative sides to online learning [4]. Conducting the learning process in a virtual environment provides flexibility

in time, place, source access, learning pace, and autonomous learning for the students [2]–[4]. Implementing online learning has other positive sides, such as learning effectiveness, increased motivation, and improved educational equality [5]–[9]. In contrast, it also poses negative sides, such as learners' financial issues, anxiety, technical issues, and unreadiness [3], [4], [10], [11].

Factors that influence the success of online learning have been categorized into three dimensions: personal, environmental, and system [10]. The personal dimension involves teachers' characteristics, competence, and learners' characteristics (i.e. motivations, pace, needs, preferences, and ability) [12]–[14]. The environmental dimension is the second one which deals with the online learning situation in both synchronous and asynchronous learning [5], [13]. The last dimension deals with the system applied, which includes the quality of infrastructure, information quality, and the institution's value and assistance [6], [13], [14]. Learning platform utilization is one practical example of meeting the requirements of current educational practice in teaching, learning, or material delivery based on the success of online learning [15].

Furthermore, students' diversity in their socioeconomic, cultural, and cognitive backgrounds also significantly affect the learning success. In a classroom with high diversity, the instructional design needs to be adjusted, to meet the students' conditions. Teachers need to provide suitable learning processes and material that best suits students' needs [8], [16] and design their instructions around the students' diverse necessities [17], [18]. An instructional strategy called Differentiated Instruction has been proposed to facilitate students' learning diversity. This instructional design attempts to deliberately help teachers promote meaningful learning process in a class with variations in students' characteristics, learning profiles, and prior knowledge [18]–[21], [22]. Differentiated instruction aims to provide a learning process that allow students to study the learning styles they loved better [19]–[22], allowing them to achieve excellent learning outcomes [24], [25] because differentiated instruction offers a supportive learning environment [26]. It would enable them to involve and participate actively in their learning, for they have control over their learning responsibility [27], [28]. It is also emphasized that differentiated instruction enable teachers to reflect on their teaching and improve themselves continuously [29].

The present study draws on the connection between the inevitability of online learning and the possibility of offering a constructive learning environment through differentiated instruction. Thus, it will closely track the benefits and challenges of differentiated instruction in online learning as argued by experts and proven by previous studies. While most studies have argued for the benefits of differentiated learning in the context of off-line on-site learning; the present study focuses more on its implementation in online learning contexts, aligning it with the recent context of mandatory online learning during the COVID-19 pandemic. The study is expected to contribute to the advancement of differentiated learning into online contexts by providing systematic review of proven benefits and identified challenges of its recent implementation in online learning.

2. METHOD

This present study adopted George's model of library research [30], which elaborated the definitions, benefits, challenges, and differentiated instruction implementation in online learning. These findings were derived from previous studies which involved journal articles and books. Figure 1 describes the step-by-step George's library research model, adapted by the other researches [31], [32]

The study started by pinning down "differentiated instruction in online learning" as the investigated topic. The second step dealt with designing the research questions, which involved how differentiated instruction is described and their benefits and challenges in online learning. The third step determined the research plan, including browsing and skimming the information needed by reading books and articles and constructing ideas with the help of websites. The fourth step was determining Google Scholar as website and tools for retrieving the articles. The fifth step was determining the information sources about differentiated instruction which was principally retrieved from Tomlinson, McTighe, Imbeau & Moon [21], [23], [24], [33]. As guided by Tomlinson's insights, previous studies published by reputable national journals indexed by SINTA and international accredited journals indexed by Scopus, Copernicus, and EBSCO also supported the ideas elaboration of this present study. Related keywords like "Differentiated Instruction," "Benefits of Differentiated Instruction in Online Learning," "Challenges of Differentiated Instruction in Online Learning," and others helped discover the associated data.

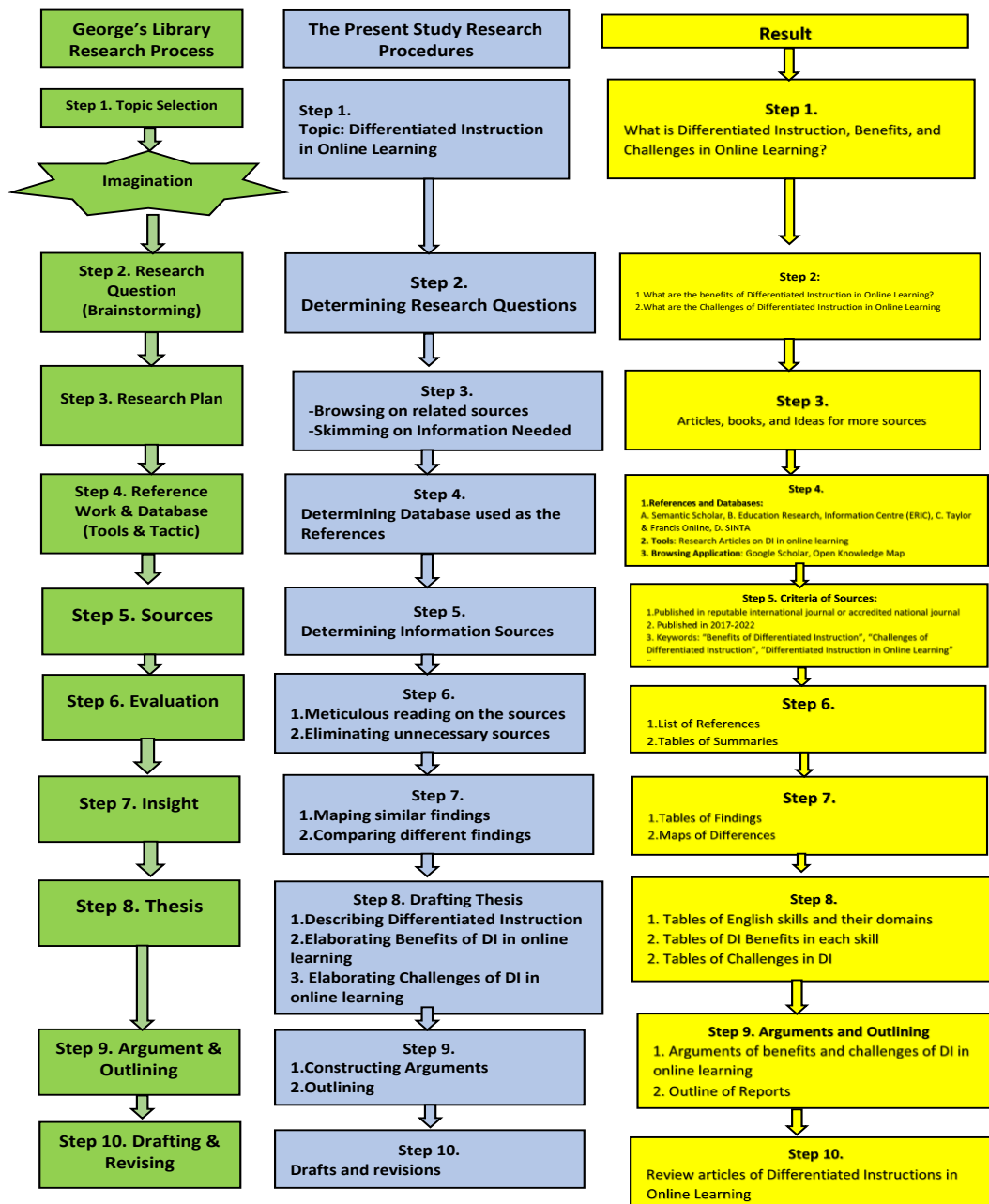


Figure 1. George's (2008) model of library research

The next step emphasized closely reading the sources, finding the necessary data, and eliminating unrelated ones. The findings were then combined and compared as the data sources to answer the proposed research questions that elaborated on the benefits and challenges of differentiated instruction in online learning situations. As the research questions were answered, constructing arguments for outlining was done to compile the data for the present study. Revisions were possibly made as additional sources could be inserted as well.

3. RESULT AND DISCUSSION

This study involves reviewing relevant sources to elaborate on the benefits and challenges of Differentiated Instructions in Online Learning. There are twenty-one sources reviewed in this study that involved the benefits of Differentiated Instruction in online learning, viewed from language skills. Meanwhile, the challenges of differentiated instruction conducted in online learning are also discovered from nine sources.

A. Benefits of Differentiated Instruction in Online Learning

As an instructional strategy, differentiated instruction has been proven effective to facilitate students' diverse abilities. In an offline context, differentiated instruction's benefits covers several aspects such as learning outcomes improvement, student-teacher engagement, language skills, and students' cooperation and collaboration [18], [29], [34], [35]. The learning outcomes increased in general, since the students are assisted based on their learning preference, which could affect their learning motivation [18], [36]. Differentiated instruction is also beneficial for student-teacher engagement since the teacher will facilitate and guide their learning needs [18], [29], [37]. Differentiated instruction is also applicable for language skills improvement that covers reading, listening, speaking and writing [19], [29], [38], [39]. The last benefit in offline context comes from students' collaboration ability, where students are facilitated with same-abilities group placement that makes them comfortable in the learning context. Along with these, the benefits offered by differentiated instruction in an online context are similar to offline learning, especially in language skills. Therefore, the benefits of differentiated instruction in an online context will be elaborated as follow.

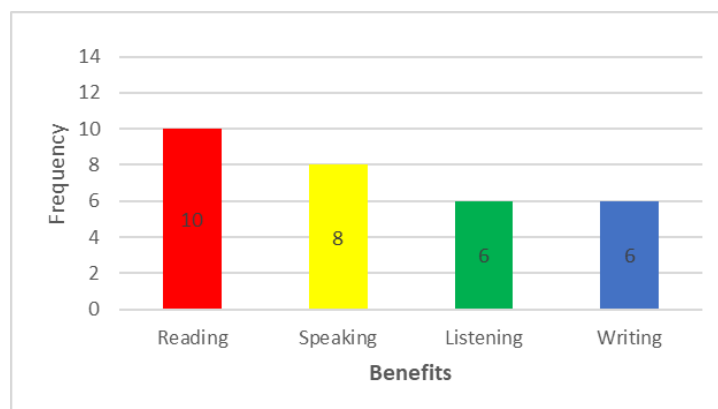


Figure 2. Challenges of Differentiated Instruction in Online Learning

Figure 2 displays that the implementation of differentiated instruction in online learning benefits students' reading, writing, listening, and speaking. Ten of them argue that differentiated learning positively impacts students' reading skills, covering vocabulary, phonemic awareness, reading fluency, and reading comprehension. Eight sources claimed that differentiated instruction improves students' English-speaking skills, covering pronunciation, fluency, vocabulary, and comprehension. Six of these studies argued that it is positively beneficial for improving students' listening skills, including sound recognition, vocabulary, comprehension, and grammar. Six studies vouch that differentiated instruction has positive effects on students writing skills, involving mechanics, grammar, and vocabulary.

a) Benefits of Differentiated Instruction for Reading Skills in Online Learning

Reading refers to the process of understanding language script, written information, conceptual meaning, and sentence connection [40]. This also means that reading deals with the process of understanding the content and context of the text [41]. There are several aspects covered in reading; phonemic awareness, reading fluency, vocabulary, and reading comprehension [41]. Phonemics awareness includes recognizing the words, sounds, and syllables of what is read. Reading comprehension is the process of synthesizing meaning and ideas to be understood. Reading fluency which deals with the ability to connect words and sounds [42]. Vocabulary is ability to properly utilize and understand words or phrases based on particular contexts while expressing ideas [43]. The benefits of differentiated instruction in online learning also affect the reading aspects elaborated below.

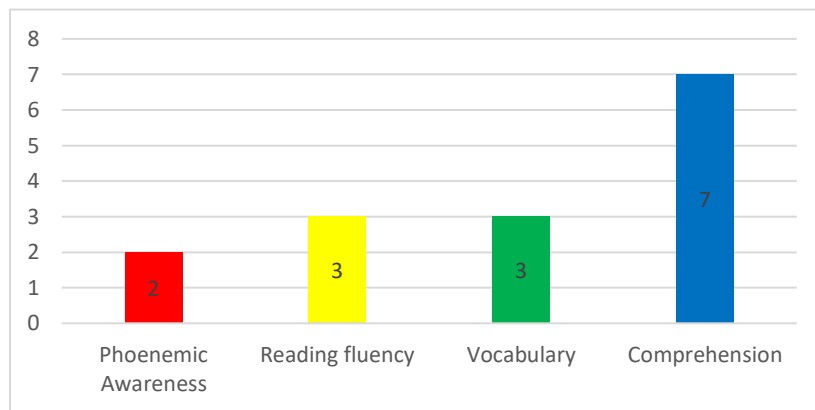


Figure 3. Aspects in Reading Skills Positively Affected by Differentiated Instruction in Online Learning

In general, differentiated instruction is argued to help recognize linguistic components of a text that enable students to comprehend better. Implementing differentiation in reading is beneficial for enhancing students' ability to learn and access content based on their reading preference, so they will start to recognize linguistic patterns and phonetic symbols [44]. Teachers can assist students identifying certain sounds for symbols in a text, improving their phonemic coding ability in by assisting them in connecting the phonetic symbol found in the text [45]. This kind of assistance is most beneficial for students who understand the text better when they read it aloud, comprehending the sounds of the words along the reading aloud [32]. As they have become aware of the words, syllables, and sound recognition, [44] adds that differentiated instruction would help the students foster their reading fluency because their eyes will start recognizing the words and the sounds that they represent. Whether or not the reading is voiced, their words, syllables, and sound recognition will improve their reading speed [46] and fluency [20]. E-learning content is mostly delivered in the forms of soft copies (i.e. articles and books in .pdf, .doc, e-pub). The convenience of providing learning materials through e-online platforms has made it possible for teachers to provide ample reading materials from which the students can choose [9], [10]. The abundance of reading material can support the students' learning more efficiently when they have speedier comprehension.

Differentiated instruction can be utilized to improve students' vocabulary. When teachers recognize that some students have comprehended a text, they can invite students to enhance their vocabulary by asking them to find synonyms of the words or what individual words mean [44]. Equally, when a teacher recognize a student struggles with learning difficulties, the teacher can help building new vocabularies with the student, by explaining new words from the texts, directly by telling the meaning or by association where the teacher connect the new words with those that the student already knew [47]. This way, differentiated instruction helps students select appropriate vocabulary and learn vocabulary more accessible, helping students with their reading skills in general [36], [48]–[50]. Online learning implies internet connections and sufficient devices [51], [52]. This means, teachers and students can both utilize online applications for word meaning and synonyms, making the efforts easier.

Differentiated instruction also positively impacts students' reading comprehension than the traditional learning model. Their reading comprehension improves when they are familiar with phonemics and vocabularies because they will help them quickly understand the text they are reading [44], [47]. Besides, when the reading texts are differentiated to meet the students' different interest, each students will be more engaged in their reading [45]. Cognitively, the teacher can utilize this combination to invite the students' critical thinking by inviting these well motivated students to read the text more critically, bringing their prior knowledge into a higher order thinking process [26]. Along with this, the occurrence of online learning will enable students to select their reading preference. With sufficient interest, prior knowledge, and comprehension, students will be motivated to participate in the classroom [53]. Online learning will also provide students sufficient time to understand the reading material better, hence they will be ready for the learning process afterward [54].

b) Benefits of Differentiated Instruction for Speaking Skills in Online Learning

As one essential element of language mastery, speaking deals with the ability to elaborate information orally [55]. The skill covers fluency, pronunciation, vocabulary, and comprehension. Fluency is the quality of speech that does not make speaking difficult. Pronunciation is the ability to produce the correct sound [56]. Vocabulary is an important element in speaking since it conveys the content and what context of what we are talking about [56]. Comprehension enables learners to understand what the speaker says and the verbal proper response to it. Studies have found that differentiated learning have positively affected these subskills.

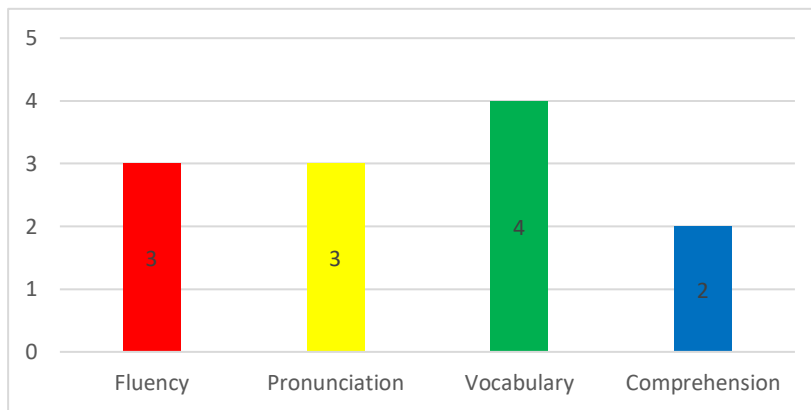


Figure 4. Aspects in Speaking Skills Positively Affected by Differentiated Instruction in Online Learning

In terms of fluency, implementing differentiating instruction in virtual learning environment helps promote speaking fluency since those lacking in speaking will be helped through a peer tutor in the learning by the fluent students [29]. Aside from that, it had been suggested that differentiated instruction in online learning can be one option to decrease speaking difficulty, for the students can possibly train themselves how to set an accurate speaking speed by imitating online speaking sources [57]. In online context, differentiated instruction can be integrated with cooperative learning strategy, where the students can virtually practice their speaking to promote their speaking fluency [58]. They can also share resources to virtually promote one another assessment while involving the instructors to encourage, help, praise, and support the learners both academically and personally. Besides, students can now record their oral answers and upload them to the online learning platform, allowing them more opportunities to develop their fluency.

Differentiated instruction in online context also helps promote the use of proper vocabulary in their virtual speaking performance [45]. It assists in vocabulary building and conversation prompts because high-achieving students are given different activities, so the teacher can focus on the others who need to be assisted in their learning struggle [29]. Since being differentiated means the students are also allowed to be focused on, it will allow the students to receive intensive guidance by the teacher in selecting the appropriate vocabularies for their speaking [59]. Apart from that, since online learning assists the students to browse more vocabularies, they will have a chance to acquire sufficient vocabularies towards what they will speak afterwards [19].

Students' speaking comprehension, which involves their communicative ability, is also improved by applying differentiated instruction, specifically virtual learning. Since differentiated instruction is very considerable to be applied, it also helps students understand what is being spoken when they try to process speaking production, including how to choose the correct linguistic form in a particular situation [57]. There are a lot of sources they can access throughout the internet, where it can continuously promote their speaking comprehension [60]. The teacher may on well-maintained communication in comprehending utterances by assigning students to do certain assignment which requires them to utilize their speaking ability such as making speaking video on certain topics, based on their preference and ability [45], [61]. With the ease of access offered in online learning, it makes differentiated instruction can positively impacts students' speaking performance in terms of their comprehension.

Another speaking dimension is pronunciation, differentiating the pedagogical strategy in virtual learning environment helps students achieve their highest potential to understand pronunciation and apply that to their speaking improvement [62]. Differentiated instruction classroom offers a relaxing online learning environment due to differentiated material and process of achieving learning goals [63].

As the teacher observes students' learning profile, their pronunciation difficulties are possibly trained by giving exclusive treatment through shadowing technique to produce correct pronunciation, which can be provided through life-video, recorded video, or providing links to relevant videos [64]. Besides, combining self-regulated learning and differentiated instruction allows them to practically monitor their mispronunciation to understand the materials, since they can discover a lot of speaking sources based on their needs and speaking level [65]. For example, students can find the correct pronunciation of words online or use voice recognition feature, with which students can try pronouncing the words and check if the application accept the pronunciations as correct. Furthermore, virtually grouping them based on their learning preference and ability also helps them recognize the sound to learn how to pronounce the words better [19].

c) *Benefits of Differentiated Instruction for Listening Skills in Online Learning*

Listening refers to receiving and constructing information that responds to verbal and nonverbal messages [55]. It is one essential skill since understanding language begins with perceiving what the speaker says [66]. This skill includes hearing sound, intonation, word stress, and coping with noise [67]. The dimensions of listening include sound recognition, grammar, vocabulary, and comprehension. These skills are being affected by the implementation of differentiated instruction in online learning, elaborated in Figure 5 below.

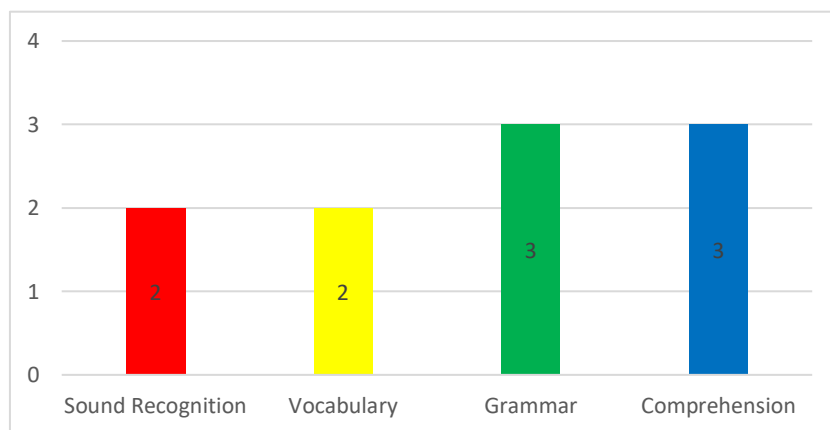


Figure 5. Aspects in Listening Skills Positively Affected by Differentiated Instruction in Online Learning

As the first listening dimension, sound recognition does matter precisely in the online learning environment. When grouped on their learning preference and pace, they will be inclusively gathered with their partners, which helps in noise reduction so the sound will be recognized [19]. Online differentiated instruction will assist the students to create their personalized learning, where they can listen to the listening audio without noise. Aside from that, teacher can possibly assign the students to watch videos and summarize what they understand from the video they have watched. As they recognize the sounds, it will be beneficial for them to personally recognize what is being spoken and comprehend the utterance they listen to [45].

Implementing differentiated instruction in online learning possibly improves students' vocabulary in significant way. Differentiated instruction promotes significant improvement in students' vocabulary since grouping students based on their pace will help select appropriate word use for their better listening experience [68]. The teacher may assign students to do listening practice through Quizizz audio application, hence students can possibly learn simple vocabularies provided on the application [69]. Besides, differentiated instruction implemented in teaching listening can affect students' vocabulary acquisitions, specifically in terms of recognizing certain expressions and understanding suitable vocabularies listened by the students [19]. The teacher may provide various instruction such as assigning the students to watch video with simple and basic vocabularies on the sound to make them easier understand the words [70]. These videos can be in the form of songs, nursery rhymes, conversations, skits, or clips from related films.

Another benefit of differentiated instruction for listening in online learning can be seen in listening comprehension. Teaching listening in differentiated instruction could be tiered tasks (assigning students, involving the same teaching material, but the tasks are presented based on students' needs) [71]. The

teacher may provide listening activity with basic and easy words to be listened to, thus the students would easily understand the context of the audio. A clearly-designed student listening environment will help students better understand during the listening section, which will also be beneficial if implemented in an online learning situation [19]. There are various activities the teacher can design virtually, for instance, comprehending a song lyrics which enables the students to listen carefully and repeatedly [70], [72]. It results in differentiated instruction and affects how the students understand the listening better, positively impacting listening comprehension [48].

Grammar in listening is also affected by implementing virtual differentiated instruction. When the students receive different treatment of grammar instruction, they learn better grammatical recognition of the sound they listen to [68]. In online differentiated instruction, the teachers try to repeat some words or some incorrect structures based on students' learning pace and achievement level [59] where it is possibly done virtually through online meeting apps. Aside from that, learning grammar in virtual differentiated instruction can be possible when the teacher gives gap filling assignment focusing on certain tenses to adjust their level [73], [74]. Through this point, differentiated instruction in online learning will enable the students to learn the most suitable structure for their words arrangement [74]. When differentiated learning is implemented in teaching students that fit their learning preference, they will be more aware of the use of grammatical points [48].

d) Benefits of Differentiated Instruction for Writing Skills in Online Learning

Writing is defined as the ability to develop and organize ideas into coherent written content [75]. It is again explained several areas included in the writing skills: grammar, vocabulary, and mechanics. Grammar is the rules of combining and arranging phrases into meaningful sentences. Vocabulary in writing will enable students to utilize appropriate words based on the context they are trying to write in the text. Meanwhile, mechanics refers to the appropriate way of how a particular text is written, which includes capitalization, punctuation, and spelling. The benefits of implementing differentiated online also affect students' writing skills, including the dimensions elaborated below.

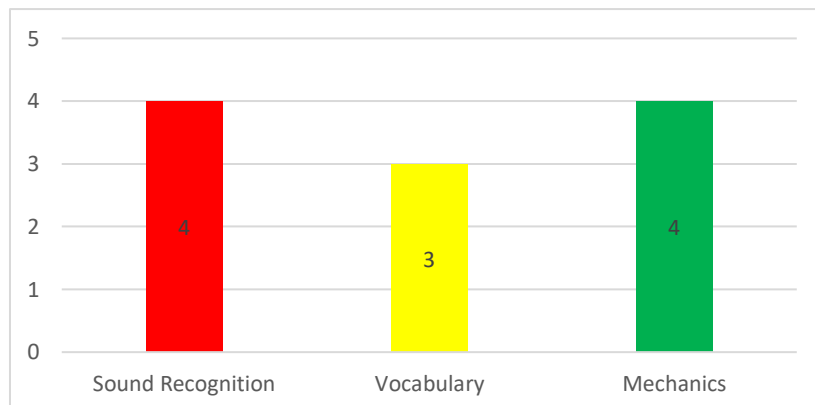


Figure 6. Aspects in Writing Skills Positively Affected by Differentiated Instruction in Online Learning

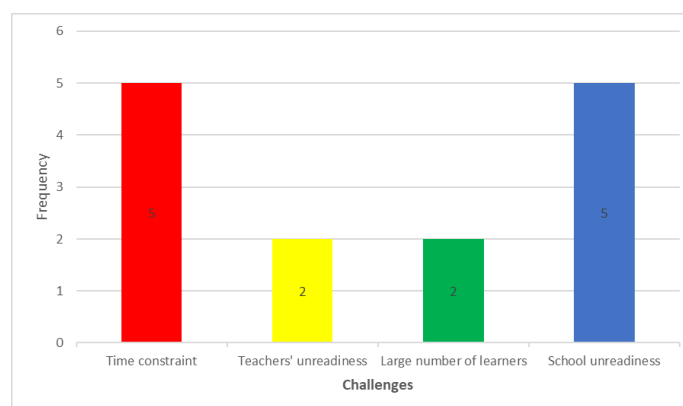
Grammar as the first dimension of writing is beneficially affected by implementing differentiated instruction in online learning. Implementing differentiated instruction makes students aware of grammatical points they are using in forming good sentences, specifically in virtual learning scene [48]. Teacher may assign the students to compose a paragraph based on certain topic, assisted by the use of Grammarly [76]. This application promotes grammar improvement, since when the students are still working with their preferred text content, the application will provide insightful suggestion for their grammar improvement [76]. Through differentiated online learning, their grammar mastery is also possibly promoted by a peer-tutor when the high-achieving ones teach their friends to learn together, even when it is conducted virtually through personal meeting [29]. Aside from that, differentiated instruction helps in promoting grammar mastery in paragraph writing. It can be possibly done through internet chatting, sending tasks through e-mail, long distance discussion, which enhances students' grammatical awareness [36], [77]. As they are aware, it would promote students' grammatical achievement, which later enhances their writing competence [34].

Online differentiated instruction will also promote students' vocabulary mastery. Differentiating strategies and instruction are adequate for the students to understand vocabulary and select the appropriate one for their writing production, since they may compose a text in different writing ability [48]. When implemented in a virtual environment, the students will learn the vocabulary better. It can be seen by the possibility of the students to utilize their gadget in exploring suitable vocabularies for their writing. Differentiated instruction also helps in improving students' literacy skills in terms of vocabulary recognition toward what is appropriately used in the text they are trying to form [29]. Teacher may assign the students to do an exercise on online learning platform such as learning vocabularies through Quizizz or Kahoot! [65]. Furthermore, asking the students to compose a text without plagiarizing will foster them to find another synonym or certain term. As it enhances their vocabulary recognition, it would result in an ability to select the appropriate vocabularies for their writing product [36].

The last writing dimension beneficially affected by online differentiated instruction is writing mechanics. As the students are differentiated in the process, students will learn writing mechanics unconsciously [29], [38]. They possibly discover various ways in composing a good writing structure, such as by watching video and exploring on reputable journals. Besides, virtual differentiated instruction helps in improving students' writing proficiency, specifically in writing content, structure, and length. It is also found as an effective strategy for the teaching writing process [78], [79]. Facilitating students with Padlet as online learning tool is a great decision, since with the differed content, they will learn to compose their own writing that simultaneously enhance their writing structures [80], [81]. In online differentiated instruction, they can also virtually learn from their peer and improve their weak areas of writing through personalized meeting. These benefits result in students' writing significant difference for it has improved a lot in their mechanics.

B. Challenges of Differentiated Instruction in Online Learning

Despite the benefits offered by Differentiated Instruction, some possible challenges also occur during its implementation. In offline context, the implementation of Differentiated Instruction tends to be lacking in time constraint, where it requires extra time to prepare and facilitate the differences within the students [29]. School readiness which also involves teachers' readiness on the implementation becomes the common challenges in offline context, since not all educational component is ready for this implementation [29]. Prejudice on different treatment becomes another challenge encountered, for they possibly think it would be an unfair learning process [18]. The last possible challenge is in the big number of learners, where the teachers will find it difficult to facilitate the entire classroom optimally [18]. From the challenges described, it shortly defines that the challenges of Differentiated Instruction in offline and online contexts are pretty similar. In online context, it involves time constraint, teachers' unreadiness, large number of learners, and school unreadiness that will be elaborated as follow.



Graphic 6 Challenges of Differentiated Instruction in Online Learning

Graphic 6 displays nine sources reviewed that explain the challenges of differentiated instruction in online learning. Five of them argued that the challenge in online differentiated instruction is from time constraints, which have been influential in online and offline learning. Two sources display education practitioners' unreadiness in implementing online differentiated instruction. Another two sources have

also discovered the challenge of many students, which causes the teachers to control the virtual learning environment. School readiness is the last challenge overcome; where there are five sources discovered in how the schools are still unprepared for online learning differentiated instruction. Since online learning also encounters many problems, challenges in differentiated instruction in an online environment also occurred during its implementation and the benefits offered in differentiated instruction. The challenges in implementing this instructional strategy involve school and teachers' readiness, time management, and many students who have various learning needs.

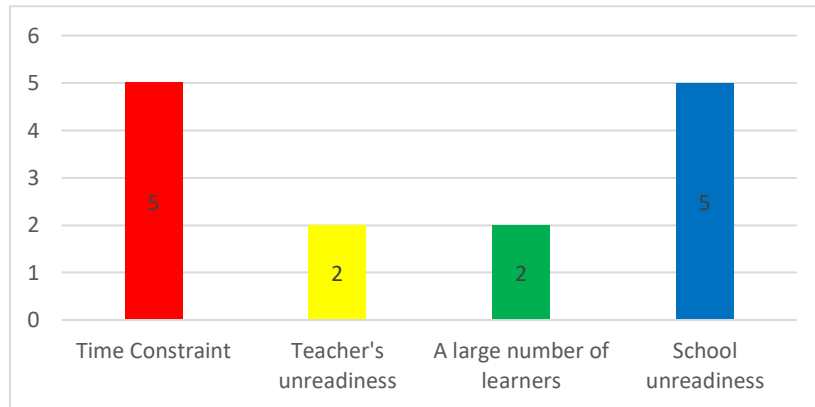


Figure 1. Aspects of Challenges of Differentiated Instruction in Online Learning

The first challenge encountered in implementing virtual differentiated instruction is the time needed. It has been discovered that teachers need to design different instruction considering students' necessities as one learning strategy cannot be implemented maximally in the entire class [17], [37], [62]. In line with this research, the preparation of differentiated instruction costs quite a long time [36]. Various things need to be considered, such as the lesson plan and administration requirements, including possible unmanageable and unpredicted situations [49]. In online environment of Differentiated Instruction, the teaching and learning materials should also be varied, where designing and preparing the materials will be time consuming for the teachers. Focusing on specific group of students in the virtual learning is also a hard thing to do concerning on the time constraint [82].

Educational practitioner unreadiness is also considered the main challenge in implementing differentiated instruction in the virtual learning environment. Differentiated instruction, specifically in online context, lacks teachers' preparation in his research [83]. It occurred this way as the teacher hardly differentiated the learning, for there is no adequate knowledge in the implementation. This occurs as there is no professional training to get used to the differentiated instruction; thus, it is vital to have the teacher appropriately ready to implement this instructional strategy [84]. Not only unreadiness in terms of how to differentiate the learning, technical aspects such as gadget and internet utilization are also the unreadiness of implementing this instruction virtually [85].

A large number of learners also challenge the teacher in implementing differentiated instruction online. In the first place, a differentiated classroom aims to facilitate learners' diversity [33]; thus, grouping students, putting them in peer learning, and assisting them individually are done to support the implementation of this instruction. Differentiating the process virtually causes barriers since teachers are expected to facilitate students equally [37], [84]. Besides, not all learners are having a stable connection to receive equal knowledge. Putting students in breakout rooms possibly promotes equal learning treatment in differentiated instruction, yet teachers still need to monitor their progress in the learning process.

School readiness in employing online differentiated instruction has also become one barrier to applying this instructional strategy. In having differentiated instruction to be optimally implemented, school readiness is necessary [29]. They added that school readiness involves how committed the school is to emerging differentiated instruction by providing sufficient training to the teacher before differentiated instruction is implemented in the online learning process [17], [37]. Technology barrier is considered school unreadiness since not all teachers are capable in technology utilization [85]. It is not only focusing on the school's commitment, but the teacher as the school's educational practitioner should cooperate to realize the implementation of online differentiated instruction [36], [86].

4. CONCLUSION

Online learning has been considered a crucial term in the massive development of ICT. In line with the factors required to achieve the success of online learning, students' profile, necessities, ability, and learning pace are highlighted to assist in achieving the learning goals. Along with the factors above, differentiated instruction accommodates educational practice to reach the learning objectives. It is also possibly implemented in an online learning environment with benefits and challenges discovered. The benefits of virtual differentiated instructions are viewed from language skills that involve reading, speaking, listening, and writing. All dimensions of each skill show the positive impact of differentiated instruction in online learning. Challenges to its implementation exist in time constraints, teachers' and schools' unreadiness, including many students. To conclude, the research on implementing differentiated instruction in online learning is still limited; thus, further research is required to elaborate more explanation.

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