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Tracking Teachers' Experience of Adopting My English Step to Infuse Differentiated Instruction

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Abstract

As a post-developmental study, this qualitative research is intended to evaluate teachers' continued experience in adopting My English Step (MES) digital learning material and promoting inclusion in Differentiated Instruction (DI) at junior high school (JHS). Nine junior high school teachers with MES experience were selected through focus group interviews. Research data were achieved by transforming recorded interviews into verbatim transcription. Three corresponding flows of activity were conducted during data analysis: data condensation, data display, and conclusion drawing and verification. The consistency of findings was triangulated by comparing findings from interviews to those in documents on teachers' adoption of MES in class and the literature review. The first finding shows that experiences have influenced MES-

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usability and teachers' intent to adopt MES. Previously perceived as an English learning platform, MES is now posited as an adaptive digital learning object. This digital educational resource can be modified and adhered to its contextual connection. Next, improvements in content and functionality are requisite for MES to be adhered to in English learning in the enactment of Kurikulum Merdeka (KurMer). The last finding affirmed that teacher modification questioning strategies can promote inclusion when adopting and adhering to MES to KurMer. Future research should explore the extent to which students' potential to learn English is improved by adopting MES.

Keywords: Differentiated instruction, digital learning material, *Kurikulum Merdeka*, technology adoption, user experience.

1. INTRODUCTION

Studies on teachers' acceptance and readiness to integrate digital technologies are commonly found in journals, but only a few are available in the documents related to teacher experiences in adopting the technologies in teaching (Hart & Sutcliffe, 2019). Technology adoption raised global attention during the COVID-19 pandemic. However, the pandemic only accelerated what should have existed for five or ten years away in the future (Kang, 2021). With the technological resources available today, relevant researchers suggest adopting technology to enhance differentiation and inclusion in education (Johler & Krumsvik, 2022; Sandberg, 2022).

Even before the pandemic, technology adoption for learning enhancement and teaching delivery support has been extensively practiced in Indonesia. Despite the insufficient internet coverage, unstable network connection, and limited data plan (Setyowati & Rachmajanti, 2023), digital technologies, ICTs, and various platforms have been integrated, employed, and adopted. Such purposes as integrating digital platforms for distance learning (Rosmalina, 2023) and assisting students with MALL-based tools for vocabulary learning (Alhadiah, 2020) have been widely practiced in Indonesia. Technology adoption becomes paramount when face-to-face (F2) instruction is postponed for social distancing. In light of this fact, Indonesia's Ministry of Education and Culture (MoEC) positively supports teachers and lecturers to integrate digital technologies, fully utilize them in the delivery of subject matter and adopt various platforms and ICTs for distance learning (MoEC, 2020). Therefore, the outbreak of COVID-19 in the digital era has only solidified the significance of technology adoption in education.

However, concerning the landscape of existing education technology applications and platforms in Indonesia, there are still limited digital-based learning materials dedicated to English learning at JHS levels (UNICEF, 2021). The landscape exhibits very few digital-based learning materials dedicated to English learning at JHS levels (UNICEF, 2021). The existing ones are generally private and, therefore, charge a fee. This condition signifies a necessity for an open-access educational platform that simultaneously facilitates students with language and digital literacy and optimizes students' potential to learn English in different learning environments (online/onsite) or blended/ hybrid learning.

Furthermore, to fulfill the above necessity and respond to the policies of social distancing and school lockdown, a collaboration of researchers from well-known universities and representatives of the English teacher learning community in Indonesia has initiated the development of a Content Management System (CMS) dedicated to all three levels of JHS, i.e., My English Step (hereafter abbreviated MES), <https://www.myenglishstep.com> in 2021. Using the Successive Approximation Model (Allen, 2012), the initial purpose set in the Savvy Start was to anticipate the potential of a prolonged pandemic by providing digital-based English language learning materials for JHS students.

Undoubtedly, digital technology is considered a transformative agent for education. Many positives have emerged from this pandemic, but various studies have reported a significant increase in learning loss (Donnelly & Patrinos, 2022; Engzell et al., 2021; Harmey & Moss, 2023). This is also the case in Indonesia. Learning loss is exacerbated by unequal access to education due to Indonesia's geographical background, which happened before the COVID-19 outbreak. Another caveat to be concerned about is that although Indonesia has successfully boosted school enrolment rates, it has not offered an internationally competitive education system. Facts and findings related to education in Indonesia have then articulated the need for a curriculum that facilitates differentiated learning (Randall et al., 2022; Spink et al., 2022) for all students across Indonesia.

The MoEC of Indonesia started an overarching education reform in early 2020. The reform, called *Merdeka Belajar* or emancipating learning, was initiated because Indonesia's education system had consistently suffered from low learning outcomes. The reform seeks to improve learning outcomes, education quality, and equality for all Indonesian students by shifting learning paradigms and practices, empowering educators and school leaders, and promoting engagement of the entire education ecosystem. To address the above demands, *Kurikulum Merdeka* (*KurMer*) is enacted at all levels of education. It is essentially the refinement of *Kurikulum 2013*, which has been implemented for almost a decade.

The integral concept of this new curriculum is teachers' flexibility in facilitating students to develop their competencies based on their learning paths and adopting the principles of differentiation in learning. As the refinement and the reform of the previous national curriculum, *KurMer* put forward a set of standards for teachers to create and promote an interactive, inspiring, and fun learning atmosphere in which the learning process is carried out and liberates them from extra administrative activities. The learning is richly envisioned not only to motivate and challenge students to participate actively but also to provide sufficient space for initiative, creativity, and independence that corresponds to the talents, interests, and physical and psychological development of students to support the formation of a learner profile which is based on the Five Principles of Indonesian: Pancasila. A standard to highlight is that technology use is the driver in the execution of *KurMer* (MoEC, 2020).

Relevant research brought forward teachers' use of technology as an effective means of differentiation in instruction (Morgan, 2017), increasing students' inclusion (McLaughlin, 2012; Sandberg, 2022). However, it takes teachers' measures to consider which technology should be integrated into lesson planning (König et al., 2022). It is determined by two fundamental beliefs: perceived usefulness and perceived ease of adoption. When teachers are assured that technology enables students to obtain new

skills and experience minimal effort needed to integrate the technology, they will likely adopt it (Liu et al., 2020).

This qualitative research aims to investigate MES-usability, teachers' intent to adopt MES in *KurMer*, and potential strategies used to adopt MES in class by tracking teachers' experiences through the following questions:

1. How do teachers' experiences influence MES-usability and teachers' intent to adopt MES in *KurMer*?
2. What improvements are needed to enable MES to adhere to today's English learning in JHS?
3. What potential strategies are perceived by teachers to infuse DI through MES adoption?

As this research is a post-developmental study, improvement of MES is required for the quality MES-Gold release. This last release shall provide concrete evidence of collaborative research, continued professional development, and significant intellectual contribution to the nation. The study focuses more on MES-usability as it reflects the positive experience of teachers' actual use for learning enhancement and teaching delivery support for improving quality English learning at JHS in Indonesia.

2. LITERATURE REVIEW

2.1 Adhering Digital Technologies to Differentiated Instructions on Post-Pandemic Education: Issues and Challenges

Differentiation in education is a powerful and challenging concept (Brevik et al., 2018). It has been extensively discussed in light of the global goals of Education for All and Inclusive Education (UNESCO, 1990, 1994). The principles of practicing differentiation in class have allowed students to feel accepted, challenged, and successful. The principles (flexible grouping, appropriately challenging tasks, and emphasis on an individual basis) are taken to decide students' success criteria (Eikeland & Ohna, 2022). As the philosophy of teaching approach, differentiation refers to teachers' committed plan to accommodate students' needs by recognizing and articulating their differences (Tomlinson & Imbeau, 2023) and adapting curricular contents, teaching strategies, instructions, resources, and products to align with students' needs (Shareefa, 2023).

However, using technologies to differentiate instructions tends to terrify teachers in such ways as the malfunctioning of technology (Johler & Krumsvik, 2022), lack of technology leadership and technology integration plans for the effective use of technologies in schools (Vatanartiran & Karadeniz, 2015). Meanwhile, researchers who have examined its use through decision-making and policy enactment have recorded the success of using technology in language learning to improve instruction (Irons, 2020). The contribution of digital technologies to societal transformation has undoubtedly been beyond the evolution of technology. It has been the driving force for improving services, processes, and even intangible knowledge bases (Teixeira et al., 2021) in every aspect of life.

2.2 The Crisscrossing of Teacher Experience and MES-Usability

The concept of teacher experience in this study was taken from the user experience (UX), defined by the International Organization for Standardization (ISO) as a person's perceptions and responses that result from the use or anticipated use of a product, system, or service (Zhu & Zhang, 2023). This concept is considerably discussed in terms of users' (in this study, teacher) perceptions toward digital technologies used in online learning, and it is believed to determine the users' willingness to use and, at last, adopt technologies that are successful in digital products (Hart & Sutcliffe, 2019; Maslov et al., 2021; Rohles, 2022).

There are two reasons for UX to explain the drivers of a user's intention to use or adopt a technology. First, UX is rooted in the psychological need to experience positive emotions during pleasurable and meaningful activities. These emotions are significant in improving learning and evaluation of creativity and decision-making. In short, UX reflects the fulfillment of the user's needs. From this perspective, UX can explain how teachers' experience in using MES can motivate, engage, and improve students' well-being through pleasurable and meaningful activities. Second, UX strongly emphasizes the role of experience dimensions: the pragmatic and hedonic dimensions as the drivers for the intention of teachers to adopt a particular technology. The pragmatic dimension refers to teachers' ease of use perceptions toward a technology. This dimension is also known as usability. Meanwhile, the hedonic dimension relates to teachers' feelings of psychological need fulfillment. Both dimensions provide recommendations for designing and developing technology for targeted users (Karlin & Ford, 2013; Rohles, 2022).

In this study, MES-usability refers to teachers' easy perception of using MES based on their positive experiences and meaningful activities. The Beta version of MES was launched in 2021 and has been used in more than 300 JHS nationwide. It is a free, open-access CMS or learning platform to aid teachers and students with digital English language learning materials. A CMS is a learning platform for application development within educational contexts. This makes the tasks of program developers easier due to its efficiency in managing, retrieving, and sharing content (Rola & Kuchta, 2020) and is considered the most suitable digital technology in online learning (Mateljan et al., 2008). When used, CMS can meet the needs of information activities and implement new methods of communication between members of the education community. At the same time, CMS can be sustainably developed and improved to ensure quality. MES is a CMS powered by Google that enables MES to have a single on-access platform.

Simultaneously with the release, MES was introduced and supplemented with good practices from teachers who had previously received the coaching program. MES offers the development of multiliteracy competencies and opportunities to learn English enjoyably with or without teacher assistance. The materials are developed in reference to the genre approach and essential competencies as mandated in *Kurikulum 2013* and involve various applications available in cyberspace. For its specificity in providing English language learning materials for JHS students, MES has been granted an Intellectual Property Rights (IPR) certificate.

MES is an agile learning platform that provides students with relevant digital materials and offers opportunities based on students' individual tasks and collaborative work. The interactive MES courseware uses multimedia online digital applications to keep students engaged with the content. It integrates various educational learning

platforms concerning the genre texts and essential competencies set as the learning objectives.

3. METHODS

3.1 Context of Research

MES was initially developed as digital materials, organized and sequenced by topics to align with Kurikulum 2013 requirements for each level of JHS. Creating MES as a CMS aimed to make managing digital materials more convenient and flexible, considering limited internet access and digital skills. Starting during the pandemic, MES provides teachers complete control over platforms, allowing for more effective and efficient use to address students' needs.

3.2 Setting and Participants

Group interviewing was employed as the primary technique to collect research data. Group interviewing promotes the co-construction of meaning among participants (Flick, 2018). It is a conversation involving more than two people participating and directed by one to attain in-depth information (Cohen et al., 2018). Participants are expected to describe their experience using MES now and then. It can generate a wider range of responses than individual interviewing and bring together people with varied perspectives. It also enables each participant to speak matters based on one's voice of their portrayed behaviors or activities. Cost and time efficiency are also considered when employing group interviewing. During the interview, two roles functioned to ensure teachers' voices were comprehensively articulated: interviewer and participant.

In this study, two researchers functioned as the interviewers, and others were involved in data preparation for the following stages. Meanwhile, the participants were nine JHS teachers. Setting a small number of participants is suitable for situations where they are highly engaged in the topic (Flick, 2018) and have experience using MES for two years. Also, these teachers were recruited based on the standards used in selecting participants, whether or not they are 'rich in information'. The purposive sampling technique was used to select participants, maintain the result's credibility (Patton, 2002), and capture teachers' voices (Creswell, 2012). Also, participants were selected using maximum variation sampling, considering the geographical distribution of the schools where they taught and at which the technical problems (insufficient internet coverage, unstable network connections, and limited data plan) were mostly encountered. It is expected that the participants can represent the distribution of MES adoption in Indonesia. The participants were from Riau, West Sumatra, West Java, Central Java, and Maluku Islands.

Potential ethical issues were minimally addressed by changing participants' names to initials (FI, AM, SY, YA, AS, LI, VT, NN, and IM). All participants agreed to participate in the research by signing a consent letter. All participants are university graduates from relevant programs to teach English for the levels of JHS.

3.3 Instruments

In the format of semi-structured interviews, an interview guide was used, and it was previously planned as the similarity base for asking three main questions. This format also allows flexibility for participants to speak about matters lying under the surface of their portrayed behaviors or activities (Cohen et al., 2018). The questions are: 1) What are teachers' perceptions of using MES during and after the pandemic?; 2) How can MES be integrated to promote inclusion? and 3) What strategies are specifically used?

An observation checklist, taken from https://www.unl.edu/gradstudies/current/teaching/Classroom_Observation_Form.pdf, was utilized to triangulate findings. The checklist has four elements: organization, presentation, interaction, content knowledge, and relevance. Two videos of teachers adopting MES in class during the pandemic were observed using the checklist. The checklist is provided in the Appendix.

3.4 Data Collection Procedure

Before the group interview, participants were given a consent letter. Those who agreed to participate could select a convenient time slot. They were informed that the interview would be recorded and transcribed for analysis. A semi-structured format allowed interviewers to guide the conversation towards key topics, ensuring the teachers' voices were heard. The interview lasted two hours and began with a reminder of its purpose. It was conducted in a relaxed and non-intimidating atmosphere.

3.5 Data Analysis

Research data were achieved by transforming recorded interviews into verbatim transcription. Three corresponding flows of activity were taken during data analysis: data condensation, data display, and conclusion drawing and verification (Miles et al., 2014). Data condensation was started by transcribing interviews using Whisper, a free, open, and automatic speech recognition model released by Open AI. At this flow, data were also coded.

Counting frequency and sequencing particular words, phrases, or concepts found in the data were the two main activities to construct code in this study. The researchers used keywords such as CMS, learning platform, English materials, learning resources, and digital technology to identify MES. In particular, the researchers analyzed and matched the keywords to compare teachers' perceptions and how the researchers initiated the MES identity development. The constructed codes are used to organize the findings in the results. Meanwhile, discussions are done based on the research questions.

Condensed data were constructed and analyzed through content analysis. A descriptive qualitative approach carefully examined each word to affirm the teachers' perspectives, leading to conclusions and theory verification. The data included selected utterances to facilitate conclusions and verification. Researchers finalized conceptual constructions from the codes, exploring their relationships and effects. Observations of patterns, explanations, and assertions from the interviews led to conclusions and the verification of data condensation.

To ensure the consistency of findings toward research data, a triangulation was done by comparing interviews with documents on teachers' adoption of MES in class and a literature review. The goal was to study potential strategies to infuse DI in Indonesia and to adhere MES to English learning in JHS through MES adoption. Differences in findings are attempts to capture the improvement needed (Patton, 2002).

4. RESULTS

Three codes emerged and were used to answer the research questions: 1) Usability of MES: Now and Then; 2) Sustainable improvements of MES; 3) MES-adoption to infuse DI.

4.1 MES-Usability: Now and Then

Participants expressed three positive perceptions of MES during their first acquaintance with it during the pandemic: it was an effective English learning platform, awesome web-based English learning resources, and students were enthusiastic boosters. The perceptions are displayed in Table 1.

Table 1. Positive perceptions of adopting MES during the pandemic and supporting utterances.

Positive Perceptions of MES	Utterances (Participants' Initials)
Effective English Learning Platform	"From teachers' perspectives, MES is rock. As a CMS, MES is effective (AM) because it is systematically developed so that it is easy for teachers to practice, and the instructions are clear so that it is easy for students to learn the materials. The content follows the age and developmental background of JHS students (12-15 years old), which is presented with various digital learning tools (YA)"
Awesome Web-Based English Learning Resources	"Wow, MES is an awesome and very good (YA, IM, NN) English (learning) website that can be used for online and onsite classes, made by a university team from Indonesia, so that its utilization feels more genuine because it is developed by Indonesians and used by Indonesians (AS)"
Students' Enthusiast Booster	"MES boosts students' excitement (SY) and enthusiasm for learning English (FI, LI, FT, NN)"

From the interview, it was found that all participants shared positive responses toward their initial experiences using MES. Understandably, MES was present when students could access online learning. In addition, English textbooks specifically designed for online learning of JHS were scarce, and delivering lessons was burdening as not every teacher had the necessary support facilities. At the same time, teachers had no choice but to digitalize their onsite materials. Accordingly, MES was utilized as the main reference in English learning. From this standpoint, MES completely fulfills teachers' needs to sustain learning during the pandemic. This finding proved that the initial purpose of developing MES was accomplished. This led to a question: "What makes MES so phenomenal?"

To recall, MES was essentially developed as the response to the emergency of learning loss. Since its launch in late 2021, MES has been used as a substitute for materials specifically designed for onsite learning with a teacher facilitator. As a learning platform, MES was designed to provide multimodal resources such as videos, audio, and educational games through various learning tools, such as Bamboozle, Canva, and Kahoot, for multiple modes of human-computer interaction for learning purposes during the lockdown period. These had been the advantages offered and made MES phenomenal, as uttered by participants:

- (1) When I used Bamboozle, students were competing to work on collaborative tasks and so enthusiastic that I had to prepare my materials. (SY)
- (2) The tools are largely varied. Bamboozle, Kahoot, and others assist students with interesting materials or engaging presentations on My English Step. (YA)
- (3) I tried to use Word wall (from MES) to divert students' boredom when the only way to deliver teaching was through WhatsApp. (NN)
- (4) It was especially when the games from Bamboozle were played, the class was very lively. (IM)

From the utterances, it should be acknowledged that the developers of MES have succeeded in preparing appropriate learning materials to fulfill Indonesian JHS students during a pandemic and minimizing students' feelings of isolation through its interactive digital learning materials. This interactivity has undoubtedly made MES an engaging English learning platform. Another point to highlight from MES was that it increased students' acceptance and readiness to use technology in learning English. Briefly, it can be inferred that students' digital literacy was cultivated at the same time. Inevitably, the direct impact of the cultivation is that students' self-regulated learning has been facilitated.

Moreover, teachers' positive perceptions can come from their reasoning to accept and be ready to use technologies to deliver teaching and communicate with students fully online immediately. Back in 2021, the good practices supplemented made teachers feel assisted in fully acquiring the required skills to conduct online learning. Therefore, the release of MES has lessened teachers' fear of using technology and improved their technology leadership.

Findings on MES-usability have shown the strong influence of teachers' experience of adopting MES during the pandemic, which resulted in pleasurable and meaningful learning. This hints at the significance of MES in improving English learning in JHS. Another thing to highlight is that *Kurikulum 2013* adhered to the development of MES. Thus, teachers found no 'hiccups' in adopting MES. This has led to teachers' intent to adopt MES for the next teaching experience.

Furthermore, the enactment of *KurMer* only strengthens their intent. Although highly contextual, the findings suggest that MES-usability has expanded over time and resonates with enhanced identities relevant to its external component. Previously perceived as an English Learning Platform, MES has now become the digital interactive learning materials resource for English learning in JHS. But in essence, MES-usability has raised teachers' intent for learning enhancement and teaching delivery support.

Moreover, as the pandemic has no longer been a global issue, anticipating the issue of learning loss is less critical. The next issue to deal with is managing the uncertain impact of learning loss that puts larger gaps in students' levels of achievement. Hence, the MoEC of Indonesia has accelerated the reform in the national

curriculum by bringing the value of flexibility in learning. This is to facilitate differentiated learning with which flexibility is valued. The flexibility, on the one hand, gives more opportunities for teachers to differentiate instructions from the content, process, and product. On the other hand, issues of technology as the driving force have become vibrant.

The reforms inevitably require adopting technology, such as MES in learning, to adhere to the key elements of the curriculum. This requirement is essential not only for teachers but also for MES developers. Inputs from MES users are valued for the Beta release or second result of the iterative development phase and the next newly improved MES to function as the driver in *Kurikulum Merdeka* execution. Participants' perceptions and intent to adopt MES are explored through their utterances, which are displayed in Table 2.

Table 2. Participants' perceptions and intent to adopt MES after the Enactment of *KurMer*.

Participant's Initials	Response toward adopting MES after the Enactment of <i>KurMer</i>	Perceptions toward the Usability of MES
IM	"... my first reference is MES. "	Digital Interactive Learning Materials Resource for English Learning in JHS
AS	"I'll still use MES as one of the main references in developing learning materials."	
VT	"When we are confused about what to put in the teaching module, I took several materials from MES and aligned them in developing learning materials."	
YA	"..... because the text (of MES) is already multimodal, I think lengthening text can improve students' literacy."	Digital Literacy Diagnostic Assessment
AM	"I will keep using MES as a multimodal learning resource as it can serve as the bridge to teacher's problem of diagnostic assessment."	

Based on the utterances, it was found that there is a shift in teachers' perception of MES in the enactment of *KurMer*. They now perceive MES as a 'Digital Interactive Learning Materials Resource' for English learning in JHS. Another finding is that although MES was developed based on topic mapping adhered to *Kurikulum 2013*, the contents are adaptive to *KurMer*. These findings have proved MES to be an agile learning resource that harnesses the changing demands influenced by social background uncertainties and is an effective learning platform for any applicable English learning purposes in JHS.

A quite different finding was also revealed: MES is perceived to function as 'A Digital Literacy Diagnostic Assessment'. Relevant research has raised the use of technology to assist teachers in evaluating, diagnosing, and regulating the learning behavior engagement of students (Mhlongo et al., 2023). Technology is generally believed to facilitate teachers' planning on formative assessment to assist them in instructional design that caters to students' needs and to improvise questions within a lesson (Maeng, 2017). To sum up, as a technology, MES can be used as a teacher's facility to recognize and align students' needs through diagnostic and formative assessment.

4.2 Sustainable Improvements of MES

During the interview, participants also shared their input on improving the beta release of MES. The inputs are classified according to the criteria from the Alpha review expectation development phase (Allen, 2012). The criteria are ‘content’, ‘functionality’, ‘appropriateness’, and ‘documentation of what has been missing and incomplete’. Here is the display of utterances aligned with the criteria.

Table 3. Alpha review expectation development phase.

No.	Criteria	Utterances
1	Content	“The goal to be achieved in the Kurikulum Merdeka is to realize the profile of students characterized by the Five Principles of Indonesians (Pancasila). It would be useful to consider the themes for the content to be integrated.” (NN) “I think it is not the length of the text. Questions for detailed information are too many.” (FI) The length of texts is sufficient for JHS students (AS), but a longer text might promote students’ critical thinking.” (YA) “There are too many apps; there are Quizzes, Bamboozle, Live Worksheets. It is hard to align the apps with the lesson goal.” (AM)
2	Functionality	“Then there might be an input for Teachers’ manual. The last unit of grade7, maybe lesson 4 or 5, is blank. There’s no content accessed.” (LI) “It is preferable if the characters in videos are real human rather than cartoon or animation. Also, there should be considerations to pick up Indonesians’ local wisdom to raise students’ awareness of the importance of mastering English for future education/ jobs.” (YA, AS) “It is expected that MES has a section containing steps to use each application for new users.” (SY) “Bad weather affects content loading speed.” (AS)

Based on the utterances, content improvements are needed to elevate 1) the relevance of MES teaching instructions to the English learning objectives and 2) the readability of the content. It prompted the addition or removal of less relevant content to the enactment of *KurMer*. Moreover, improvements are relevant to ‘functionality’. This criterion is essential to evaluate the compliance of the beta release to the overall performance of the complete MES as a learning platform and to consider positing MES as CMS with the concerns of insufficient internet access. Hence, improvements can increase students’ inclusion by aligning students’ interest to the technology adopted, raising MES-usability to be adherent to English learning in the enactment of *KurMer*.

To conclude, two criteria for the expected MES release have been fulfilled: ‘appropriateness and documentation of what has been missing and incomplete’. It means that MES is the appropriate technology for JHS students nowadays. Moreover, MES has fulfilled the needs of JHS English learning. The other two criteria, content and functionality, are still under teachers’ consideration to be improved. Accordingly, improvements to MES’s last release will refer to these criteria.

4.3 MES-adoption as a strategy to Infuse DI

There are two findings under this code. First, all teacher participants agreed that MES adoption has been the strategy to infuse DI. Second, any technology adoption can never be successfully integrated when no good questions are posed. Indeed, teachers posing varying questions is the best strategy for students to develop their skills of acquiring and processing information into useful knowledge instead of asking them to memorize and recall it (Eliasson, 2017).

Findings under this code are triangulated by confirming them to documents of teachers adopting MES as teaching delivery support and learning enhancement. Two videos and several pictures were used to compare the findings from the interview to the teachers' documents on adopting MES post-pandemic. Video 1 is accessed from <https://www.youtube.com/watch?v=T-gbnSeEQnQ>, and video 2 <https://www.youtube.com/watch?v=xKwzLRPNGPI>. There are several differences between the two videos regarding the time of MES adoption and the learning environment.

The first video was taken during the pandemic, and MES was used as the English learning platform. It was a record of ERT that took the concept of fully online learning with teacher-led instruction. In this video, the teacher still lacks a technology integration plan. Questions posed in the video were mainly closed questions to elicit facts (Svanes, 2023) based on the materials discussed. 'What is the dialogue about?', 'What is the girl's name?', and 'How old is she?' were posed several times. One open question was posed at the end of the lesson: 'What have you already learned today?'. This last question was intended to monitor students' engagement during the lesson. The questions also allowed a wider range of differences in students' responses depending on students' proximity to the learning goal or readiness (Zerai, 2023). One recommended aspect is giving students sufficient time to answer questions.

Meanwhile, the second video was taken post-pandemic, when MES became a digital learning object. It was recorded during onsite learning to differentiate the learning process. In this video, student-centeredness was leveled up. The strategy chosen could enhance an active classroom atmosphere, and therefore, students' attentions were drawn, and their interests were motivated. Questions posed were intended for classroom management and practicing skills, for instance, 'Can you match the number, how to say ...' (a particular number) and 'repeat after listening to the audio'. Adopting MES in this video is to sustain students' engagement by varying students' ways of acquiring and processing information. At this point, teen students' interest in technology is considered to promote students' inclusion.

Moreover, based on the pictures of teachers adopting MES, MES engaged and motivated students through individual (Pictures 1, 2, and 5) and group learning (Pictures 3 and 4). Although the questions posed were not visible, several pictures showed similar MES activities done with video 2. It should be concluded that MES tasks might be organized into individual tasks, small group discussions, or class collaborative tasks. Teachers' ideas to organize them mirror their strategy to increase students' inclusion through their learning preferences. Pictures shall be accessed with permission through <https://drive.google.com/drive/u/2/folders/1KXXaDsyO4iVXOIftwXw77e6UZn18NYkp>.

5. DISCUSSION

5.1 The Influence of Teachers' Experience on MES-Usability and on Teachers' Intent to Adopt MES in *KurMer*

Two points shall be inferred from the findings. First, the MES developers have achieved their second goal of developing MES: to fulfill the necessity of digital-based English language learning materials for JHS students to adhere to the national curriculum during the pandemic and post-pandemic. Second, previously positioned as a learning resource, MES is now an adaptive digital learning object. The difference between the two is barely visible but can be specified. Learning resources can be defined as learning materials (digital or non-digital forms of text, audio, graphic images, photos, videos, simulations, animations, learning objects, programmed learning modules, and so on) offered in the context of a course or curriculum to help learners achieve educational objectives (Alphonse, 2019; Apoki et al., 2020).

Meanwhile, a digital learning object is a learning resource that can be modified based on provided criteria (such as concepts, educational objectives, and learning styles), adhering to the adaption rules established in its contextual connection. A learning object refers to any free, accessible, small-sized digital or non-digital entity which is used, reused, or made as a reference in the context of a course that can be inserted, interchanged, and intermixed for instructional use to support the learning process (Area-Moreira et al., 2023; Rob et al., 2004). When mediated with technology, a learning object is a type of digital educational resource or called a digital learning object that takes the shape of tasks or exercises for students to perform based on a video to watch, a reading text, an instructional animation, or any other digital resource intended for educational purposes (Area-Moreira et al., 2023).

In general, MES-usability shall be an indicator of the resilience of MES to be adopted for English learning in JHS of Indonesia (Novák et al., 2023). When linked to the concept of UX, teachers positively perceived MES, resulting in the sustained intent to adopt MES. Their experience of successfully delivering interactive and enjoyable learning in the classroom during the pandemic has fueled their willingness to adopt MES post-pandemic regardless of the reform in the national curriculum.

5.2 Improvements Needed for MES-adoption English Learning in JHS

Improvements in MES functionality can impact teachers' intent to adopt it in the future (Camilleri et al., 2023; Tandon et al., 2018). In this study, teachers' readiness, acceptance, and experience in adopting technology positively impacted functionality. Teachers' overview of MES functionality has aligned with its development initiatives. However, given the change of context in the curriculum, it needs to be improved to match participants' considerations.

Although it did not emerge as a specific code in data condensation, it was discovered that MES is preferable for younger teachers. Experienced teachers prefer to join the coaching program for their professional development so that they can adopt MES and other technologies. In this case, teachers' confidence level and digital competencies influence their intent to use MES as technology to enhance language learning (Camilleri & Camilleri, 2017).

It is assumed that the usability of MES may depend on the length of teaching experience of teachers. Moreover, even though not yet empirically measured, the finding shows that the uncertain impact of learning loss might be managed by adopting MES. It also implies a necessity for an in-depth examination of MES to change and influence aspects such as roles, practices, and culture of technology integration at schools.

5.3 The Potential Strategy Used to Infuse DI Through Mes Adoption

Since MES adoption was perceived as a strategy to infuse DI, the discussion is focused on questioning strategies. As the nature of MES is a technology used to enhance language learning, teachers should decide their purpose when adopting MES to determine effective questioning strategies. Then, teachers must have a review of at least four purposes in adopting technology in language learning (Zhu & Zhang, 2023). First, teachers should promote differentiating instruction practices by assisting students struggling with reading and writing development (Sandberg, 2022). Second, teachers must deliver instructional content with limitless resources to reach their goals through a joyful, engaging, and exciting learning experience (Brevik et al., 2018). Third, teachers need to restructure teaching approaches by highlighting that each technology brings different experiences to language learning due to the context and factors influencing it (Lai et al., 2018). Last, teachers have to inform and conform to instructional design that matches students' needs (Maeng, 2017).

Teachers' questioning strategies include prompting, probing, redirecting, cold calls, and waiting (Suartini et al., 2020). However, the interactivity of human-computer interaction is different. Hence, the process of a meaningful online learning experience should be reframed into the Community of Inquiry of Garrison et al. (2000). Therefore, the three interdependent elements, Teaching Presence, Cognitive Presence, and Social Presence, should exist to infuse DI through MES adoption.

The above findings confirm that process differentiation embraces students' readiness and interest. Teachers' higher proficiency in differentiating can be achieved through planned lesson design and resources (Estaiteyeh & DeCoito, 2023). MES enables the teacher to plan their lesson by providing adaptive learning resources. Process differentiation also creates greater student inclusion and equates students' opportunities to participate and interact in learning. All findings from interviews and documents have affirmed that appropriate teacher modification questioning strategies can promote inclusion in DI when adopting and adhering to MES to *KurMer*. Through varied strategies, students' readiness, interest, and learning profile are appreciated (Tomlinson & Imbeau, 2023).

6. CONCLUSION

MES is an adaptive digital learning resource for English learning at JHS levels in Indonesia. It is also an agile technology that enhances language learning and adheres to the powerful and challenging concept of differentiation infused in *KurMer*. MES's improvements will focus on content, functionality, and questioning strategies to infuse DI.

Teacher experience influences the increase of MES-usability and determines their intent to adopt MES in learning. MES-usability represents 1) teachers' positive

experience to improve their students' learning, 2) teachers' ease of use in adopting MES to bring pleasurable and meaningful learning, and 3) teachers' fulfillment of a psychological need to make students motivated and engaged during learning. In addition, teachers' experiences can expand their perception of MES from an effective English learning platform to an adaptive digital learning object.

Both teachers' experience and MES usability are strongly related, although they have not yet been empirically measured. However, since MES usability concerns human-computer interaction and individual perception, it is highly contextual and dependable on the influence of external components such as curriculum reform and the length of professional service. It varies over time and becomes the limitation of this research. Future research should investigate how much MES enhances students' potential to learn English.

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