



Mapping an EFL Teacher's Technology Integration and Challenges in Online Teaching to a Student with Special Need

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Abstract. In the twenty-first century, Information and Communication Technology (ICT) is seen as a vital component of education. Recent studies have examined the use of technology in online English instruction and learning. Despite the pandemic, few of these studies addressed the extent to which EFL teachers integrate technology to teach students with special educational needs (SEN) in the context of online learning. Using the Substitution, Augmentation, Modification, and Redefinition (SAMR) model framework by Puentedura, the purpose of this study is to determine the extent of an EFL teacher's integration of technology into online English instruction for a student with hearing impairment in an inclusive school setting, as well as the challenges. To collect data necessary for achieving the objectives, an in-depth interview was used. This research provides a good reference for EFL teachers interested in incorporating technology into their online or blended instruction of students with SEN. In addition, several suggestions are offered for the post-pandemic integration of technology into English instruction for students with SEN.

Keywords: Online English Teaching · Teaching English to Students with Special Needs · Technology Integration · SAMR Model

1 Introduction

Although technology in education has grown, few studies have been done on how it could help students with special educational needs (SEN) learn English [1]. Cumming and Rodriguez [2], for instance, investigated how elementary school students with language-based disabilities could use iPads in their language arts lessons. The study showed that students were more interested in their schoolwork when using iPads. This was shown by keeping track of how many notices were needed to keep the students on task. Also, interviews with the teachers and students showed that both were really thrilled with the iPad to teach language arts. Alison et al. [3] reported on another study that looked at how shared story reading with e-texts and embedded prompts affected the vocabulary and reading comprehension of grade-level narrative texts by elementary school students

with ASD (Autism Syndrome Disorder) who were also learning English. The results of their study showed that reading a story together with the help of technology was a good way to teach both understanding of WH questions and recognizing WH rules and definitions. These things show that technology needs to be a part of the learning process, not just as a tool. For students with SEN, technology is an important part of learning a language, especially English.

Teaching English to students with SEN is a challenge that requires teachers to work together and take on some of the responsibility. This is especially relevant when the teachers had decided to provide online courses during the Covid-19 epidemic. According to research by Asri et al. [4], early reading instruction for students with special needs in an inclusive elementary school has not been successful during the Covid-19 epidemic. An additional issue with online education for students with special needs conducted via WhatsApp Group is uncovered by Yazcayir and Gurgur's study [5]. Students with special needs were unwilling and unable to adjust to distance education, none of them received support education services, they lacked access to computers and the internet, they were unable to interact, and there was a lack of cooperation among teachers, students, and parents.

Based on English teachers' thoughts and experiences, a recent study by Khakim and Septianto [6] explored the condition of English teaching to students with special needs in Indonesian schools during the Covid-19 pandemic. This study showed that an English teacher who works with students who have special needs faces several challenges. The first concern is that different students with special needs require different kinds of care. The second concern is that the teacher has less control over how their students learn when they are far away. The third concern is that learning English through a virtual meeting doesn't work well. The fourth fundamental concern is how parents see their children's development. During the Covid-19 epidemic, these studies did not identify any technologies utilized when learning English through a virtual conference that are ineffective for students with SEN. Abdallah [7] suggests that students with SEN are likely to benefit from supplementary educational offerings, such as technology. This concept, out of the limited number of studies on teaching English to students with SEN online during the Covid-19 pandemic, is supported by the findings of Blázquez-Arribas et al. [8] who investigated EN-Abilities, a virtual learning environment designed to teach English to students with SEN in Europe, based on the educational potential of using Universal Design for Learning (UDL) and Web Content Accessibility Guidelines (WCAG). The primary characteristics of the EN-Abilities platform demonstrate that SEN students can have access to online English instruction. In addition, Kim and Fienup [9] examined a basic online intervention utilizing a concurrent multiple baseline design through Google Classroom, Flipgrid, and Google Meet for three second-grade students with disabilities who accessed the remote curriculum unreliable. During the Covid-19 pandemic, the results indicated that task analysis and virtual reward were effective interventions for enhancing students' participation in online learning.

According to the current study by Blázquez-Arribas et al. [10], integrating technology must have significant functions in a specific educational setting. The need for technology integration prompts scholars to develop technology integration models, one of which is the SAMR framework by Puentedura. Many studies using this framework

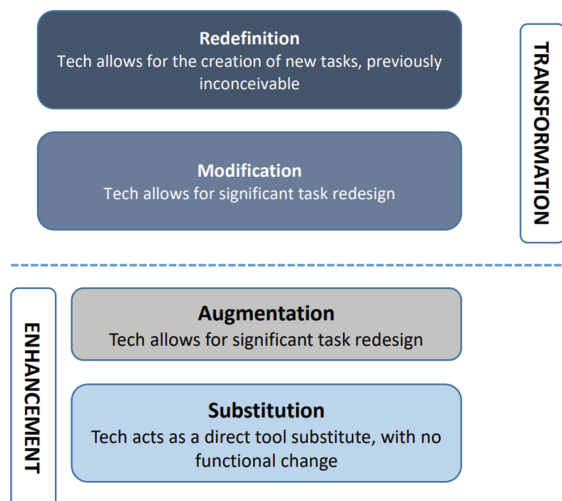


Fig. 1. SAMR model

have shown that the SAMR model is more practical than theoretical in English language teaching, as evidenced, Budiman and Ngadiso [11] investigated EFL teacher's belief and practice on integrating information and communication technology (ICT) in the classroom using SAMR model to analyze the data; Budiman et al. [12] explored EFL teacher's belief and practice on integrating ICT in the classroom by implementing SAMR model in teaching reading descriptive text; Setyaningsih et al. [13] focused on mapping Indonesian EFL teachers' perception and practice of technology integration viewed from SAMR model; Wahyuni et al. [14] scrutinized EFL teachers' technology integration into English Instructions applying SAMR model; and Fathurohman and Rahmawan examined teacher's technology integration ELT based on SAMR model in writing skill [15].

The SAMR model was established to investigate the ways in which educational activities incorporate the use of technology. In addition to that, the purpose is to encourage teachers to improve classroom activities by making better use of technology. The SMAR model created by Puentedura in 2006 [16] and 2013 [17] is shown here in Fig. 1.

Prior research has focused on the use of the SAMR model to evaluate EFL teachers' beliefs and practices regarding the integration of technology in ELT, reading, and writing in offline classrooms. To the best of our knowledge, none of them considered technology integration in the context of implementing the SAMR paradigm for online English teaching and learning during the Covid-19 epidemic, as mandated that all EFL teachers use technology. In addition, the previous studies on EFL teachers' technology integration using the SAMR model only explored the issues in teaching and learning English for regular students, whereas a further study is required to investigate EFL teachers' technology integration using the SAMR model in English teaching and learning for students with SEN, as they also deserve to receive quality educational services, as stated in Law No. 20 of 2003 on the national education system. Consequently, the purpose of this study is to reveal an EFL teacher's technology integration in teaching student with

SEN through online English teaching practices during the Covid-19 Pandemic based on the SAMR model developed by Puentedura in 2006 and 2013 and to investigate the EFL teacher's challenges in offering various appropriate solutions. Those have not been addressed by the previous studies [18–20] in an inclusive environment that welcomes students with SEN and gives them the same chances to learn as regular ones.

2 Method

The present study employed qualitative descriptive research to investigate an EFL teacher's technology integration into online English instructions to a student with special need, i.e. hearing impairment. The participant, Mrs. Ovi (pseudonym), holds a master's degree in English as a foreign language (EFL) teacher at a prestigious inclusive senior high school in Kediri, Indonesia. She has been teaching at the school for a year and both before and during the covid-19 pandemic, she has been using technology to teach her students with SEN in an inclusive class. Before working with students with special needs, she wrote her thesis on an issue in special needs education. In addition to this, she has been having regular conversations with the school's guidance counselor about how to deal with students with SEN. An in-depth semi-structured interview to know deeper about the information about the subject [21] through chats, a call, and voice notes were used to get the data.

The participant agreed that she was only taking part because she wanted to, and she gave her permission to take part in the study as planned. The interview data that had been recorded was then typed up. Then, the transcribed data were put into groups based on what they were about. Braun and Clarke [22] say that thematic analysis has six basic steps: getting to know the data by reading the transcriptions carefully, coming up with initial codes, looking for themes, defining and naming themes found, and writing a report.

3 Findings and Discussion

This section exhibits and analyzes the findings. It examines the types of technology included into online English instruction focused on reading activities for a student with SEN, specifically the one with a hearing impairment, as well as how technology was integrated into online classes in an inclusive context during the Covid-19 Pandemic. Due to its simplicity and clarity of levels, as mentioned by Hilton [23], the SAMR model is applied in this study to frame the inquiry into the EFL teacher's existing technology practice in reading instruction. As noted previously, this study also examines the barriers that the EFL teacher encountered when teaching English, particularly reading, to a student with hearing impairment through online classes and identifies suitable alternatives for inclusive settings.



Fig. 2. One of reading texts shared in Google Classroom

Technology Integration into Online English Instructions to Students with SEN in Inclusive School

Substitution

Substitution level is when technology is used to replace other ways of learning without changing how they work. To this extent, Mrs. Ovi utilized WhatsApp to have questions and answers if necessary and Zoom Meetings to substitute offline explanations of reading materials.

“I usually use Zoom to have synchronous meetings to explain certain types of reading text”

This finding complements the prior research by Kim and Fienup [9] demonstrating that a video-based conference, such as Zoom or Google Meet, can also be used to teach English to students with SEN in an inclusive setting. Mrs. Ovi also used Google Classroom to help the students with their reading assignments and to share PDF files about reading text instead of using paper (Fig. 2).

“For students with SEN including one with hearing impairment, they have been familiar with Google Classroom so we focused on utilizing this platform”

These results show that Google Classroom can be used not only for offline learning, such as the studies of Budiman et al. [12] and Wahyuni et al. [14], but also for online English learning in an inclusive class, the same as Kim and Fienup's [9] study showed.

Augmentation

The term “augmentation” refers to the use of technology to replace other learning activities with new functionality. It is found in this study that the incorporation of technology into teaching reading online to the student with hearing impairment in inclusive class conducted by Mrs. Ovi has reached this level of enhancement. She incorporated appealing pictures of city icons to teach a narrative text and a motivator, actress, or actor as the



Fig. 3. The motivator's picture to teach reading

media to teach a biographical recount text into her recorded videos to get the students' attention (Fig. 3).

“When explaining reading materials, a narrative text, asynchronously, I employed images presented in an interesting video to make my students eager to learn. For the one with hearing impairment, he can watch my video explanation and increase its volume”.

Kim and Fienup's [9] study of how appealing images in the form of virtual rewards can boost online learning access for students with SEN including English language learners (ELLs) in inclusive classrooms during the pandemic corroborates the usefulness of images or pictures for online teaching to students with SEN. This idea backs up the present study's result that pictures can be a good way to teach online English reading to student with hearing impairment.

Modification

Modification is the use of technology to noteworthy redesign educational activities. In this study, the EFL teacher's activity in teaching reading using technology was by giving a detailed explanation of a narrative text highlighting the important parts with a digital marker such as its generic structures and language features. She was simultaneously documenting her explanation with a video recording application, then putting the video into her YouTube channel to enhance the students' understanding, including the one with hearing impairment (Fig. 4).

“In addition to using Zoom, I like creating videos to assist my explanations of particular types of material so that my students may comprehend them better.”

This result is consistent with the findings of Budiman et al. [12], who found that an EFL teacher can reach the Modification level by combining audio, video, and text remarks in iMovie presentations to teach reading. Moreover, in the context of online classrooms during the Covid-19 pandemic, developing interactive instructional videos to teach a student with a hearing impairment to read in an inclusive atmosphere can drive an EFL teacher to attain Modification level.

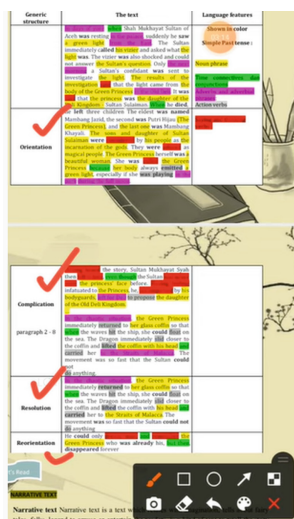


Fig. 4. The teacher's explanation uploaded in YouTube (<https://www.youtube.com/watch?v=T-FKGGST6HU0>)

Redefinition

Redefinition is when technology is used to make new tasks and activities that were not possible in a traditional classroom before. It lets us rethink and refresh the way we teach and learn in the classroom. Most of the time, speaking and writing are the activities in the classroom that use technology at the redefinition level [14]. Because this study focused on reading, the finding indicated that the EFL teacher has not reach this level when teaching the student with hearing impairment in the inclusive school.

The Challenges Faced by the English Teacher in Integrating Technologies to a Student with Hearing Impairment in Online English Instruction During Covid-19 Pandemic in an Inclusive School

As this study was conducted online in an inclusive school, the main challenge of teaching reading was related to insufficient bandwidth the students had as told by Mrs. Ovi.

“Bandwidth limitations among students pose the greatest barrier to online English instruction. Therefore, the teaching and learning of reading was not always effective.”

In this case, she let all the students to engage in one-on-one WhatsApp conversations to clarify any points that needed restatement, and she also made reading-related instructional videos. According to Mrs. Ovi, the student with hearing impairment benefited the most from these alternatives. First, he may respond to the reading-related teaching videos with high-volume headsets. Second, as Mrs. Ovi did not approve WhatsApp groups for online English teaching and learning during the Covid-19 pandemic in his class, he felt more comfortable conducting one-on-one WhatsApp talks to discuss reading-related

materials because he was not noticed by other classmates. Thus, teaching and learning English online, particularly reading is effective for the student with hearing impairments.

This result is somewhat at contrast with Asri et al.'s [4] conclusion that early reading education for students with SEN in inclusive primary schools has not been effective during the Covid-19 outbreak. The reason could be due to the varying levels of students in the study, senior high school students versus primary school students. Moreover, Yazcayir and Gurgur's [5] research indicates that WhatsApp Group for students with SEN in online education rendered them hesitant and unable to adapt to distance education. This concern pertains to the finding of this study that WhatsApp conversations between two individuals are more fruitful.

4 Conclusion

In this study, the EFL teacher incorporated several types of technology into online instructional reading activities to a student with hearing impairment during Covid-19 pandemic in an inclusive school including Google Classroom, Zoom Meeting, WhatsApp, and YouTube. Additionally, she has integrated technology to the Substitution, Augmentation, and Modification levels, but not the Redefinition level. This finding indicates that the teacher did not want to require her students, particularly the one with a hearing impairment, to spend excessive amounts of bandwidth which has been highlighted as the primary concern in online reading instruction to reach Redefinition level.

In a nutshell, EFL teachers in inclusive schools should be taught how to best use technology to help their students learn, especially those with SEN. This study suggests that more practice and research be done on how to teach English to students with special educational needs (SEN), both through interviews and observations, especially when it comes to other language skills and components. Also, the future researcher could use SAMR and other frameworks to investigate or compare how technology is used in English class. Lastly, the use of technology in ELT is intended to assist students learn and support teachers teach better.

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Authors' Contributions. The authors' contribution related to this study is to provide an appropriate model, SAMR, to integrate technologies in EFL classroom to students with SEN to learn better.

References

1. N. Hockly, "Special educational needs and technology in language learning", *ELT Journal*, vol. 70, no. 3, pp. 332–338, 2016, DOI: <https://doi.org/10.1093/elt/ccw033>
2. T. M. Cumming and C. D. Rodriguez, "Integrating the iPad into language arts instruction for students with disabilities: Engagement and perspectives," *J. of Special Education Technology*, vol. 28, no. 4, pp. 43–52. 2013, DOI: <https://doi.org/10.1177/016264341302800404>

3. C. Alison, J. R. Root, D. M. Browder, and L. Wood, "Technology-based shared story reading for students with Autism who are English-language learners," *J. of Special Education Technology*, vol. 32, no. 2, pp. 91–101, 2017, DOI: <https://doi.org/10.1177/0162643417690606>
4. D. N. Asri, B. E. H. Cahyono, and R. P. Trisnani, "Early reading learning for special needs students: Challenges on inclusive primary school during COVID-19 pandemic," *Linguistics and Culture Review*, vol. 5, no. 1, pp. 1062–1074, 2021, DOI: <https://doi.org/10.37028/lingcure.v5nS1.1489>
5. G. Yazcayir, and H. Gurgur, "Students with special needs in digital classrooms during the Covid-19 pandemic in Turkey," *Pedagogical Research*, vol. 6, no. 1, pp. 1–10, 2021, DOI: <https://doi.org/10.29333/pr/9356>
6. N. Khakim and A. Septianto, "Challenges of teaching English to students with special needs during pandemic Covid-19 in Indonesian school based on teacher's experience," *Proceeding AISELT (Annual International Seminar on English Language Teaching)*, vol. 6, no. 1, pp. 282–286, 2021.
7. M. M. Abdallah, "Towards improving content and instruction of the TESOL/TEFL for special needs' course: An action research study," *Educational Action Research*, vol. 25, no. 3, pp. 420–437, 2017.
8. L. Blázquez-Arribas, M. A. Barros del Rio, C. M. Sigona, and Alcalde E. Penalver, "Teaching English to special educational need students through an online tool," *TESOL Quarterly*, vol. 55, no. 3, pp. 694–707, 2021, DOI: <https://doi.org/10.1002/tesq.3038>
9. J. Y. Kim, and D. M. Fienu, "Increasing access to online learning for students with disabilities during the COVID-19 pandemic," *The Journal of Special Education*, vol. 55, no. 4, pp. 213–221, 2022, DOI: <https://doi.org/10.1177/0022466921998067>
10. L. Blázquez-Arribas, M. A. Barros del Rio, C. M. Sigona, and E. A. Penalver, "Teaching English to special educational need students through an online tool," *TESOL Quarterly*, vol. 55, no. 3, pp. 694–707, 2021, DOI: <https://doi.org/10.1002/tesq.3038>
11. Budiman and N. Ngadiso, "EFL teacher's belief and practice on integrating information and communication technology (ICT) in the classroom", *The Asian EFL Journal*, vol. 2, no. 4, p. 298, 2018.
12. B. Budiman, R. Rahmawati, and R. A. Ulfa, "EFL teacher's belief and practice on integrating ICT in the classroom: A case study on the implementation of SAMR model in teaching reading descriptive text at MA Assalam, Sukoharjo," *J. Penelitian Humaniora*, vol. 19, no. 2, pp. 39–51, 2018, DOI: <https://doi.org/10.23917/humaniora.v19i2.6809>
13. E. Setyaningsih, D. S. Wahyuni, and D. Rochsantiningsih, "Mapping Indonesian EFL teachers' perception and practice of technology integration," *Inter. J. of Education*, vol. 13, no. 1, pp. 44–52, 2020, DOI: <https://doi.org/10.17509/ije.v13i1.22643>
14. S. Wahyuni, J. Mujiyanto, D. Rukmini, and S. W. Fitriati, "Teachers' technology integration into English instructions: SAMR model," *Proceedings of the International Conference on Science and Education and Technology (ISET 2019)*, 2020, DOI: <https://doi.org/10.2991/asschr.k.200620.109>
15. D. F. Fathurohman and A. D. Rahmawan, "Teacher's technology integration ELT based on SAMR model in writing skill," *J Edu: J. of English Edu.*, vol. 1, no. 3, pp. 180–187, 2021, DOI: <https://doi.org/10.30998/jedu.v1i3.5983>
16. R.R. Puentedura, Transformation, technology, and education [Blog post], 2006. [Online]. Available: <http://hippasus.com/resources/tte/>
17. R.R. Puentedura, SAMR: Moving from Enhancement to Transformation, 2013. [Online]. Available: <http://www.hippasus.com/rpweblog/archives/2013/05/29/SAMREnhancementToTransformation.pdf>

18. D. N. Asri, B. E. H. Cahyono, and R. P. Trisnani, "Early reading learning for special needs students: Challenges on inclusive primary school during COVID-19 pandemic," *Linguistics and Culture Review*, vol. 5, no. S1, pp. 1062–1074. 2021, DOI: <https://doi.org/10.21744/lingcure.v5nS1.1489>
19. W. Evans, R. A. Gable, and A. Habib, "Lessons from the past and challenges for the future: Inclusive education for students with unique needs," *Edu. Sci.*, vol. 11, no. 6, p. 281, 2021, DOI: <https://doi.org/10.3390/educsci11060281>
20. D. Puspitasari, "English Language Teaching in Inclusive Class: A Challenge," *Qalamuna - Jurnal Pendidikan, Sosial, dan Agama*, vol. 11, no. 1, pp. 37–46, 2019.
21. K. Brounéus, "In-depth interviewing: The process, skill and ethics of interviews in peace research," in *Understanding Peace Research: Methods and Challenges*, pp. 130–145, May 2011. DOI: <https://doi.org/10.4324/9780203828557>
22. V. Braun and V. Clarke, *Qualitative Research in Psychology: Using Thematic Analysis in Psychology*, London: Routledge, 2006.
23. J. T. Hilton, "A case study of the application of SAMR and TPACK for reflection on technology integration into two social studies classrooms," *The Social Studies*, vol. 107, no. 2, pp. 68–73, 2016.

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